N·S·D·C
National
Skill Development
Corporation

District wise skill gap study for the State of Karnataka

Disclaimer:

National Skill Development Corporation (NSDC) engaged ICRA Management Consulting Services Limited (IMaCS) to prepare this report, which is based on independent research and analysis done by IMaCS. This report is not based or derived from any other report or research paper. Any similarity with any other paper may purely be a coincidence.

This report is for information purposes only. While due care has been taken during the compilation of this report to ensure that the information is accurate to the best of IMaCSs' and NSDC's knowledge and belief, the content is not to be construed in any manner whatsoever as a substitute for professional advice.

IMaCS and NSDC neither recommend nor endorse any specific products or services that may have been mentioned in this report and nor do they assume any liability or responsibility for the outcome of decisions taken as a result of any reliance placed in this report.

Neither IMaCS nor NSDC shall be liable for any direct or indirect damages that may arise due to any act or omission on the part of the user due to any reliance placed or guidance taken from any portion of this report.

Year of publishing: 2013

Acknowledgments

We are grateful to the Government of Karnataka and its various departments for their contribution towards the successful completion of the study. Our special thanks to the Commissioner, Directorate of Employment and Training, Government of Karnataka, who gave his time for focused and intense discussions.

We acknowledge with gratitude the support provided by the district level departments, skill training institutions, NGOs, industry representatives and youth of the State for their contribution towards the study.

In addition, we convey our gratitude to all those who have, in some way or other, contributed towards successful completion of this study.

Table of Contents

List of Tables

List of Figures

The district has a total workforce of about 7.4 lakh persons. Of this, 31 per cent are cultivators, 44 per cent are agricultural labourers, four per cent are workers in household industry and 22 per cent are other workers.

List of Abbreviations and acronyms

Abbreviation/ acronym	Full form
AMC	Annual Maintenance Contract
AMFI	Association of Mutual Funds in India
ASI	Annual Survey of Industries
ATDC	Apparel Training and Design Centre
BEML	Bharat Earth Movers Limited
BFDA	Brackish-water Fish Farmers Development Agency
BFSI	Banking, Financial Services and Insurance
BHEL	Bharat Heavy Electricals Limited
BIAL	Bangalore International Airport Limited
BPO	Business Process Outsourcing
BUD	Bangalore Urban District
CADD	Computer Aided Design and Drawing
CAM	Computer Aided Manufacturing
CEC	Central Empowered Committee
CNC	Computer Numerical Control
Cr.	Crore
DCE	Department of Collegiate Education
Deptt.	Department
DIC	District Industries Centre
DRDA	District Rural Development Agency
DUDC	District Urban Development Cell
e.g.	Example
EDP	Entrepreneurship Development Programmes
EoI	Expression of Interest
FDI	Foreign Direct Investment
FKL	Food Karnataka Limited
GDDP	Gross District Domestic Product
GDI	Gender Development Index
GDP	Gross Domestic Product
GI	Geographical Indication
GIM	Global Investors Meet
GKVK	Gandhi Krishi Vignan Kendra
GSDP	Gross State Domestic Product
ha	Hectares
HAL	Hindustan Aeronautics Limited
HDI	Human Development Index
HHI	Household Industry
HR	Human Resources
HRD	Human Resource Development

Abbreviation/ acronym	Full form
ICT	Information and communication technology
IPR	Intellectual Property Right
IT	Information Technology
ITC	Industrial Training Centre
ITES	IT Enabled Services
ITI	Industrial Training Institute
KCPF	Karnataka Co-operative Poultry Federation
KEONICS	Karnataka State Electronics Development Corporation Limited
KGF	Kolar Gold Fields
KHWATI	Karnataka Handloom Weavers Advanced Training Institute
KIADB	Karnataka Industrial Areas Development Board
KLPD	Kilo Litres Per Day
KOMUL	Kolar Chikkballapura District Co-operative Milk Producer's Union
KPCL	Karnataka Power Corporation Limited
KPO	Knowledge Process Outsourcing
KSHDC	Karnataka State Handicrafts Development Corporation Ltd.
KSSIDC	Karnataka State Small industries Development Corporation Ltd.
KUM	Karnataka Udyog Mitra
KVTSDC	Karnataka Vocational Training and Skills Development Corporation
KYC	Know Your Customer
LMIS	Labour Management Information System
MES	Modular Employment Scheme
MHRD	Ministry of Human Resource Development
MMTPA	Million Metric Tonne Per Annum
MMV	Mechanic Motor Vehicle
MNCs	Multi-national companies
MoU	Memorandum of Understanding
MSME	Micro, Small & Medium Enterprises
MVSRI	Sir M Visvesvaraya Sugarcane Research Institute
MW	Megawatt
n/a	Not applicable
NBFC	Non-Banking Financial Corporations
NGO	Non-Governmental Organisations
NH	National Highway
NIFT	National Institute of Fashion Technology
No.	Number
NSR	National Skills Registry
PPP	Public-Private Partnership
PUC	Pre-University College
QCI	Quality Council of India

Abbreviation/ acronym	Full form
R&D	Research and Development
RBI	Reserve Bank of India
SC	Scheduled Caste
SCM	Supply Chain Management
SEZ	Special Economic Zone
SHGs	Self-Help Groups
SHLCC	State High Level Clearance Committee
SJSRY	Swarna Jayanti Shahari Rozgar Yojana
SLSWCC	State Level Single Window Clearance Committee
SOP	Standard Operating Procedure
sq.ft.	Square Feet
sq.km.	Square kilometre
SSC	Sector Skill Council
SSI	Small Scale Industry
SSLC	School Leaving Certificate
ST	Scheduled Tribe
SWOT	Strengths, Weaknesses, Opportunities, Threats
WHO	World Health Organisation
WSHGs	Women Self Help Groups

1. Introduction

In the last decade, Karnataka has emerged as a key State in India with setting up of knowledge based industries such as IT, biotechnology and engineering. The State leads in electronics, computer software, and biotechnology exports. It has also come to be known as the 'Science Capital of India', with over 100 Research & Development (R&D) Centres, and a preferred destination for multinational companies (MNCs) with more than 650 such companies already located in Karnataka. Karnataka's capital Bengaluru is known as the 'Silicon Valley of India' and is ranked among the top four technology clusters of the world.

The State was created on 1st of November, 1956. It covers an area of 191,791 sq.km., which is 5.8 per cent of the total geographical area of India, making it the eighth largest State in India in area terms. It has a total population of 61 million persons, which is 5.1 per cent of India's total population. The State is divided into 30 districts, which are further divided into 175 sub-districts and 29,406 villages. Kannada is the most widely spoken and official language of the State. As of 2011, the State has achieved the literacy rate of 75.6 per cent, which is slightly higher than the All-India average of 74 per cent.

As of 2011-12, the State had a Gross State Domestic Product (GSDP) of Rs. 298 thousand crore at constant prices and the per capita income was Rs. 69,493 per person per annum. Services sector made the biggest contribution to GSDP at 54 per cent, followed by 28 per cent in industry and 17 per cent in agriculture. However, in terms of worker distribution[1], agriculture employs the majority of the population at 55 per cent as cultivators (29 per cent) and agricultural labourers (26 per cent). The four per cent are workers in household industry, and remaining 40 per cent are 'other workers[2]'.

Education and skill up-gradation has become the corner stones of Government Policy in Karnataka. The State Government is providing thrust on vocational training. It has opened 289 polytechnic institutes throughout the State, in addition to setting up of 1,507 Industrial Training Institutes (ITIs). Assistance is also provided to private players for setting up training institutes within the State.

In 2008, the State Government set up the State Skill Commission with a mission at empowering all individuals through improved skills and knowledge. The Government has also set up a Knowledge

[1] As of Census 2001.

[2] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc.

Commission (*Karnataka Jnana Aayoga*) within the State on the lines of the National Knowledge Commission. In addition, Karnataka Vocational Training and Skills Development Corporation (KVTSDC) has also been set up for furthering the agenda of skill development in the State.

Given the above background and the growing importance of skill development in the knowledge based State of Karnataka, the National Skill Development Corporation (NSDC) mandated ICRA Management Consulting Services (IMaCS) to conduct the district wise skill gap study for the State of Karnataka.

1.1. Study objectives

1. Review the socio-economic profile of the districts covering demography, economic profile of district by industry, state of education etc.,
2. Identify developmental opportunities keeping in mind factor endowments and stakeholder perspectives
3. Identify specific developmental initiatives/projects which have impact on employment generation
4. Articulate the aspirations of the youth
5. Identify the current and future (2011 – 12 to 2017) skills and manpower requirement by industry and estimate the gap that exists
6. Study the existing VT infrastructure both in the private sector and the government domain
7. Suggest suitable interventions/recommendations to address the skills gap
    - Recommendations have to be specific and actionable
    - Recommendations should also include specific initiatives that NSDC can take based on the mandate of the organisation
8. Create an action plan with indicative timelines

1.2. Approach and Methodology

The study has been conducted in three phases: (1) Diagnostics; (2) Synthesis; and (3) Recommendations. The same has been achieved through a combination of primary and secondary survey.

Phase – 1: Diagnostic Phase

The objective of this phase was to review the socio-economic profile of the State and all the districts of Karnataka. We focused on analyzing the economic and social position of the district based on evolution

of the district and type of economic activity and status of education. The factor advantages, constraints facing the district either due to intrinsic factors or common among the states, and the challenges going forward were analysed. We understood the factor endowments of the district and the potential it holds.

Phase – 2: Synthesis Phase

This was carried-out in two modules:

Module 1- Assessment of Development Potential: The objective of this phase was to identify development opportunities across formal and informal sectors which provide livelihood opportunities for employment.

Module 2 - Assessment of Employment Potential: For the developmental opportunities identified, we forecasted district level employment potential for 2012 to 2017 and assessed the skills required among the district level workforce.

Phase – 3: Recommendations

Based on the results from Phase 1 and Phase 2, we framed our recommendations. Our recommendations focus on various measures targeted at all 'levels' of the skill pyramid towards skill building at a 'district and state level'. Recommendations have interventions for the Government, Private Players and NSDC. Our interventions focus on various measures/potential ideas/projects required to be pursued for development and employment generation.

Primary Research

Given the nature of assignment, IMaCS met key Government officials to review the policy direction. We also interacted with industry representatives in the formal and informal sector to understand human resource and skill requirements from a district and regional as well as those unique to the State. In addition, we administered a structured questionnaire to select companies and educational institutions to map the current and future skill requirement.

As part of the field survey, some of the key stakeholders we interacted with included the Chief Secretary of the State, Principal Secretaries / Commissioners of various Government Departments, Deputy Commissioners / District Commissioners of several districts, industry associations, existing and up-coming companies / entrepreneurs, NGOs, SHGs, select educational institutions and youth groups across districts. The detailed list is available in the annexures.

Secondary Research

We also relied on information available in the public domain that we considered reliable to validate the findings of our primary survey.

1.3. Key definitions used in the report

- **Skill in formal sectors**: Skill levels for formal sectors have been assessed based on the level of education attainment in combination with experience, as follows:
  - **Semi-skilled workforce:** General college degree graduates, ITI pass outs and other vocational training
  - **Skilled workforce:** Specialised degrees such as engineering (including diploma holders), medical, dental, etc.
  - **Highly skilled workforce:** Post graduate degrees such as MA, MBA, PhD etc.
- **Skill in informal sectors**: Skill levels for informal sectors have been assed based on the experience. Number of years for which experience is counted varies from sector to sector.

1.4. Study limitations

- In some of the cases, it was a challenge conducting analysis based on secondary data, as some of the data (especially at the district level) was unavailable – especially at the time series basis. In some cases, there was also discrepancy in the data obtained from the district level vis-à-vis the district level. Therefore, we used data sources which we deemed reliable. Data for some indicators was even out-dated (e.g. Census 2001), as latest data is still not available / published.
- In some of the districts, some key stakeholders were unavailable. However, we tried to establish contacts with as many as possible.
- For some sectors, number of people currently employed is not available in public domain. Thus, we have relied on industry interactions and our approximations in those cases. This is especially true for unorganised sectors.

2. Karnataka

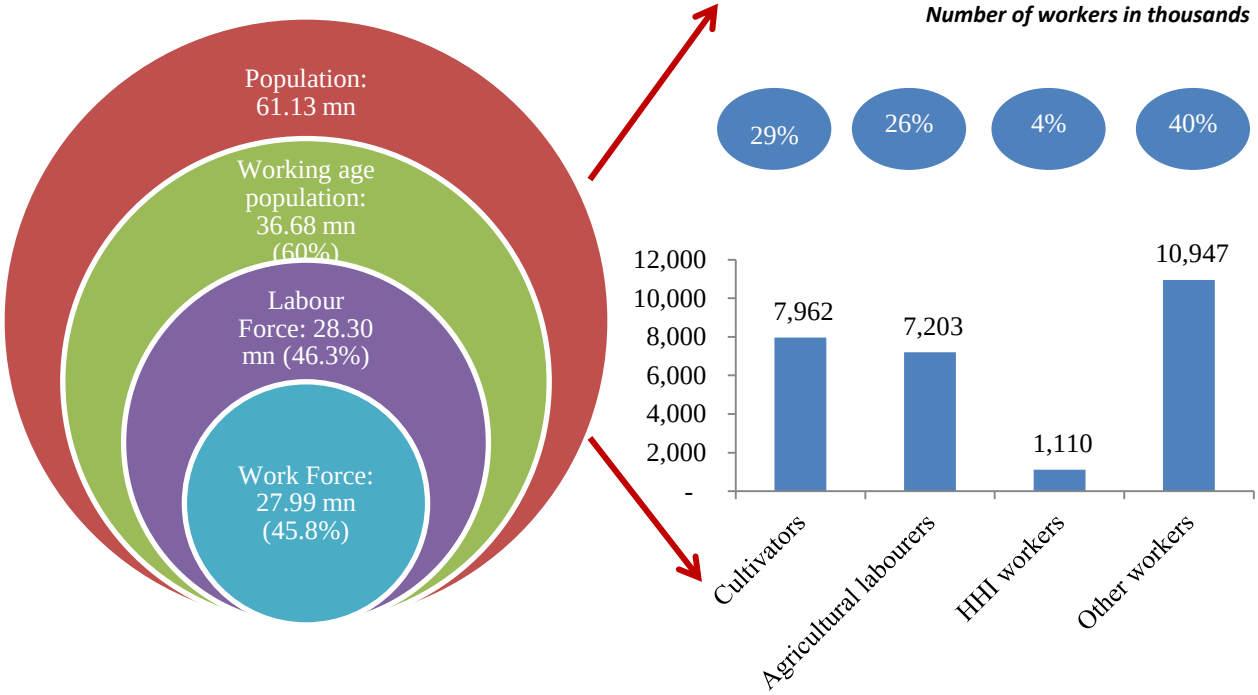
2.1. Socio-economic profile

Karnataka has a total area of 191,791 sq. km. It is bordered by the Arabian Sea to the west, Goa to the northwest, Maharashtra to the north, Andhra Pradesh to the east, Tamil Nadu to the southeast, and Kerala to the southwest. It has 30 districts, 175 sub-districts and 27,481 inhabited villages. Close to 14 per cent of the State area is covered by forests.

2.1.1. Demography

As of Census 2011, Karnataka has a total population of 61,130,704 (five per cent of India population). The population has increased at a rate of 15 per cent between 2001 and 2011. About 60 per cent of the population in the State is in the working-age group (15 to 59 years), while only about 45 per cent is actually working. Of the total workers, 55 per cent are involved in agriculture alone, either as cultivators or agricultural labourers.

Figure 1: Demographic and worker profile of Karnataka



Source: Census 2001, Census 2011, NSSO 66th round on employment and un-employment; HHI: Household industry

Out of 30 districts in the State, nine districts account for over 51 per cent of the population. These are Bangalore Rural, Bangalore Urban, Tumkur, Mysore, Dakshina Kannada, Bellary, Belgaum, Bijapur and Gulbarga. The population concentration is in maximum where there are greater opportunities for employment and where there is industrial development. In addition to these the districts of Bangalore Urban, Belgaum and Mysore also have good connectivity and social infrastructure.

The literacy rate of Karnataka is 75.6 per cent which is slightly higher than the all India rate of 74 per cent. Male literacy stands at 82.85 percent while female literacy is at 68.13 percent

Table 1: Key demographic indicators

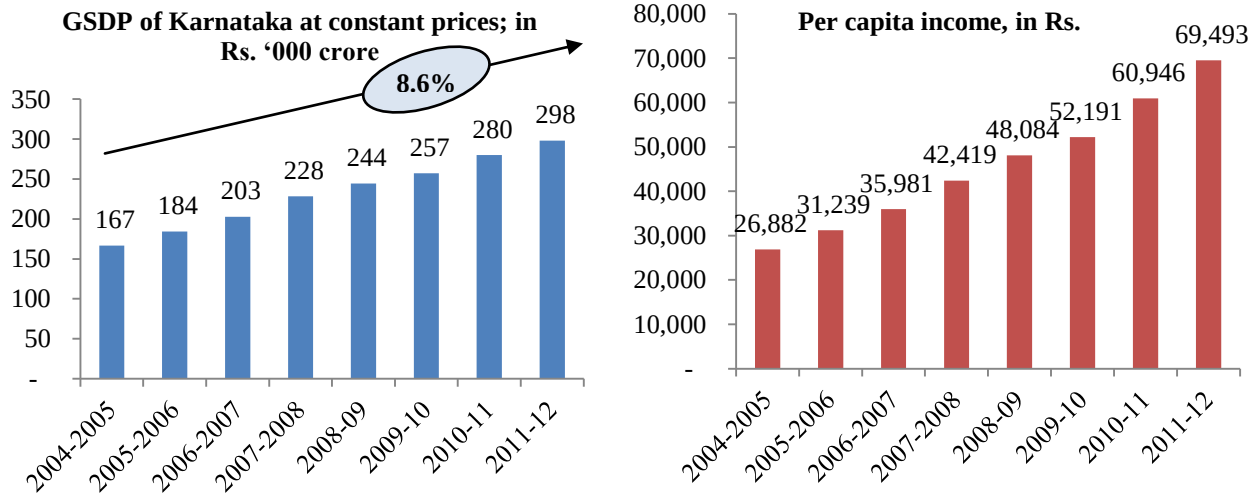
Indicator	Year	Karnataka	India
Population, No.	2011	61,130,704	1,210,193,422
Decadal growth rate of population, %	2001-11	15.70%	17.64%
Urban population as a percentage of total population, %	2001	34%	28%
SC population, %	2001	16.00%	16.20%
ST population, %	2001	7.00%	8.20%

Indicator	Year	Karnataka	India
Sex ratio, No. of females per 1000 males	2011	968	940
Population density, per sq. km.	2011	319	382
Literacy rate, %	2011	75.60%	74%
Working age population* as a percentage of total population, %	2001	63%	57%
Work participation rate^, %	2001	45%	39%

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*
Source: Census 2001, Census 2011

2.1.2. Economy

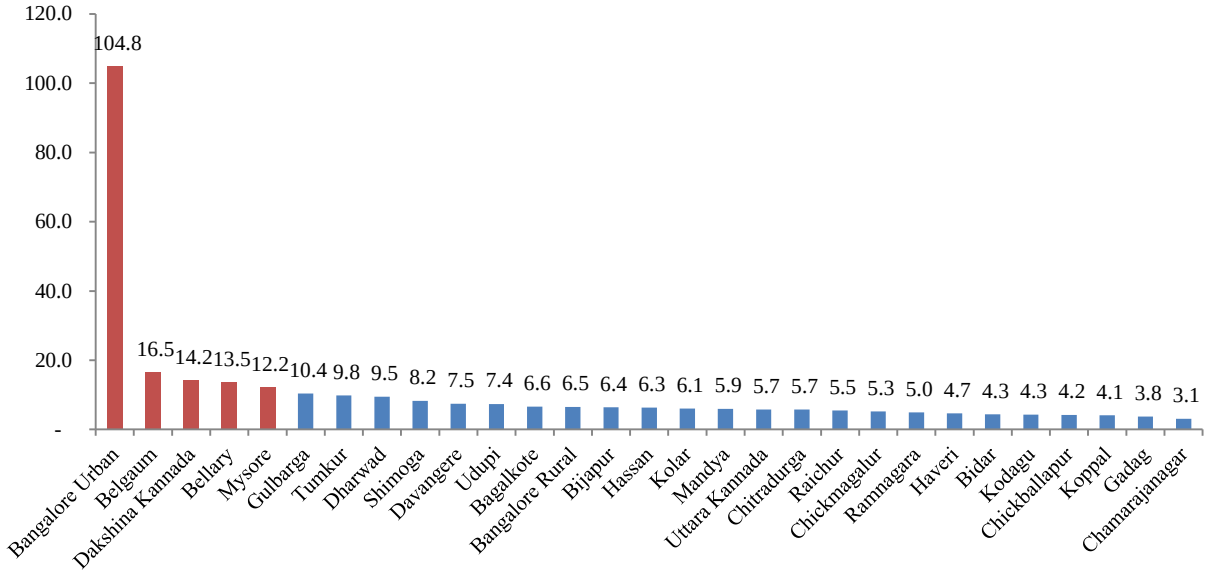
As of 2011-12, Karnataka's GSDP at constant prices stood at Rs. 298 thousand crore. The GSDP at current prices was Rs. 466 thousand crore – 5.62 % of India's GDP. Karnataka's state income has increased at a CAGR of 8.6% between 2004-05 and 2011-12. Its per capita income at Rs. 69,493 – was higher than the India's overall per capita income at Rs. 60,972.



GSDP – Gross State Domestic Product; growth rate calculated at constant prices (base year: 2004-05).
Source: Central Statistical Organisation

Bangalore Urban, Belgaum, Dakshina Kannada, Bellary and Mysore contribute to over 52 per cent of the State's income.

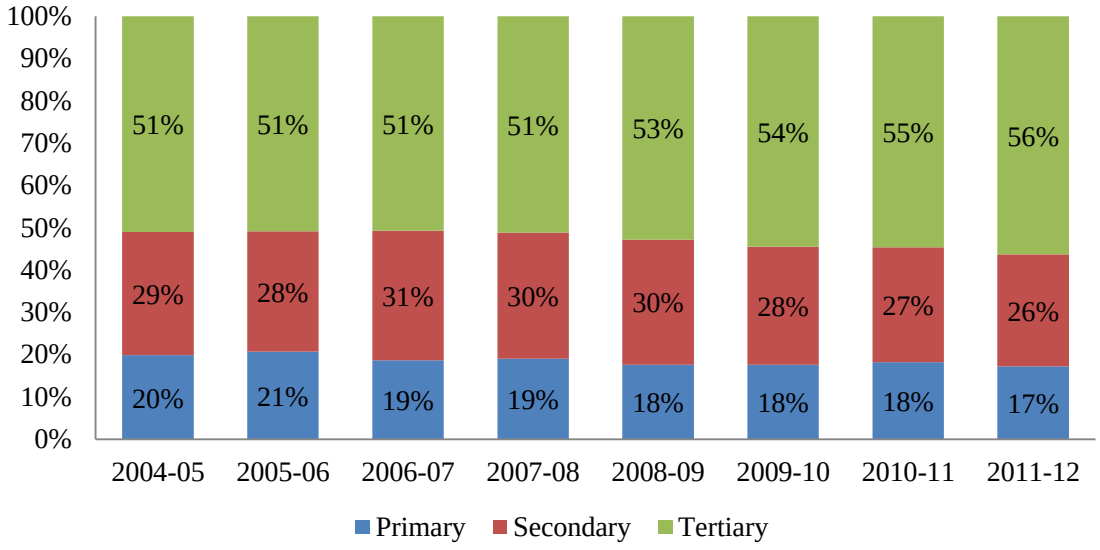
Figure 2: District-wise contribution to GSDP, In Rs. Thousand crore, as of 2008-09



Source: Economic Survey of Karnataka

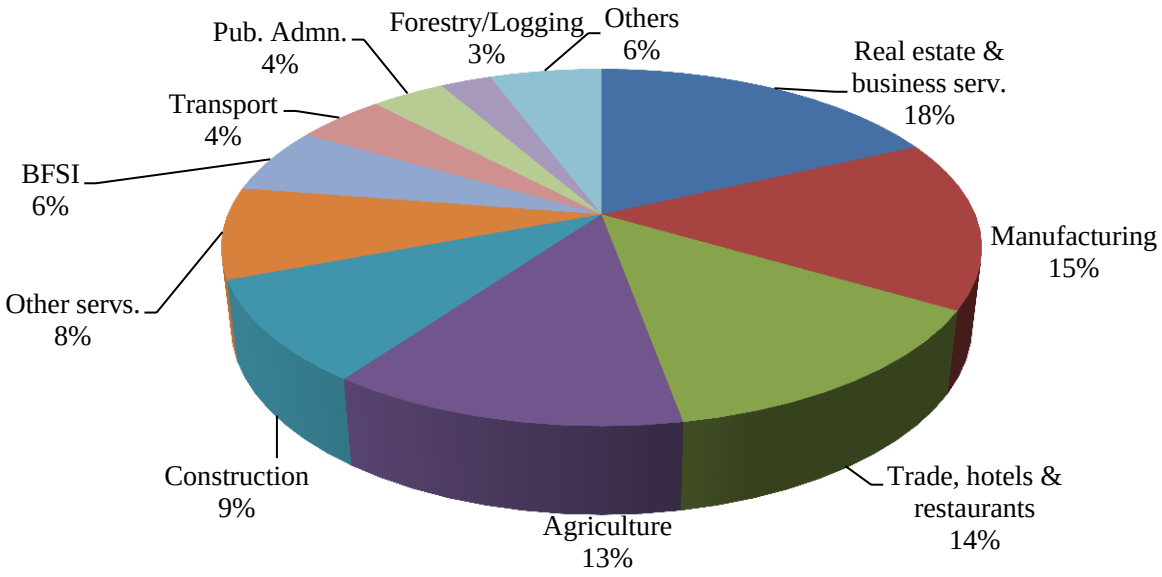
The state economy is pre-dominantly service based, with service sector's share in GSDP at 56 per cent in 2011-12. This is followed by secondary sector at 26 per cent and primary sector at 17 per cent.

Figure 3: Share of primary, secondary and tertiary sectors in Karnataka's GSDP



Source: Economic Survey of Karnataka 2011-12

Figure 4: Sector wise distribution of Karnataka's GDDP, as of 2011-12, 100% = Rs. 465 thousand crore



Source: Economic Survey of Karnataka 2011-12

Agriculture and allied

Even though agriculture and allied sectors have only a 17 per cent share in State's GSDP, they continue to provide employment to about 55 per cent of the total workforce. Allied activities such as horticulture, fishery, sericulture, animal husbandry, poultry and dairy are important sources of income for the people.

As of 2009-10, total cropped area in the State was 128.73 lakh hectares, which is 66 per cent of the total geographical area of the State. Main crops grown in the State are paddy and ragi. The State is also famous for production of coffee, coconut, ground nut sugarcane and cocoons.

Horticulture is coming up as a big opportunity in the State. Total area under horticulture crops is 19.67 lakh hectares, which is 15 per cent of the total cropped area. However, its contribution to gross value of output of agricultural sector is over 40 per cent. Karnataka is the largest producer of spices, aromatic and medicinal plants in the country.

Floriculture also represents a huge potential, with Bengaluru exporting flowers all over the globe. Recognizing this potential of horticulture and the allied processing, thrust is being placed on this sector across districts such as Kolar, Chickballapur, Uttara Kannada, Kodagu, Chikmagalur, etc.

Industry

Karnataka has been spearheading the growth of Indian industry, particularly in high-technology industries in the areas of electrical and electronics, information and communication technology (ICT) , biotechnology and more recently even nanotechnology. The State is a manufacturing hub for some of the largest public sector industries such as Hindustan Aeronautics Limited (HAL), Bharat Heavy Electricals Limited (BHEL), Bharat Earth Movers Limited (BEML), etc. The State is home to some of the biggest organizations of the world, mainly concentrated in Bengaluru, Mangalore and Mysore. Other centers like Hubli-Dharwad, Belagavi, Gulbarga, Ramanagara are also attracting big companies.

Bangalore Urban, Bangalore Rural, Mysore, Tumkur and Dakshin Kannada account for 70 per cent of large and medium scale industrial units in the State. Belgaum, Bellary, Koppal, Bagalkot and Dharwad account for 20 per cent of the same.

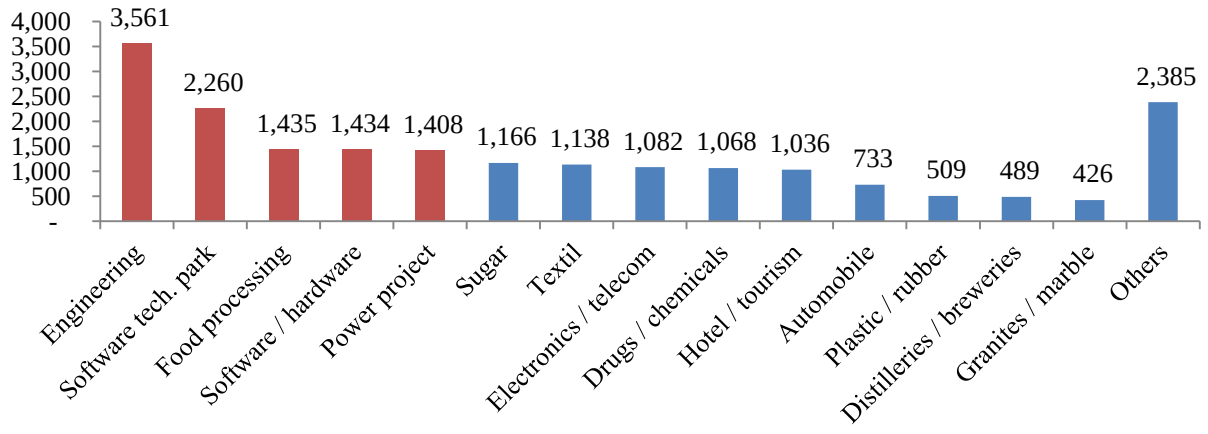
According to Annual Survey of Industries (ASI), the State has about 9,000 factories. Karnataka accounted for 5.38 per cent of the total registered factories in the country in 2009-10. As of December 2011, the State had 810 large and medium scale industrial units. These has invested Rs.91,127 crore in the State. In addition, there were 413,284 Small Scale Industrial (SSI) Units, which had invested Rs. 12,398 crore.

Karnataka Udyog Mitra (KUM) is a single contact point for all investors who intend to set up enterprises/business in Karnataka. The State Level Single Window Clearance Committee (SLSWCC[3]) has cleared 5,661 projects totalling Rs. 84,652 crore between 1988-89 and 2012-13 (up to 72nd SLSWCC meeting). Of these, 1,396 projects have been implemented, totalling investment of Rs. 20,130 crore. Of the total projects implemented, 50 per cent of the investment is concentrated in five sectors alone, namely engineering, software technology park, food processing, software and hardware and power projects.

[3] SLSWCC clears projects worth Rs. 50 crore and below each.

Close to half of the investments have come in Bangalore Urban (41 per cent) and Bangalore Rural districts (eight per cent). This is followed by Bellary, Belgaum, Mysore and other districts.

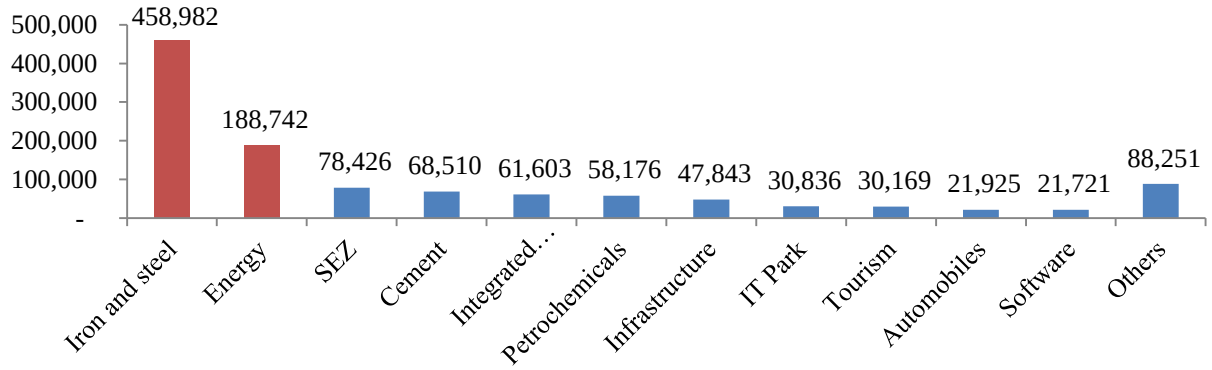
Figure 5: Sector wise investments implemented between 1988-89 and 2012-13 based on clearance received from SLSWCC



Source: Karnataka Udyog Mitra

The State High Level Clearance Committee (SHLCC[4]) has cleared projects worth Rs. 1,155 thousand crore between 2000-01 and March 2012. Over 56 per cent of the investment is concentrated in iron and steel and energy sectors. Majority of the investment at 23 per cent is concentrated in Bellary district. It is followed by Bangalore Urban and Rural, Ramanagara, Bagalkot, Belgaum, Bijapur, Chickballapur, Dakshin Kannada, Koppal and Uttara Kannada districts.

Figure 6: SHLCC projects cleared between 2000-01 and March 2012



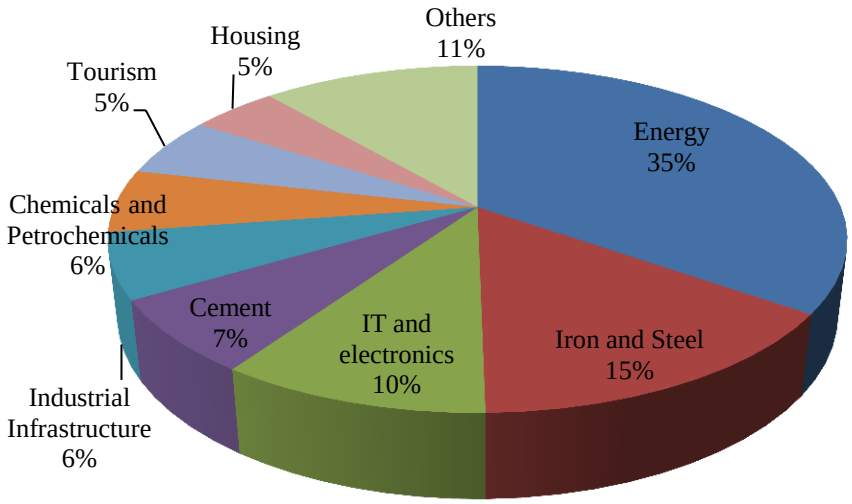
Source: Karnataka Udyog Mitra

[4] SHLCC clears projects above Rs. 50 crore.

The State Government has also been inviting investments into the State through its initiative of arranging Global Investors Meet (GIM) in the State. The first GIM was held in June 2010 and the second one in June 2012. During GIM 2010, the State Government entered into MOUs with 389 companies with an investment of Rs. 3.92 lakh crore which has the potential to create employment opportunities for over seven lakh people. A total of 22 projects with an investment of Rs. 1,836 crore have already been implemented and 237 projects with an investment of Rs. 3.29 lakh crore are under various stages of implementation.

During GIM 2012, about 869 MoUs / Expressions of Interest / Registrations of Interest have been signed for the State across several sectors. Close to 50 per cent of the investment proposals are for energy and iron and steel sectors only.

Figure 7: Sector wise investment proposals from GIM 2012



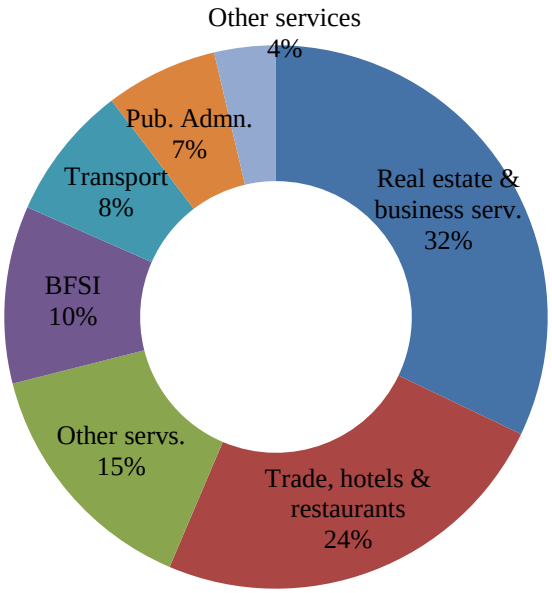
Source: Karnataka Udyog Mitra

Services

The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As of 2011-12, services sector accounts for 56 per cent to the State's GSDP. Its share has increased from 51 per cent in 2004-05.

The biggest contributor to services is the 'real estate and business services' category. This is followed by trade, hotels and restaurants. Tourism industry in the State has boomed due to the presence of several tourism spots.

Figure 8: Share of different services in service sector GSDP of Karnataka; 100% = Rs. 262 thousand crore; as of 2011-12



Source: Economic Survey of Karnataka, 2011-12

2.2. Education and training infrastructure

2.2.1. School education

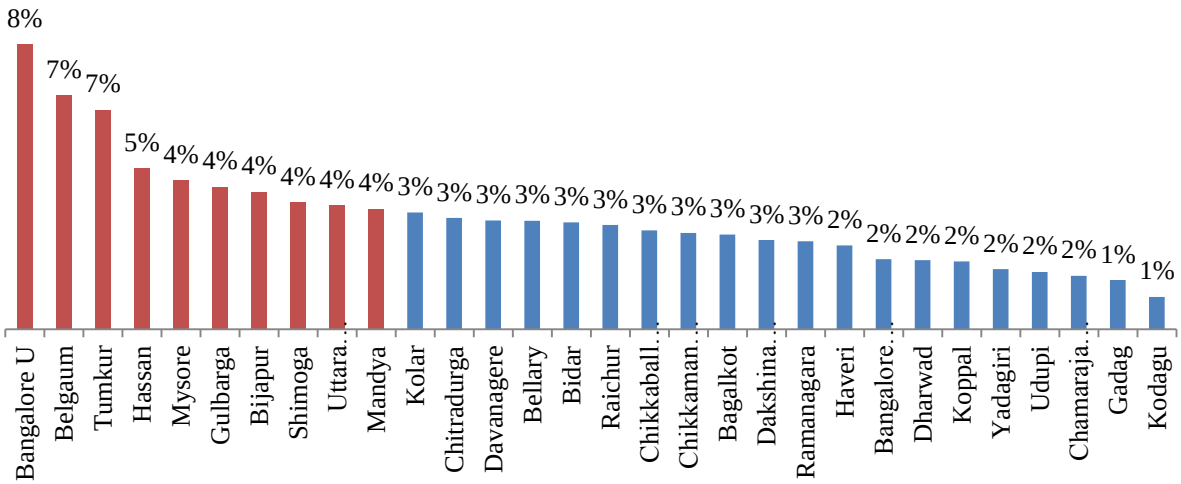
As of 2010-11, Karnataka state had 72,875 schools. Of the total schools in Karnataka, maximum at 8.5 per cent were concentrated in Bangalore Urban district alone. This was followed by Hassan district at 4.8 per cent. The lowest percentage of schools was in Kodagu district at one per cent. The total student enrolment in Karnataka was over 1 crore. About 13 per cent of enrolment was in Bangalore Urban district alone. The district-wise school enrolment is given in the district profiles.

Table 2: No. of schools in Karnataka, as of 2010-11

Sl. No.	Details	Education Deptt.	Social Welfare + Local Body	Aided	Un-Aided	Central + Others	**Total**
1	Lower Primary	23,109	184	239	2,761	9	**26,302**
2	Higher Primary	22,568	539	2,418	7,491	110	**33,126**
4	High	4,278	448	3,367	5,259	95	**13,447**
5	**Total Schools**	**49,955**	**1,171**	**6,024**	**15,511**	**214**	**72,875**

Source: Karnataka Education Department

Figure 9: District wise allocation of schools in Karnataka, as of 2010-11



Source: Karnataka Education Department

2.2.2. Higher and technical education

Karnataka is also known as the 'Knowledge Hub of India'. For higher education, the State has 44 universities / deemed universities. There are a total of 1,362 colleges enrolling 515,838 students. Most of the colleges at 52 per cent are private unaided, followed by 26 per cent Government owned and remaining 22 per cent private aided colleges. College education is taken care of by the Department of Collegiate Education. Karnataka has some of the reputed higher education institutions. These include IISc, IIM, NIT, NLS and other renowned colleges.

Karnataka – the Knowledge Hub

With 103 Research and Development (R&D) Centres, Karnataka is a leading hub for R&D institutes in the

country. Some of the MNCs have based their R&D Centres in Karnataka :

- Allergan Inc's 4th largest R&D centre in the world focuses on ophthalmology, neurology
- Intel's development centre researches software and hardware engineering
- IBM's R&D centre researches telecom and mobile, next generation systems, and information management
- Microsoft Research India announced the opening of a 2nd R&D centre in Bangalore
- Philips Innovation Campus in Bangalore involved extensively in designing innovative engineering, healthcare and consumer lifestyle solutions
- GE Healthcare, Bangalore is GE's innovation centre providing innovative solutions for healthcare industry

Karnataka has vast infrastructure for technical education. As of 2010-11, the State had 289 polytechnics offering different technical courses such as in automobile engineering, civil engineering, computer science, electronics, mechanical engineering etc. Their enrolment was 57,038 students. In addition, there were 187 engineering colleges enrolling 56,235 students. In case of technical education, expansion has mainly taken place in the private sector. Government sector is less than 15 per cent in engineering education.

Table 3: Technical education infrastructure in Karnataka, as of March 2010

Engineering Institutions						
Year	Govt.	Aided	Private	Total	Enrolment	Average enrolment
2008-09	12	10	123	145	53,489	369
2009-10	14	11	149	174	55,760	320
2010-11	14	11	162	187	56,235	301

Source: Economic Survey of Karnataka, 2010-11

2.2.3. Vocational education

For vocational education and training, the State also has 1,448 ITIs / ITCs with a seating capacity for 156,465 students. District wise list of ITIs along with the courses offered is given in the annexures.

Table 4: Key ITI indicators in Karnataka, as of March 2012

Indicator	Value
Total Number of ITI	1,507
Number of Government ITI	191
Number of Private aided ITI	195
Number of Private unaided ITI	1,121
Total Seating capacity	156,465

Source: IMaCS Primary Survey

In addition to the above, the State has several training institutes for vocational training run by both Government and private sectors. To tap the capacity of the private training institutes in the State, IMaCS surveyed top five[5] training institutes in each of the districts. Based on our survey, we found out that the top private training institutes in Karnataka have a seating capacity for over 22,000 students. About 50 per cent of it is for IT/ITES sector (software, hardware, animation, multimedia, BPO training etc.) only. Based on the top training institutes mapped in the 30 districts, we found that 70 per cent of training institutes are concentrated in Bangalore, while the remaining 30 per cent are in other districts.

Table 5: Vocational training infrastructure in Karnataka

District	No. of private training institutions	Seating capacity
Bangalore	500	15,000
Others	200	7040
Total	**700**	**22,040**

Note: Numbers based on coverage of 5-10 top private training institutes in each district.

Source: IMaCS Primary Survey

2.3. Government and private sector skilling initiatives

Initiatives for skill development in the State are being taken both by the Government and the private sectors. The key initiatives are highlighted below.

2.3.1. Government initiatives

The Government of Karnataka has taken up skill development as a major development policy since 2008-09. The State established its own Skills Commission with representatives from trade and industry. It also developed Skill Development Policy on the lines of National Skill Policy. In 2008, the State

[5] The lower limit was set at five, in discussion with NSDC. Wherever, we could survey more than five, we have included that information.

established Karnataka Vocational Training and Skill Development Corporation (KVTSDC) with a target of imparting skills and employment to 10 lakh persons in the next five years.

KVTSDC has been proactively following the agenda of skill development in the State. Some of the key initiatives taken by the Corporation since its inception are:

- Establishing Helpline
- Organizing Skill and Job Fairs
- Skill Training programmes under Modular Employment Scheme (MES) in convergence with other line departments and technical institutes
- Establishing HRD centers in Employment exchanges in PPP with Team Lease.
- Launching of India's first Retail Training Centre in PPP with Bharti Wall Mart in Govt. ITI in Peenya, Bangalore
- To enhance the quality of vocational training, MoU has been signed with Quality Council of India (QCI) for accreditation of vocational training providers.
- Web-based skill development training programme is organized in association with CISCO.

Currently, Department of Employment and Training has established two Multi Skill Development Centres (MSDCs) of international standards in collaboration with German Technical Cooperation.

Table 6: Achievements of State Skill Commission, as of March 2012

Indicator	Value
Mega Skill and Job Fairs conducted	6
Mini Job Fairs conducted	58
Job seekers participated in Fairs	65,716
Employment assistance provided	31,551
Skill development training provided	39,897

Source: Economic Survey of Karnataka, 2011-12

Table 7: HRD Centres set by KVTSDC in Karnataka, as of March 2012

	Mangalore	Bijapur	Kolar	Chamaraja nagar	Hubli	Mandya
Candidates registered	4,767	2,604	3,570	1,510	1,748	919
Employers registered	131	130	84	75	39	38
Assessed	86	960	-	-	-	50
Trained	180	180	638	40	20	-

	Mangalore	Bijapur	Kolar	Chamaraja nagar	Hubli	Mandya
Placed	1,802	1,144	828	431	241	47

Source: Economic Survey of Karnataka, 2011-12

In addition to the above, various training programmes are organized independently by different Government Departments. Some of them are highlighted below:

Table 8: State Government Department organized key training programmes in Karnataka

Sl. No.	Responsible Department	Name of the programme	Description
1	Government of India and Government of Karnataka (75:25)	Oil Palm Development Programme	Farmers are taken on exposure visits and given training programmes on advanced practices in oil palm cultivation
2	Department of Horticulture	Annual training programmes	• Management of pests and diseases, integrated pest management • Importance of organic / inorganic fertilisers; importance of drip irrigation • Rain water harvesting management and their uses • Information about inter cropping, multi cropping etc. • Marketing aspects of horticulture crops • Cultivation practices of medicinal and aromatic plants • Preservation of fruits, vegetables and mushroom cultivation
		Post-harvest management	Processing and value addition for horticulture crops. It includes activities related to grape dehydration, red chilli powdering, vanilla processing, wine making unit and desiccated coconut powder units.
		Mango Development Centre	The Centre is being set up at Kolar and Chikballapur at a total cost of Rs. 19 crore. Training programmes on scientific production and post-harvest management of mango for the Departmental offices

Sl. No.	Responsible Department	Name of the programme	Description
			have been organised.
3	Karnataka Co-operative Poultry Federation (KCPF)	Poultry rearing	Short term training in poultry rearing is provided to farmers.
4	Department of Animal Husbandry	Pig Breeding Programme	793 farmers trained in 2011-12 in pig breeding farms in Hesaraghatta, Kudige, Koila, Bangarapet and Kalasa.
5	Brackish-water Fish Farmers Development Agency (BFDA)	Development of Brackish Water Areas	BFDA has been established at Karwar and Udupi to promote shrimp farming. The farmers are being trained in shrimp farming and also brackish water fish culture. Apart from this, traditional/improved shrimp farming is also being encouraged by providing licences.
6	Karnataka State Electronics Development Corporation Limited (KEONICS)	IT & ITES training	KEONICS has a network of 289 centers across the State. Keonics provides IT training through its own centers, Yuva.Com Centers & Franchisee Centers.
7	Department of Collegiate Education (DCE)	Hosa Hejje	Under this programme, following initiatives are in force: • Sahayog – soft skill training • Manavathe - Value Education • Angala - Spoken English Training • Sampark - free internet facility • Aptamitra - Partnership between Government and aided colleges • Shikshana Adalat - grievance redressal mechanism for teachers. • Daksha' - programme for capacity building for teachers, administrators and non-teaching staff. A training cell is opened in DCE for the purpose.

Source: Economic Survey of Karnataka 2011-12 and IMaCS Survey

2.3.2. Private initiatives

There are several private training institutes in Karnataka. Information on the same has been provided in section 3.3 above. In addition to that training, many skill development initiatives have been taken by corporates also, for in-house training of their employees. Most of the companies we visited during the course of our study hold on-the-job training for new hires and even for experienced workers for their skill up-gradation. Need for this training is felt due to the skill gaps observed in the hired personnel. Some of the key examples are given here.

Key training programmes held by corporates in Karnataka

- **Infosys**: Infosys set up its Global Education Centre in Mysore a decade back. It is one of the biggest training programmes in the country, where entry level engineering graduates are trained. The Centre set up a decade back has trained 100,000 engineering graduates so far.
- **Toyota-Kirloskar**: The company has set up its 'Gurukul' in Ramanagara, where training is provided to all the new joiners. All the entrants to the company go through module wise training for the entire assembly line in the Gurukul.
- **Nestle**: Nestle whose coffee business is heavily dependent on sourcing coffee from the Kodagu district has opened a training institute in Kodagu in January 2012 (NESCAFE PLAN). The institute is a coffee demo farm and training centre for farmers.

Source: IMaCS analysis

2.4. Developmental concerns

While the State is on the path of development and has also been taking several initiatives for skill development, there are certain developmental concerns which need attention. Based on our primary surveys, we have identified the key concerns facing the State today.

2.4.1. Economy

- **Inequitable development**: The district-wise contribution to the GSDP reveals that five districts, namely, Bangalore Urban, Belgaum, Mysore, Bellary and Dakshina Kannada, contribute to over 50 per cent. Even in terms of industrial development, 70 per cent of the large and medium scale industrial units are concentrated in five districts, namely Bangalore Urban, Bangalore Rural, Mysore, Tumkur and Dakshin Kannada. Thus, there are wide disparities in development and

most people flock around these districts only. Certain districts in Karnataka such as Gadag, Bidar, Koppal, Yadgir, Chamarajanagar are mostly dependant on agriculture and allied activities and large scale industrialization is yet to penetrate into these districts. Thus, the State is faced with the challenge of creating equitable and sustainable development for all.

2.4.2. Infrastructure

- **Acute water shortage**: Many districts in the State face acute water shortage due to the dependence on the monsoons and lack of good rain water harvesting techniques. As water is a raw material for the agriculture and allied activities as well as industrial units, the districts face the challenge on how to optimize the low ground water for consumption purposes as well as for economic purposes. The dry districts face the challenge of development and are not able to attain their growth potential, despite the availability of other natural resources.
- **Tourism circuits not adequately developed**: Karnataka is blessed with beaches, hills and temples, the factor advantages that need to be present to develop a place as a successful tourism destination in India. But, these circuits are not adequately developed, either in terms of the roadways in some places (for instance bad road connectivity to key tourist places in Chikmagallur and Chamarajanagar district) or in terms of the adequate number of hotels and guesthouses. This makes it difficult for the tourists to plan an optimal route as they might have to return to their base city every day.

2.4.3. Education

- **Mismatch between curriculum and industry requirements**: Throughout IMaCS primary survey, the repetitive feedback we received from the industry was that the curriculum followed in the technical training institutes needs to be updated to reflect the current market needs. This would enable the students to fit in quickly in the organisations they are placed in. Currently, students who are placed are not able to cope with the shop-floor requirements as well as not able to apply the skills in the practical scenario. Majority of the youth passing out from the educational institutions are reported to be unemployable.
- **Poor quality of laboratory infrastructure:** As far as technical education is concerned, the quality of the laboratory infrastructure is of utmost importance. The higher the incidence of the labs reflecting the latest trends, the better the learning and the skilling will be for the students. Based on our primary survey we have found that majority of the labs in technical training

institutes have out-dated equipment, which are not in line with the current industry usage. This is primarily due to the shortage of funds.

- **Inadequate focus on soft skills and personality development of students:** Barring the students in the main industrial centers like Bengaluru, majority of the students feel they lack the soft skills and personality to compete and land the best of jobs in organisations of repute. The industry stakeholders also echo this perception of students. The development of soft skills, language skills – especially English language – and personality development has thus become a necessity.

2.4.4. Human Resources

- **Preference for white collared jobs:** Based on the stakeholder feedback in the districts, we found that though the industry does have job openings for the youth, in a majority of cases, they do not prefer working on the factories as there is the perception in their minds that blue collared jobs are not socially accepted. Youth do not want to take up blue collared jobs, even if it comes at the cost of his being unemployed for long periods of time. This has created acute shortage of people for blue collared jobs such as welders, masons, construction workers etc.
- **Low motivational level:** Based on our primary survey, we have found that many companies reported of low motivational levels in people. It was reported that people do not have the willingness to pick up work. In addition, there is lack of industrial discipline amongst its workforce. There is unwillingness to work at shop-floor. There is preference to work in service sector as compared to industrial sectors.
- **Lure for city life:** Based on stakeholder feedback, we found that youth, especially the educated youth have very high lure for city life and prefer to work only in the city centres such as Bangalore, Mysore, Hubli, etc., even if it requires permanent migration or even daily commuting of long hours. This results in unavailability of skilled workforce within their own districts.

2.5. Incremental manpower requirements

Based on the diagnostics above and our discussions with the key stakeholders in the district, we have identified sectors which will be the development and employment growth engines in the districts in the next five years and will have skill training requirements. We have forecasted both the demand and

supply side numbers for 2012 to 2022. We have forecasted the numbers for 20 high growth sectors identified by NSDC. In addition, we have identified mining, which exists in Karnataka.

2.5.1. Demand side numbers

Based on our forecasts, we estimate that between 2012 and 2022, an incremental demand (cumulative for ten years) for 8.47 million people will be generated in Karnataka. Maximum demand will be generated from sectors such as tourism, travel and hospitality; agriculture and allied (mainly allied such as horticulture, fishery, animal husbandry, poultry and sericulture); building, construction and real estate; IT & ITES, transportation, logistics, warehousing and packaging; healthcare and education services.

In the next ten years, maximum demand is expected to be for the semi-skilled workers at 43 per cent of the total incremental demand. This is expected to follow by minimally skilled workers at 27 per cent, skilled workers at 25 per cent and highly skilled workers at the remaining five per cent.

District wise demand numbers are available in the respective district profiles.

Table 9: Incremental demand in Karnataka, 2012 to 2022

Sectors	Incremental employment, 2012-22	Minimally skilled	Semi-skilled	Skilled	Highly skilled
Agriculture and allied	1,618,503	1,347,995	201,480	36,658	32,370
Auto and Auto component	58,298	5,830	37,893	11,660	2,915
BFSI	269,636	-	161,782	80,891	26,964
Building, Construction industry and Real Estate	1,364,835	409,450	682,417	204,725	68,242
Chemicals & Pharmaceuticals	9,634	1,927	2,890	2,890	1,927
Construction Materials and Building Hardware	95,760	9,576	62,244	19,152	4,788
Education and Skill Development	379,100	-	-	341,190	37,910
Electronics and IT hardware	15,535	1,554	7,768	5,437	777
Food Processing	41,417	12,425	12,425	12,425	4,142
Furniture and Furnishings	22,125	8,850	8,850	3,319	1,106
Healthcare Services	619,975	-	61,998	433,983	123,995
IT & ITES	1,430,938	-	715,469	643,922	71,547
Media and Entertainment	68,052	13,610	40,831	10,208	3,403
Organised Retail	234,536	23,454	164,175	35,180	11,727
Textile and Clothing	149,250	29,850	89,550	22,387	7,462

Sectors	Incremental employment, 2012-22	Minimally skilled	Semi-skilled	Skilled	Highly skilled
Transportation, Logistics, Warehousing and Packaging	639,702	127,940	371,027	127,940	12,794
Tourism, Travel, Hospitality & Trade	1,356,186	271,237	922,206	135,619	27,124
Unorganised	90,129	18,026	52,275	18,026	1,803
Mining	12,523	2,505	7,514	1,252	1,252
Total	**8,476,134**	**2,284,228**	**3,602,795**	**2,146,865**	**442,246**

Source: IMaCS Analysis

Note: Current employment numbers for different sectors sourced from sources such as ASI, NSSO, CSO, Census 2001 and 2011, Fifth Economic Census, RBI, IRDA, MHRD, Department of Education, etc. Wherever numbers were not available from Government sources, we relied on industry interactions and our analysis.

** Only includes malls in select cities in Karnataka. The number is expected to go up if departmental stores, supermarkets and hypermarkets are also included.*

^ Under unorganized sector, we have included sericulture, handloom, handicrafts, domestic workers and beauticians, as illustrative sectors. Gems and jewellery and leather and leather products, which is also a high growth sector identified by NSDC do not have a significant presence in Karnataka and are thus not included in the above analysis.

2.5.2. Supply side numbers

As of 2011, Karnataka has a total population of 61.1 million persons. Of this, labour force is estimated at 27.7 million persons. The current stock of labour force can be distributed into different skill levels, based on their educational attainment. We have estimated that 85.6 per cent of the labour force in the State is either unskilled or minimally skilled. About 6.5 per cent of the labour force is semi-skilled, 4.3 per cent is skilled and the remaining 3.6 per cent is highly skilled labour force.

Each year, people from different educational institutions join the workforce at different skill levels. We have estimated that between 2012 and 2022, about 8.16 million persons will join the workforce in Karnataka. Of these, about 43 per cent will be minimally skilled, 40 per cent will be semi-skilled, 17 per cent will be skilled and the remaining about one per cent will be highly skilled.

District wise supply numbers are available in the respective district profiles.

Table 10: Incremental supply in Karnataka, 2012 to 2022

Skill levels	Incremental supply, 2012-22
Minimally skilled	34,60,211
Semi-skilled	32,18,299
Skilled	14,35,307
Highly skilled	54,035
Total	**81,67,851**

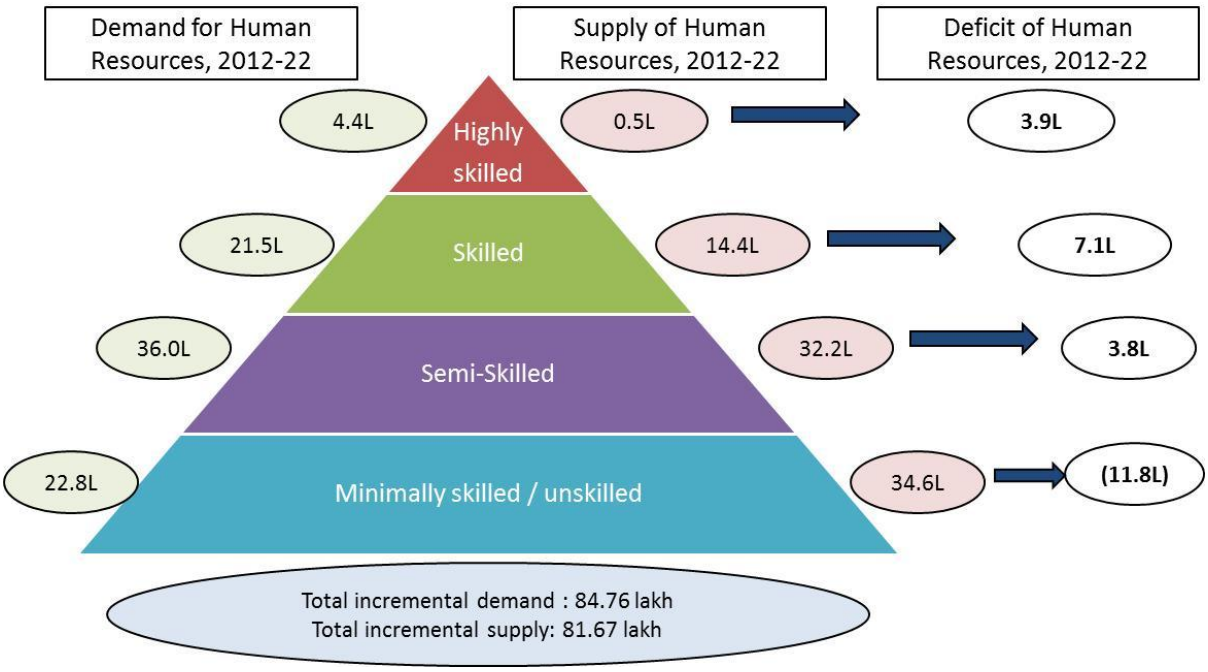
Source: IMaCS Analysis

2.5.3. Demand-supply gap

As discussed above, we have estimated that between 2012 and 2022, Karnataka is likely to have an incremental demand for 8.47 million persons and incremental supply of 8.16 million persons. This leads to a supply gap of 0.31 million persons. However, based on our industry interactions we have found that at least 20-30 per cent of the workforce joining from the educational institutions is unemployable. Accounting for this, we get a supply gap of 1.9 million to 2.7 million persons.

District wise demand supply gap numbers are available in the respective district profiles.

Figure 10: Demand-supply gap in Karnataka, 2012 to 2022



Source: IMaCS Analysis

2.6. Sector mapping

We have mapped high growth sectors across all 30 districts of Karnataka. Sectors such as agriculture and allied, construction and real estate, healthcare, education and transportation exist in almost all districts as these are the base of economy. However, we have mapped those sectors which are intrinsic and unique to each district and are in the need of new skills or skill up-gradation. These are represented in the grid chart in the figure below.

Figure 11: District wise mapping of sectors

District	Agri & allied	Auto & Auto component	BFSI	Bldg. & Constr-uction	Chemicals & Pha-rma	Construc-tion Mats.	Education & Skill Dev	Electronics & IT hard-ware	Food Proce-ssing	Furni-ture	Health-care	IT/ ITES	Organ-ised Retail	Textile & Cloth-ing	Transport & logist-ics	Tourism & Hospitality	Unorga-nised	Min-ing
Bagalkot	■													■		■	■	
Bangalore rural	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	
Bangalore urban		■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	
Belgaum	■	■							■					■		■		
Bellary	■					■								■		■		■
Bidar	■															■	■	
Bijapur	■								■							■		
Chamarajanagara	■															■		■
Chikkaballapura	■													■				
Chikkamangalore	■								■							■		
Chitradurga	■					■			■					■				
Dakshina kannada			■	■			■		■		■	■	■		■	■	■	
Davanagere	■								■									
Dharwad	■	■					■									■		
Gadag	■													■				
Gulbarga & Yadgir	■					■			■					■			■	■
Hassan	■								■					■				
Haveri	■			■					■					■				
Kodagu	■								■							■		
Kolar	■	■							■					■				
Koppal	■					■			■							■		
Mandya	■								■					■		■		

District	Agri & allied	Auto & Auto comp onent	BFSI	Bldg. & Constr - uction	Chem icals & Pha- rma	Const ruc- tion Mats.	Educa tion & Skill Dev	Electr onics & IT hard- ware	Food Proce -ssing	Furni -ture	Health -care	IT/ ITES	Organ -ised Retail	Textil e & Cloth- ing	Trans port & logist- ics	Touris m & Hospi tality	Unorg a- nised	Min- ing
Mysore	■	■	■	■	■		■		■		■	■	■	■		■	■	
Raichur	■								■									
Ramanagar a	■	■							■					■				
Shimoga	■	■														■		
Tumkur	■													■				■
Udupi	■						■		■							■		
Uttara kannada	■								■							■		

Source: IMaCS Analysis

Note: We have mapped only those sectors for each of the districts where new skills or skill up-gradation is required. Over and above these, there may be other sectors which will lead high employment but might not require skill interventions.

2.7. Recommendations

The recommendations for the State focus on four key stakeholders:

1) Government
2) Industry
3) Private training institutes, and
4) NSDC

Given below is a brief description of what kind of roles has been envisaged for all four of them.

Entity	Role description
Government	▪ Various Government Departments (both at the State and district level) can play a key role in overall growth and development of the State / districts. They can even play the role of a facilitator for private intervention. ▪ Many training programmes are currently run by the Government Departments as well. The Government can continue to strengthen those and add more training programmes in its role as a training / skill provider.
Industry	▪ During the course of our study, we have travelled extensively to all districts of Karnataka. We have identified opportunities where industry participation can lead to growth and development of the districts and the State.
Private training institutes	▪ Based on the identified sectors in each of the districts, we have identified opportunities for private training providers. ▪ The opportunities for private training providers are mainly those which are feasible and where trainees have a propensity / willingness to pay for training.
NSDC	▪ NSDC can play an overarching role in skill development in the State and its various regions. It can play the role of a facilitator for private training as well as for Government training programmes. ▪ NSDC can also promote training programmes at the regional level.

While detailed recommendations for each of the districts (for their relevant sectors) are given in the respective district profiles, a broad overview is presented here. Recommendations for those sectors are given here which require State level or regional level interventions. Other sectors, which do not have regional connotations, are covered in the district profiles only.

2.7.1. Agriculture and allied

As of 2011-12, agriculture contributes to 13 per cent of the total GSDP in Karnataka. However, it provides employment to about 55 per cent of the total workforce. Allied activities such as horticulture, fishery, sericulture, animal husbandry, poultry and dairy are significant sources of income for the people. About 10 districts still derive over 30 per cent of their income from agriculture and allied activities. The share is as high as 41 per cent in case of Chamarajanagar district.

Figure 12: Districts with heavy dependence on agriculture and allied activities

Note: The circled districts have agriculture's contribution to their GSDP of 30 per cent and above. Chickballapur is not on the map, as it was later carved out of Bangalore Rural district. Share of agriculture in Chickballapur is also more than 30 per cent.

Our recommendations for agriculture and allied activities have the following two key themes:

- Turning around agriculture into a sustainable source of income, and
- Promotion of allied activities in rural areas for generating additional income

- **Government**

Given that majority of the workforce in the State is still concentrated in agriculture and allied activities, the sector deserves special attention. The Government of Karnataka is already taking steps in this direction. The State has set up education and training infrastructure in this domain in various districts. Some of the key institutes in this domain in the State include the following:

- University of Agricultural Sciences, Bangalore
- University of Agricultural Sciences, Dharwad
- University of Agricultural Sciences, Shimoga
- University of Agricultural Sciences, Raichur
- University of Horticultural Sciences, Bagalkot
- Horticulture college, Kolar
- Indian Institute of Horticulture Research, Bangalore
- College of Agriculture, Gulbarga
- Agricultural college, Hanumanahatti, Haveri

These colleges and universities are imparting training in bachelor's, masters and doctoral degrees as well as diploma courses to students who can further act as extension officers in villages. According to Economic Survey of Karnataka, currently the turnaround of these colleges is around 1,000 undergraduate students per year, of which 80 per cent pursue higher studies, effectively leaving 200 in the job market. On the other hand, the demand is for over 7,600 such graduates. Thus, the Government has taken steps to ramp up the capacity of these institutions. However, given the demand more such colleges can be considered.

For training of cultivators and agricultural labourers, the Government infrastructure mainly includes the District Agricultural Training Institutes and various training programs run by various Government Departments such as:

- District Rural Development Agency
- Department of Horticulture
- Department of Fisheries

- Department of Animal Husbandry etc.

From our field visits, we have found out that while the training programmes held by these Departments are effective, the coverage of such programmes is low. There is a need to increase the scope and coverage of these programmes to bring more and more farmers in their ambit. However, more number of faculty will also be needed to achieve the same. For that, the Departments can collaborate with NSDC. The latter can provide assistance through its train the trainers programme.

On the infrastructure front, we found out that Karnataka has many dry districts which are facing acute water shortage for people in rural areas, due to which people are turning away from agriculture. Thus, immediate steps need to be taken to implement irrigation schemes which have been on the back burner in some of the districts such as Chickballapur and Chamarajanagar.

In addition to focusing on agriculture, greater thrust needs to be provided to allied activities as well. These mainly include horticulture, fisheries, sericulture, plantations, animal husbandry, poultry, and dairy. In several villages, programmes are run by DRDA to train people in allied activities. Some of the activities covered include:

- Bee-keeping
- Honey making / rearing
- Cow rearing
- Poutry
- Buffalo breeding
- Tailoring
- Banjara kasuti embroidery
- Soap making
- Candle making
- Carpet making
- Seasal fibre making
- Fancy pottery
- Agarbatti making, etc.

However, the scope of the programmes is limited and it needs to include more and more people in their ambit. More importantly, once training is provided, marketing avenues also need to be created. People in rural areas will be incentivized to participate in these training programmes and make full use of them, only if they have assured employment or a market for the products they manufacture. Thus, marketing arrangements need to be facilitated, which can be enabled by tying up with private players.

The Department of Rural Development and Panchayati Raj can consider tying up with private players and entering into a PPP for working out such an arrangement. The Government can provide subisdised funding to such players and the players in return can provide training and assure marketing arrangements for the rural workers.

The products can then be based on market demand (which will be assessed by the private player) and the products will also be directly sold by the same entrepreneur. This will enable ready market for these people and ensure safe income stream.

Wherever such PPP arrangements are not possible, it is important to provide seed capital to the budding entrepreneurs, to start their ventures. Such steps can be implemented with focus on existing SHGs in the districts and by involvement of local NGOs and co-operative societies.

- **Industry**

In the section above, we talked about how Government Departments can enter into PPPs with private industry players for facilitating training and marketing for the artisans in the rural areas. This opportunity can be tapped by the industry. In addition, many districts in Karnataka have rich potential for development of food processing industries based on their rich produce. This will be discussed in detail in the section on food processing.

- **Private training providers**

Given the economic background of most of the people in the rural areas, we do not see a lot of opportunities for private training providers in the agriculture sector. However, private training providers can tap the opportunities which are presented by the allied sectors such as horticulture, floriculture, honey making and even fisheries. Currently, some of the training programmes in this area are already run by the corporates. For instance, Nestle is running training programmes for farmers in coffee

plantations in Kodagu. Similar other initiatives can be taken up by private training providers. However, they would best be in collaboration with industry. The latter has the incentive to procure the good quality produce, which can go into food processing units.

- **NSDC**

NSDC is currently under the process of incorporating a sector skill council (SSC) for agriculture. From within Karnataka, Indian Institute of Plantation Management (IIPM), Bangalore will be a member of the SSC, once it is incorporated. Some of the areas which the SSC can contribute to in Karnataka are the following:

- Developing skill development plans for coffee, spices (such as cardamom and pepper), flowers (mainly the exotic varieties) and coconut products etc.
- Developing skill competency standards for sericulture to help the sector face the tough competition from Chinese silk
- Assisting the Government Departments in implementing their training programmes in the rural areas
- Assisting the Government Departments in arranging industry partnership
- Helping the Government Departments in training their trainers in the sector

2.7.2. Auto and auto components

Karnataka is home to some of the key auto and auto components manufacturing companies. In addition, the State is home to key foundry clusters who are mainly manufacturing for the auto sector only. Most of the auto and auto components activity is concentrated in Ramanagara, Bangalore Urban, Bangalore Rural, Mysore, Dharwad, Belgaum (foundry) and Shimoga (foundry).

Figure 13: Key auto hubs in Karnataka

Note: The map does not show Ramanagara district, as it was later carved out of Bangalore Rural district. Ramanagara is a key auto hub in Karnataka.

Recommendations for different stakeholders are as follows:

- **Government**

Department of Employment and Training and Department of Technical Training play key roles in supplying manpower for the auto and auto components industry through their ITIs and engineering colleges. Based on our industry interactions, we have found the following key points:

- It is believed that a huge chunk of engineers coming out of engineering colleges (not just Government colleges, but also private and aided engineering colleges) are unemployable and lack requisite knowledge for working in the industry. Most of the graduates are reported to have only theoretical knowledge and have to be trained from scratch for working in the industry.
- The same is the opinion for the ITI pass-outs. It is believed that the syallabus in the ITIs needs revision and so do the equipment in ITI laboratories.

Thus, our recommendations are focused on tacking the above issues:

- ITIs need to revise their syllabus based on industry interactions.

- There is an urgent need to upgrade the machinery and equipment in the ITIs. However, given the kind of funding it requires, we recommend that this should be implemented in PPP. For instance, currently the Government ITI in Ramanagara district is being up-graded in PPP with Toyota. The up-gradation benefits both the students and the industry. While the students get better equipment and learning and almost get an assured employment with Toyota, the company (going forward) might not need to train the new recruits from scratch. More such models can be experimented in other parts of the State. However, strict monitoring of such models is required, as in some cases (other districts), it has been reported that the industrial players have not been very active in such PPP models.
- There are certain courses which are in demand by the auto industry and people with those skills are not available in adequate numbers. Thus, such trades can be introduced in districts which have high presence of auto and auto component companies. These trades include:
    - Power electronics and automotive
    - Painter, and
    - MMV
- There is also a need to increase industry exposure for students even in engineering colleges. Industry visits can be organised for students during the tenure of their course. Also, guest speakers from industry can be oraganised for special courses to abreast the students on the latest technologies and know-how of the industry.
- There is also a need for establishment of a LMIS for ITI students so that the employment and career growth can be tracked

➢ **Industry**

Currently, most of the auto and auto components manufacturing units have their own in-house training programmes for training the new hires. Training programmes are run by industrial associations as well. However, there is a need on the part of the industry to collaborate more closely with the training institutes – ITIs / engineering colleges in both Government and private education institutions. Industry needs to take steps to strengthen these ties.

For foundry sector specifically, one of the key concerns today is comprehensive safety of the workers. The players in the sector need to offer safety procedures training to the employees.

- **Private training providers**

Recommendations for private training institutes – Industrial Training Centres (ITCs) and engineering colleges are same as those made for such Government training institutes. Also, majority of the training programmes can be conducted in partnership with the auto companies itself. This will ensure that the market requirements will be reflected in the courses.

There is also demand for advanced courses in the sector in areas such as the following:

- CAD/CAM
- CNC machining
- Tool Design, Jigs and Fixture design
- Quality inspection
- Composite materials/special materials handling and machining
- Failure Mode Evaluation Analysis
- Mechanic Motor Vehicle course
- Machine Tool Maintenance
- Welding techniques
- Safety engineering
- JIT, Kanban, 5S and other quality management techniques
- Spares management

These are some of the areas where we anticipate opportunity for private training providers.

- **NSDC**

NSDC is already active in the space of auto and auto components training and the industry in Karnataka can gain from NSDC's experience. NSDC has already incorporated the Automotive Skills Development Council (ASDC), which is designing high standard course content for selected modules. We see an opportunity for ASDC in Karnataka. The council can particularly focus on the following:

- Helping the training providers in setting competency standards
- Providing accreditation and certification to the training providers. The same will help them gain credibility
- From our industry interactions, we have found that there is a lack of quality trainers in this area, who are abreast of the latest technology available in the market. Thus, NSDC can play a vital role here through its train the trainers programme.

NSDC is also in the process of setting up a foundry SSC in association with Indian Institute of Foundry Men. It can help foundries in Karnataka with the following:

- Set standards of quality in the skills required
- Educate employers on best practices of workforce development and management, and
- Improve the image of the foundry industry to make it an attractive place for workers

2.7.3. Banking, financial services and insurance

BFSI sector is a well-established sector in Karnataka. As the economies of all the districts grown, the penetration of financial services will also improve leading to higher job growth in the sector. In fact, we estimate that in the next five years, BFSI will be one of the key employment generators in the State. Most of these jobs will be concentrated in key cities such as Bengaluru, Mysore, Mangalore, Hubli-Dharwad and Belgaum. In addition, opportunities will come up in almost all other districts.

The training requirements in the sector pertain to the fact that most of the jobs in BFSI are customer facing and require quality skills for the same. We do not envisage heavy involvement of Government in holding training programmes in this area, as most of the training is provided on the job and private trainers have a well-established network for the same. However, Government can continue to play the supervisory role and ensure that RBI guidelines and regulations are adhered to by the industry.

- **Industry and private training providers**

Currently, most of the financial institutions have their own internal training teams, which take care of the organisation learning and development aspects. Going forward, as the requirement for training more and more people comes up, we recommend that the financial institutions can collaborate with private training providers (increased collaboration as compared to current levels) to meet the training needs of their manpower. The training providers in turn can collaborate with NSDC, especially for accreditation and certification. The same will lead to improved credibility for them.

Also, currently, many private training providers provide short term courses (one to six months) as well as six to 24 months certification courses. However, concerns have been raised on the quality of training provided. Thus, quality needs to come up to the par.

➢ **NSDC**

NSDC is currently in the process of incorporating the BFSI Sector Skill Council of India. As mentioned above, in Karnataka, the SSC can assist the private training providers and help those set standards in training. Key interventions can focus on:

- Training the trainers
- Assisting in formulating the syllabus which matches the industry norms and is of high quality
- Provide certification and accreditation for training service providers

2.7.4. Building, construction and real estate

Building, construction and real estate is one of the biggest sectors in Karnataka and is likely to generate employment for a huge number of people. Most of the employment is likely to be for minimally skilled and skilled workers. Currently, the sector sources most of its manpower from either Northern parts of Karnataka or from other States such as Bihar and Tamil Nadu.

Based on our industry interactions, we have found that people in Karnataka do not have a preference for blue collared jobs, thus creating a shortage of people in the construction sector. There is high demand for people with certain skills. However, the workforce does not have the inclination to work in these. Some of these include:

- Mason
- Welder
- Plumber
- Electrician
- Painter
- Machine operator, etc.

The common belief is that these are felt to be inferior jobs and people are not interested in taking these up. Thus, leaving a shortfall in this sector. Thus, to address the issue, we have the following recommendations:

➢ **Government**

- There is tremendous opportunity for training in ITIs the people with trades such as welding, masonry, electrical, plumbing etc. For this, the Department of Employment and Training can

expand the seating capacity of such trades / increase the number of shifts for trades or set up courses for these trades.

- However, the above step will only be effective if people will be willing to enrol themselves in such trades. For that, the Government needs to take steps to bring about attitudinal changes in the youth. Some of the key steps which can be taken for the same are:
    - Holding awareness campaigns in the villages about the opportunities which are available in the sector.
    - Taking steps to attach prestige to the profession. There has to be focus on softer aspects of the job such as providing certificates to the trained workers, providing uniforms, ID cards, employer branded tool kits etc. which help in increasing the prestige attached to the job by the worker in effectively attracting more people to the sector.
- In lines with the National Academy of Construction in Hyderabad, the Government of Karnataka can consider setting up a construction academy with its headquarter in Bengaluru. A hub and spoke model can be worked out with hub (Academy in Bengaluru) and spokes in districts such as Belgaum, Mysore, Dakshin Kannada and Gulbarga. The spokes can act as regional centres for the respective regions. The Academy can act as a parent body to train and employ eligible candidates in various trades of civil construction.

Figure 14: Hub and spoke model for the proposed construction academy

Source: IMaCS Analysis

- **Industry**

As discussed earlier, youth does not attach much prestige to the construction work, leading to their unwillingness to join the sector. Thus, there is a need on the part of the industry to attach more value to this profession. Some of the steps which can be taken are to give uniforms and ID cards to the workers.

The industry can also take steps to collaborate with ITIs and ITCs for assuring employment to people who pass out from trades such as masonry, welding, painting etc. Assured employment will ensure that youth join such trades in bigger numbers.

- **Private training providers**

As discussed earlier, there is high demand for trades such as mason, welder, painter, electrician etc. Thus, these trade present opportunities for private training providers for setting up training centres. The private players can also follow the similar hub and spoke model as has been suggested for the Government. The private players can also tap the opportunity to train skilled and highly skilled workers

in this category, which mainly included project managers, supervisors, site inspectors etc., as these too are in high demand.

For getting good quality trainers, course content and accreditation, the training providers can collaborate with NSDC.

- **NSDC**

NSDC can assist with the following in the construction sector in the State:

- Setting up of the construction academy. The same can be set up in a PPP.
- Setting up of training modules and course curriculum to be followed on a standardised basis by the industry.
- Training the trainers
- Helping with accreditation and certification of eligible courses and institutes, which can uphold quality.

2.7.5. Food processing

Karnataka's many districts are rich in agriculture and horticulture produce, presenting a big opportunity for setting up several food processing units. At present, many big food processing brands such as Nestle, Bru, and Britannia are already in existence in the State. However, the manpower requirements with these big companies are limited as most of their processes are mechanised in interest of hygiene, quality and speed. However, there are several other opportunities which are available at the village level where food processing can provide job opportunities to many.

Every year, many crops in the State get perished due to lack of storage, transportation and processing facilities. For instance, in Chickballapur district of Karnataka, each year there is a glut of tomatoes at the beginning of year, which get wasted and perish, as the district does not have facilities and know-how for processing of tomatoes. Key crops grown in each districts are depicted in the map below.

Figure 15: Agriculture map of Karnataka

Source: www.mapsofindia.com

- **Government**

The Department of Agriculture in Karnataka has been actively focusing on the food processing industry. Some of the key steps taken by the State Government for promotion of food processing sector in 2011-12 are given below:

- Holding of Global Agribusiness and Food Processing Summit in December 2011 in Bengaluru. The objective of the meet was to bring in investments for the inclusive growth of agriculture & allied sectors to create strong linkage between farming community, logistics, processing and end market. A total of Rs. 7,883 crore worth of MoUs were signed for the food processing sector.
- According administrative approval for establishing Rice Technology Park for processing, grading, packing, marketing and export of rice in Gangavathi taluk of Koppal district.
- Providing funds for establishment of Coconut Processing Unit at Tiptur taluk of Tumkur district.

- Establishment of Neera Processing Demonstration Centre at Bantawal taluk of Dakshin Kannada district.
- Implementing a programme called 'Processing and value addition for horticulture crops'. It includes activities related to grape dehydration, red chilli powdering, vanilla processing, wine making, and desiccated coconut powder units.
- Karnataka Grape Wine Board has been set up for implementing programmes under the Wine Policy.
- Mango Development Board has been set up to promote the production, processing and export of mangoes in the State.

The Government needs to actively pursue the steps it is already taking. It needs to closely monitor the investments that were committed during the global summit and ensure that they materialise. More importantly, the Government needs to place more thrust on training in food processing sector. At present, some training is being provided through some of the demonstration and training centres in some of the districts. However, coverage of those schemes is small in terms of talukas covered and the number of beneficiaries. Thus, the coverage of programmes needs to be expanded.

However, considering the high budget requirements for the same, the Government needs to actively collaborate with the private investors and private training providers. It can adopt the policy of encouraging PPPs in the sector, wherein Government can subsidise the training providers, who are willing to provide such trainings in the rural areas. The Government can also collaborate with NSDC for setting skilling standards in the sector and also for assistance in accreditation and certification of courses.

- **Industry**

As mentioned earlier, Karnataka already has presence of some of the big food processing companies. However, the scope for setting up more such units is immense. Some of the key opportunities in food processing are given in the table below.

Table 11: Opportunities in food processing sector in Karnataka - illustrative

Vegetables and fruit processing	Grains processing, bakery and confectionery	Spice products	Aqua and marine products	Animal, dairy and poultry products
Fruit pulps and juices	Modern rice mills	Spice mixes	Processing of shrimp, mud crab, Indian mackerel, sear fish.	Value added milk products – milk and cream in powder, packaged milk, butter, ghee, ready-to-drink milk products, butter milk, milk for babies, skimmed milk powder, other milk powder
Soups and sauces	Breakfast cereals	Spice blends	Processing of sea crab, white prawn, flower prawn, brown shrimp, king prawn, marine shrimp	Pasteurized milk and UHT milk
Juice, nectar and still drinks	Wheat flour and dhal mills	Dehydrated spice and Frozen dried spice	Processing of cuttle fish, black tip shark, deep sea shrimp, sand lobster, spiny lobster, deep sea lobster, squid	Cheese - semi hard, cottage, fresh &hard
Tomato paste	Whole bran wheat flour, fortified wheat flour, rice flour, maize corn flour and other cereal flour	Spice in brine	Processing of octopus, green mussel, clam, oyster, pearl oyster etc.	Malted milk food
Diced / pulp production	Starch material	Spice oil and Oleoresins	Minced fish products – fish sausage, cakes, cutlets, pastes, surimi, texturised products, dry fish	Low cholesterol ghee fortified with herbs
Canned fruits and vegetables	Baked products – yeast bread, ginger bread	Essential oils	Medicinal products – spirullina, cholorella, algae, scenedesmus, natural calcium from shells, fish oils	Ice cream – Moulded ice cream, filled ice cream, extruded ice cream, low

Vegetables and fruit processing	Grains processing, bakery and confectionery	Spice products	Aqua and marine products	Animal, dairy and poultry products
				temperature ice cream
Jams and squashes	Shredded wheat biscuits, puffed wheat and puffed rice, flaked wheat, flaked rice	Herbal extractions, Herbal cosmetics and Herbal medicines	Frozen marine products and IQF marine products	Edible poultry meats – fresh, frozen and Others
Pickles and chutney	Chocolates	Medicinal extractions from flowers, dyes, pigments, deodorants, scents, dried flowers, etc.	Canned shrimps and prawns	Poultry products produced from birds fed on organically produced feed
Ready to eat items	Corn processing	Aromatics	Lobster and cuttle fish	Egg products – Dried / cooked / frozen / Preserved
Preserved and processed organic fruits	Soy and dairy alternatives	Tannin	Squid tubes	Animal casing – cattle, sheep, casings of other animals, guts for animal casing, bladders and stomach of animals
Desserts and fruits preparations	Jaggery – cane, palmyra, raw cane	Pectin	Canned fish and Dried fish	Preserved meat
Preserved and processed mushrooms	Groundnuts processing	Vegetable oil	Dried shark fins, cuttle fish bones and fish maws	Meat extracts and meat juices
Cocoa products	Stuffed paste - cooked and uncooked		Processed fish maws	Sheep / goat meat – fresh/frozen
Confectionery	Chewing gum		Prawn flakes	Sausages and canned meat
			Chitin	Homogenized meat preparations
			Sea cucumber	Carcass of lamb and

Vegetables and fruit processing	Grains processing, bakery and confectionery	Spice products	Aqua and marine products	Animal, dairy and poultry products
			Dried squid Jelly fish Dried tuna masi Semi refined and refined products	sheep – fresh / Frozen Meat of sheep with bone – fresh / frozen Boneless meat of sheep – fresh / frozen

Source: 'Sector profile – Horticulture; Karnataka Global Agribusiness & Food Processing Summit' 11

- **Private training providers**

Given the immense opportunities which the food processing sector presents in the State, there are ample opportunities for training the manpower which will work in the sector. As the sector expands and investments committed during the Global Summit (held in 2011) materialise, demand for more professionals with food processing know how will come up. These opportunities can best be tapped in collaboration with the food processing companies. Areas where opportunities will be present are given in the table in section above.

- **NSDC**

NSDC can collaborate with the Department of Agriculture and Department of Horticulture in several districts for creating training capacity in the food processing space. It can also contribute through the Sector Skills Council, which is being set up for the food processing sector. Through the SSC, it can mainly contribute to the following in Karnataka:

- Developing skill competency standards and qualifications
- Standardization of affiliation and accreditation process
- Participation in affiliation, accreditation, standardization
- Plan and execute training of trainers

2.7.6. IT & ITES

Information technology and related services is one of the top most sectors in Karnataka, in terms of both income and employment. The sector is mainly concentrated in Bengaluru, Mysore and Mangalore. However, it is slowly expanding to other cities as well. The sector is also one of the first preferences of the youth in the State. There is prestige attached with the profession as well as the opportunities for working with MNCs and even going and working abroad.

The State has seen mushrooming of many engineering colleges and even private training centres imparting skills in information technology (mainly computers). The mushrooming of such institutes has even led to under-utilisation of their seating capacity.

The many existing institutes have sufficient capacity to even meet the manpower requirements for the next few years. However, based on our industry interactions, following is some of the key feedback we received about manpower joining the IT / ITES industry:

- Only theoretical knowledge and less know how of practical application
- Poor soft skills, mainly communication and English speaking
- Lack of customer handling skills
- Lack of domain knowledge
- Poor understanding of latest technology

We have the following recommendations for different stakeholders:

- **Government**

The Department of Employment and Training and Directorate of Technical Education provide certificate and diploma courses in IT / ITES in the State. The two departments need to focus on the following aspects:

- Include modules on English speaking skills
- Include modules on communication skills
- Include modules on soft skills
- Invite guest lecturers from the industry to update the students on latest technology
- Consider upgrading the IT labs in ITIs and polytechnics in PPP
- Closely monitor the quality of faculty

- Provide further training to the trainers at adequate intervals

➢ **Industry and private training providers**

Presently, most of the companies in the IT / ITES sector provide on the job training to all of their fresh hires. Infosys, for instance, runs its Global Education Centre in Mysore, which is one of the biggest corporate training programme for new hires. The institute has trained 100,000 engineering graduates over the last decade.

Such training programmes held by the industry are expected to continue. However, industry can take steps to collaborate with training providers and outsourcing their training needs. In addition, the industry can actively participate with the Department of Employment and Training and Directorate of Technical Education for readying the manpower which can later be absorbed in the industry. They can assist in the form of sending guest lecturers to the Government institutes, collaborating with the Government in updating their IT labs and also providing employment assurance to the students. This collaboration needs to be taken up at strengthened.

Industry has also started taking steps towards building LMIS of IT professionals. The same is being achieved through NASSCOM's initiative – National Skills Registry (NSR) - a national database of registered and verified knowledge workers in the industry built in partnership with the industry. NSR aims to build a robust and credible information repository on the knowledge professionals in the sector. The objective is to have credible data on current and prospective employees in the industry, thus eliminating issues of potential frauds and avoid repetitive background checks. This initiative needs to be strengthened further and can even be made mandatory for all companies. That can result in a comprehensive LMIS system for the IT industry in the country.

2.7.7. Organised retail

With the coming up of malls and super markets in the State and possible opening up of FDI in retail, organised retail is expected to create many job opportunities for the workforce. Oganised retail mainly consists of malls, supermarkets, hypermarkets, and departmental stores (does not include small kirana shops / mom and shop stores). The sector is expected to generate thousands of jobs in the next five

years. However, the institute which can offer training to manpower for this sector are not in plenty. Hence, presenting an opportunity for training providers.

- **Government**

Specialised institutes providing training in retail are not in plenty. Realising the importance of skilled manpower in retail trade, the Karnataka Vocational Training and Skill Development Corporation (KVTSDC) has launched first PPP based retail training centre at Government ITI in Peenya, Bangalore along with Bharati Wall Mart. However, going forward (depending on the success of this model), many more institutes can be set up to meet the increased manpower requirement in the sector.

The Government can even consider opening of a bigger institute dedicated to retail trade in partnership with retail traders. The institute can be opened in a hub and spoke model, with the hub being in Bengaluru and spokes in cities such as Mysore, Mangalore and Belgaum. The academy can work towards providing skilled manpower in the State. The regional off-shoots can work on meeting the manpower requirements in the respective regions.

The PPP model which has been tried in Government ITI in Peenya can also be implemented in Government ITIs in Mysore and Mangalore.

Figure 16: Hub and spoke model for the proposed retail academy

- **Industry**

As mentioned above in the recommendations for the Government players, there is a need on the part of the industry to collaborate with Government in its initiatives to promote retail training centres. While most of the retail players provide on the job training, they should be encouraging for joining hands with the Government.

- **Private training providers**

As mentioned above, the sector is likely to provide immense job opportunities going forward and will thus demand skilled manpower. To meet this, Government training centres alone will not be able to generate sufficient numbers of skilled people. Thus, there is an opportunity for private players to set up dedicated training institutes in the retail space. They can do so in collaboration with industry and even NSDC. The latter can render them credibility through accreditation and certification.

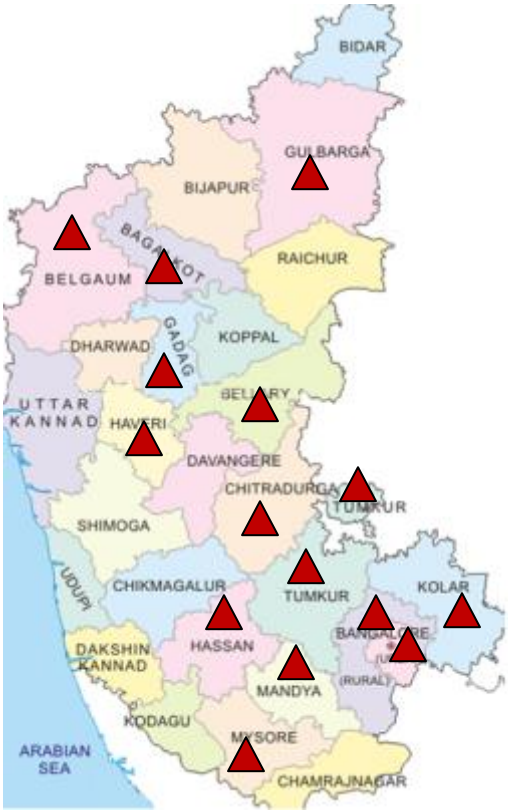
- **NSDC**

NSDC can assist the State Government in setting up of a retail academy in Bengaluru. It can further help the private training providers in accreditation and certification.

2.7.8. Textile and clothing

Textiles and clothing (especially garments) is one of the biggest sectors in Karnataka, with presence of several top garment brands. Most of the players have a dominant presence in Bengaluru. However, due to rising real estate and labour prices in Bengaluru, many players have started moving out to districts closer to Bengaluru. These include Tumkur, Chickballapur, Mandya, Mysore and Ramanagara. Many textile mills are also located in other parts of the State, as depicted in the figure below.

Figure 17: Key districts with textiles and clothing sector in Karnataka



Note: The map does not show Ramanagara and Chickballapur districts, as it was later carved out of Bangalore Rural district. The two districts also have presence of textiles and clothing industry.

- **Government**

Government Departments already have many existing training institutes for readying manpower in the textiles and clothing sector in Karnataka. Some of the key Government training institutes / programmes include:

- Apparel Training and Design Centre (ATDC): The centres are present in many districts and mainly provide training in tailoring and related courses.
- Handloom Weavers Training Centre: The centre is present in a few districts such as Bagalkot and Bangalore
- Power Loom Service Centre: The centres are available in a few places such as Bangalore Urban, Bangalore Rural, and Gadag

- Garment Training Institute: The same has been established in the Dodballapur Apparel Park by National Institute of Fashion Technology, Bangalore. The institute is receiving assistance from the Government of Karnataka.
- Cutting and tailoring programmes are also provided by ITIs in several districts.

However, based on our interactions with the stakeholders, we have found:

- The machinery used in the training institutions is out-dated.
- The quality of the faculty needs improvement.
- The seating capacity of the courses is very limited.
- Many students join these Government institutes, not for learning, but only for the certificate, as Government certification helps obtain jobs.

Thus, our key recommendations for the sector are:

- Up-gradation of existing Government training institutes (textiles and tailoring) in participation with the industry. The industrial players can bring in the latest machines, technology and training for the faculty, while the Government can provide its existing infrastructure in terms of land and building.
- The ITIs can offer modern courses in fashion design and technology. Close collaboration with NIFT Bangalore to achieve the same.
- Department of Employment and Training through 'Modular Employable Skills' (MES) under 'Skill Development Initiative Scheme' (SDIS) can place thrust on conducting courses on garment making.
- Establishment of model weaving set ups in a few districts such as Bangalore Rural and Bagalkot to train aspiring entrepreneurs and employees
- Promotion of cluster training programmes
- State Government promoted agencies such as Centre for Entrepreneurship Development of Karnataka (CEDOK) can involve in training people in textiles.
- There is also lack of colleges in the State offering courses in Textiles technology. Opening of such a college could be considered in either Bangalore and / or Mysore.

- **Industry and private training providers**

Most of the companies in the textiles sector that we interacted with have their own in-house training centres. They face skill gaps in new hires and thus have to conduct internal trainings. We recommend that the companies can open training institutes in collaboration with certified private training providers.

For setting up training centres, new land and building would not be required in many districts, as the infrastructure is already available with many Government textiles training institutes and also with many Government promoted NGOs. The textile / garment companies need to collaborate with these existing institutes for meeting their training requirements.

There can be association level interventions also, where in the textile units can together collaborate and initiate bigger level training institutes / academy from where they can all source their manpower requirements.

- **NSDC**

We envisage the following role for NSDC in textile and clothing sector in Karnataka:

- Assisting the State Government in formulating a database of all the existing training institutes in the textiles sector in Karnataka. Presently, there are many institutes run by Government, NGOs and private sector. All of these need to be brought under one umbrella and their database needs to be created and maintained. Such a database will help both the employers and employees.
- While there are many small scale training institutes in the districts, the State requires a few large scale colleges / institutes as well for taking up training and research in new textile technology. NSDC can collaborate with the Department of Textiles for creation of such an institute.

2.7.9. Tourism, travel, hospitality and trade

Travel, tourism and hospitality has the potential to become one of the biggest employment generation sectors in Karnataka. The sector's potential arises from its many heritage sites, cultural centres, beaches, hill stations etc. The potential is yet to be tapped fully. Several tourism spots in the State are still

untouched. However, the Department of Tourism is placing thrust on the development of infrastructure for the sector, which will lead to generation of lakhs of jobs over the next five years.

Figure 18: Tourism map of Karnataka

Source: www.mapsofindia.com

Given the job opportunities which the sector can present, there will be demand for skilled personnel. However, the current training infrastructure in the State is not sufficient to generate adequate numbers of skilled people. To meet the upcoming demand, both the Government and private sectors need to work in tandem.

- **Government**

The Department of Tourism is taking steps to promote tourism development in the State. Some of the key training initiatives taken by the Department include training tourist guides in most districts for SC and ST candidates. The Department is also involved in building infrastructure for the sector. Key initiatives include developing hotels and other amenities in a few districts under PPP. However, given the large number of jobs which are expected to be created in the sector and thus the likely demand for

skilled manpower in the State, there is a need to create significant training capacity and infrastructure. The district wise recommendations for each district are given in their respective profiles, however, the broad themes are given below:

- **Creation of infrastructure:** Presently, the tourism potential of the State is not completely tapped. Only a few prominent places such as Mysore, Bengaluru, Kodagu and Chickmagalur are known well by the tourists. However, the State has much more to offer and many tourist places which are completely untouched now. What is required to tap their true potential is the creation of adequate infrastructure in the State. Many tourist places are not reachable due to poor quality of roads, lack of transportation, amenities at the tourist spots and even basic accommodation. Thus, there is a dire need to create this infrastructure. This can be achieved by the Department of Tourism in collaboration with private players. Either PPP arrangements can be forged or incentives can be given to private players for development of such infrastructure.
- **Branding and awareness:** Other than the famous tourist spots in the State, there are many more which are yet to shine on the tourism map of Karnataka and this is mainly due to lack of awareness of those spots to tourists. Tourists are not aware about many tourist places just because they are not advertised well. There is a strong need to promote many tourism spots of the State by holding awareness campaigns and advertisement. Print and digital media needs to be utilised for that. More importantly, branding is the need of the hour. Branding creates strong recall value and attracts tourists to a place. Some of the places in India which have reaped benefits due to strong branding of tourism are Meghalaya, Sikkim, Madhya Pradesh and Gujarat. Similar brand image needs to be created for Karnataka tourism.
- **Promotional events:** Promotional events such as annual cultural fest, light show or musical show can be conducted at the historical attractions in many districts to attract the crowd and increase the number of tourists in the district. Presently, some of such initiatives conducted are the flower show at Lalbagh in Bengaluru and Bidar Utsav conducted at Bidar Fort. Events on similar lines need to be conducted for all districts. Themes can be chosen for each district and theme based annual events can be conducted. They can help pull tourists in large numbers. However, all of these events will only be successful if they are well publicized.
- **Training programmes:** Presently, one of the key training programmes held by the Department of Tourism is the training of tourist guides which is mainly held for the SC/ST students. There is a pressing need to increase the scope and coverage of the training programme. Not just more students need to be brought under the ambit of the training programme, many new training

programmes need to be started. These could include training programmes for tour operators, cab drivers and advanced courses for tourist guides. The Department also needs to promote institutes or colleges offering courses in hotel management, catering, housekeeping etc.

- **New activities:** The Department of Tourism needs to focus on theme based tourism and develop attractive packages for the tourists. These would mainly be based on the topography and key attractions of each of the districts. Some of these could include:
    - Wild life safaris
    - Tour of the temples
    - Wellness tourism (spas, massage centres etc.)
    - Nature trails into the valleys
    - Water-falls and Dams
    - Cultural tourism
    - Festival tourism, etc.

➢ **Industry and private training providers**

As mentioned above in the recommendations for the Government sector, there is a need for the Government to join hands with the private players to promote tourism in the State. The private players need to collaborate with the Department of Tourism in the segments which we have highlighted in the section above. In addition, some of the other initiatives which can be taken by the private sector are:

- Setting up of hotels, resorts and theme parks in the State
- Introducing formal taxi services in many districts. Presently, many of the places do not have dedicated taxi providers
- Tapping the opportunity in the eco-tourism and adventure sports domain. Develop adventure sport spots especially along the western ghat sections. Activities like gliding, parasailing, jet skiing, snorkling, etc can be offered to the tourist. These need private player aid to flourish and attract more tourists.
- Setting up of training institutes in areas such as:
    - Hospitality – housekeeping, gardening, catering, cooking, facility management, security guards
    - Travel operators / agents and tourist guides
    - Training for preparing experts in the area of adventure sports and eco-tourism

- Training for people in the wellness industry (spa, massage centres etc.) to replicate the successful model of Kerala wellness industry

➢ **NSDC**

NSDC can play a vital role in the development of skilled manpower in the tourism and hospitality sector in the State. It can collaborate with Department of Higher Education and Department of Tourism for starting of colleges, offering degrees and diplomas especially in the hospitality sector. NSDC can also collaborate with private institutes and assist them in setting up of training institutes in the sector. Some of the other steps which can be taken by NSDC here are:

- Establishing standard training programmes
- Improving the quality of training by including the industry in training curriculum
- Establish communication labs, language labs, and soft skill lab for skill augmentation
- Encouraging multi cuisine expertise through food fairs and competitions

NSDC can consider starting a sector skills council for the travel, tourism and hospitality sector.

Summary of recommendations

Sector	For Government	For Industry	For Private training providers	For NSDC
Agriculture and allied sector	▪ Setting up of agriculture colleges ▪ Increasing scope and coverage of programs run by different departments ▪ Collaboration with NSDC for training of faculty ▪ Focus in irrigation schemes ▪ Partnerships between DRDAs and private players	▪ Partnership with different State Government departments for providing market linkage to the people who are trained	▪ Opportunities available in allied activities such as horticulture, floriculture, honey making, fisheries etc.	▪ Focus through agriculture SSC on coffee, spices, flowers and coconut products etc. ▪ Silk competency standards for sericulture ▪ Assisting Government departments in industry integration and training
Auto and auto	▪ Revision of	▪ Continued focus	▪ Same as those	▪ ASDC to focus

Sector	For Government	For Industry	For Private training providers	For NSDC
components	technical syllabus based on industry feedback ▪ Upgradation of machinery and equipment in ITIs. Explore PPP for the same ▪ Introduction of new courses ▪ Increase industry exposure for students ▪ Establish LMIS for ITI students	on in-house training programs ▪ Close collaboration with training providers	made for Government training institutes	on helping the training providers , providing accreditation and certification ▪ Training the trainers ▪ Assist foundry sector through formation of foundry SSC
Banking, financial services and insurance	▪ Continue to play the supervisory role and ensure that RBI guidelines and regulations are adhered to	▪ To collaborate with private training providers	▪ To collaborate with industry and also with NSDC for accreditation and certification ▪ Focus on quality	▪ Training the trainers ▪ Assistance in formulation of syllabus ▪ Help in accreditation and certification
Building, construction and real estate	▪ Increase capacity of courses pertinent to construction industry ▪ Campaigns to bring attitudinal changes in the youth towards this industry ▪ Setting up of a	▪ Adding more prestige to the profession to attract youth ▪ Tie ups with ITIs and ITCs ▪	▪ Setting up of training institutes	▪ Assist the Government in setting up of the construction academy ▪ Setting up of training modules and course curriculum

Sector	For Government	For Industry	For Private training providers	For NSDC
	construction academy in a hub and spoke model			▪ Training the trainers
Food processing	▪ Active implementation of the announced plans ▪ Government departments to provide thrust on training in the sector ▪ Encouragement of PPPs	▪ Immense scope for setting up of food processing units	▪ Ample opportunities for training in the sector	▪ Collaboration with Government for creation of training capacity in the State ▪ Focus of sector skill council on the State
IT & ITES	▪ Increased focus on English speaking and communication skills as a part of technical training programs ▪ Increased flow of guest lecturers from the industry and high industry exposure ▪ Upgradation of labs in ITIs and polytechnics	▪ Continued focus on in-house training ▪ Higher coordination with training providers ▪ Increased focus on NASSCOM's LMIS	▪ To collaborate with industry	▪ To assist Government and private training providers
Organised retail	▪ Opening of PPP based retail training centres ▪ Opening of bigger institute / academy	▪ Collaborate with Government in its training initiatives	▪ Scope for more training institutes ▪ Increased integration with	▪ Assist the Government in setting up of retail academy in the State

Sector	For Government	For Industry	For Private training providers	For NSDC
	in PPP		industry	
Textile and Clothing	▪ Up-gradation of existing training infrastructure in collaboration with industry / NSDC ▪ Offer modern courses in design and technology ▪ Establishment of model weaving set ups ▪ Promotion of cluster training programs ▪ Opening of colleges for textile technology	▪ Continued focus on in-house training ▪ Collaboration with Government promoted NGOs ▪ Association level training programs	▪ Collaboration with industry	▪ Assisting the Government in formation of LMIS ▪ Collaboration with Government for opening of training and research institutes
Tourism, Travel, Hospitality & Trade	▪ Create significant training capacity and infrastructure ▪ Branding and awareness ▪ Promotional events ▪ Increased coverage of training programs ▪ Focus on new forms of tourism	▪ Setting up of hotels, resorts and theme parks ▪ Introducing formal taxi services in many districts ▪ Focus on eco and adventure tourism	▪ Setting up of new training institutes	▪ Collaborating with Department of Tourism and Department of Higher Education ▪ English communication and soft skill labs

3. District wise skill gap assessment

3.1. BAGALKOT

1. Introduction

Bagalkot was formed as a separate district in the year 1997. It has a total land area of 6,593 sq. km., which is 3.4 per cent of the total State area. It is bordered on north by the Bijapur district, on the east by the districts of Raichur and Koppal, on the south by Gadag and Dharwad districts and on the west by Belgaum district.

It is sub-divided into 6 sub-districts and has 623 villages. Majority of the population at 71.1 per cent lives in rural areas. Agriculture is the main occupation, employing 65 per cent of the labour force (as of Census 2001). The remaining is in household industry (eight per cent) and other workers[6] at 27 per cent.

Jowar and Maize are the key crops grown. Sugarcane is also grown in plenty and this has led to setting up of some sugar-based industries in the district. The district is also well endowed with considerable mineral wealth. The major minerals available in the district are limestone, granite and iron ore. This has led to setting up of several industries such as cement, granite cutting and polishing and stone crushing. Bagalkot is also famous for its “Pink Granite” mainly found in the Ilkal taluk which is used in the construction industry.

[6] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

The Upper Krishna Project across the river Krishna at Almatti is one of the major projects of government of Karnataka. This project on completion will irrigate the drought areas in the districts of Gulbarga, Raichur, Bagalkot and Bijapur. However, due to this project 131 villages and some parts of the Bagalkot town will be submerged under backwaters. The challenge of rehabilitation of project affected families is being taken by the "Rehabilitation and Resettlement" department of the Upper Krishna Project. Following the submergence of part of Bagalkot, a new town named "Navanagar" has been constructed. Navanagar is a planned town with grid pattern layout with wide roads, parks and other amenities.

Table 12: Comparison of Bagalkot district with Karnataka – key indicators

Indicator	Year	Bagalkot	Karnataka
Area, in sq.km.	2001	6,593	191,791
Percentage share in State geographical area, %	2001	3.4%	100%
No. of sub-districts	2011	6	175
No. of inhabited villages	2001	623	27,481
No. of households	2001	293,645	10,401,918
Forest area as a % of total geographical area	2001	12.3%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Bagalkot district has a population of 18.9 lakh persons – 3.1 per cent of the State population. Majority of the population (25 per cent) is concentrated in Jamkhandi sub-district, followed by Badami, Mudhol and Hungund sub-districts at 17 per cent each, Bagalkot sub-district at 15 per cent and Bilagi sub-districts at 9 per cent. While 60 per cent of the population in the district is in working-age group (15 to 64 years), about 38 per cent is only actually working i.e. work participation rate.

The district's literacy rate is 69.39 per cent, which is lower than the State average of 75.6 per cent. Male literacy at 80.16 per cent is significantly higher than female literacy rate at 58.55 per cent. Of the 30 districts, Bagalkot ranks 23rd on Gender Development Index (GDI), with a value of 0.571.

Most of the population (71.1 per cent) lives in rural areas. In fact, as mentioned earlier, agriculture is also the main occupation of the people of the district, employing 65 per cent of the labour force as either cultivators or agricultural labourers.

Table 13: Key demographic indicators

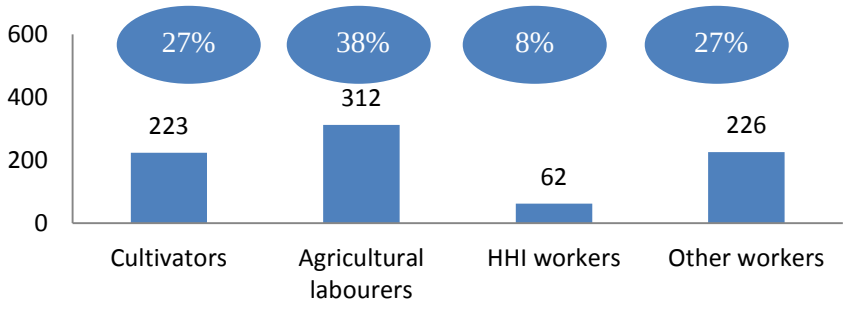
Indicator	Year	Bagalkot	Karnataka
Population, No.	2011	1,890,826	61,130,704
Decadal growth rate of population, %	2001-11	14.5%	15.7%
District's share in State's population, %	2011	3.1%	100%
Urban population as a percentage of total population, %	2001	28.9%	34%
SC population, %	2001	15.2%	16.0%
ST population, %	2001	4.8%	7.0%
Sex ratio, No. of females per 1000 males	2011	984	968
Population density, per sq. km.	2011	288	319
Literacy rate, %	2011	69.4%	75.6%
Main workers, No.	2001	561,559	19,364,759
Marginal workers, No.	2001	158,100	4,170,032
Working age population* as a percentage of total population, %	2001	59.5%	63%
Work participation rate^, %	2001	38.1%	45%
HDI	2001	0.591	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 8.24 lakh persons. Of this, 27 per cent are cultivators, 38 per cent are agricultural labourers, eight per cent are workers in household industry and 27 per cent are other workers.

Figure 19: Bagalkot's district's worker profile, as of 2011, in thousands



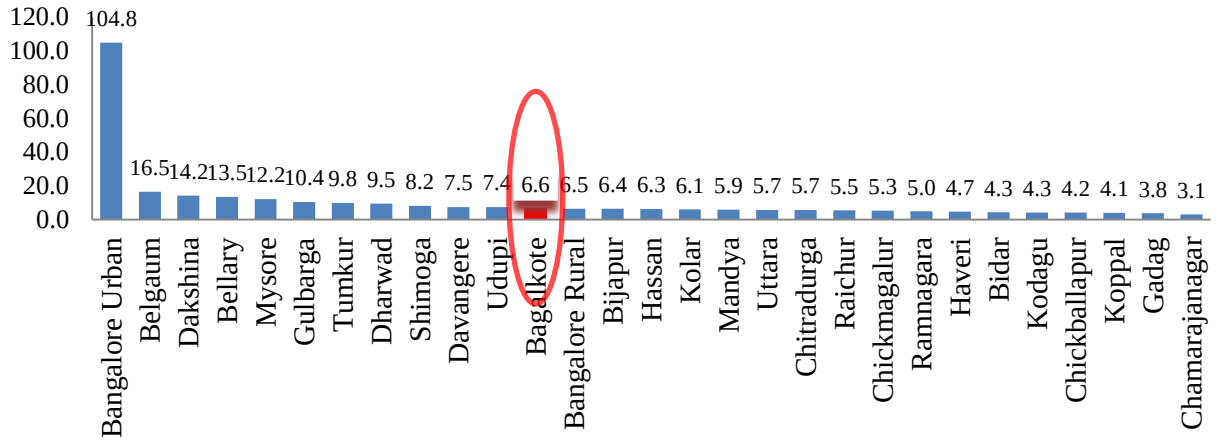
HHI: Household Industry

Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Bagalkot district had the 12th largest Gross District Domestic Product (GDDP) in Karnataka at Rs 6,612.73 crore (2.15 per cent of the Gross State Domestic Product). In terms of per capita GDDP, it ranked 15th amongst 30 districts at Rs 36,520. This was lower than the State average of Rs 53,101.

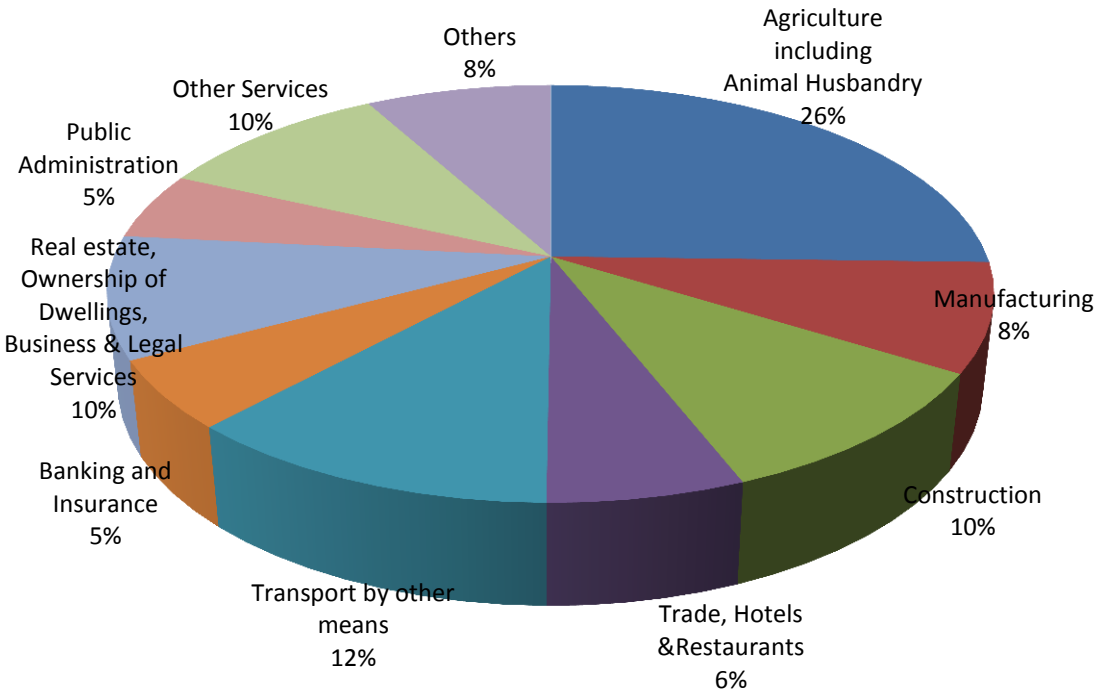
Figure 20: Gross District Domestic Product, in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 62 per cent in 2008-09. This is followed by primary sector at 30 per cent and secondary sector at 8 per cent. The detailed break-up of the three sectors is given in figure below.

Figure 21: Sector wise distribution of Bagalkot's GDDP, as of 2008-09, 100% = Rs 6,612.73 crore



Source: Karnataka Directorate of Economic and Statistics

Agriculture: Of the total area of 6,593 sq. km. in the district, over 69 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of jowar and maize under food crops and sugarcane under commercial crops. There is a considerable amount of horticultural crops grown in the district such as grapes, pomegranate, tomato, cabbage, etc. A food park is also established in Navanagar where food processing industries have started establishing their units. For details of crops grown in Bagalkot district, refer to annexures.

Industry: As of 31st December 2011, Bagalkot district had 18 large and medium scale industrial units, employing 7,478 persons. These included companies such as J.K. Cement Limited, Nirani Sugars Limited, Godawari Sugars Limited, etc. (Refer to annexures for complete list). End products manufactured by these companies include cement, crystal sugar, distillery, ethanol, dairy product etc.

Bagalkot also has 410 Small Scale Industries (SSIs), employing 2,283 persons. As of March 2010, majority of these were leather based industries at 32 per cent, followed by textile based industries at 22 per cent,

wood based industries at 8 per cent, food & intoxicants based industries at 5 per cent and remaining in others. Refer to annexures for details.

The district has two industrial areas, totalling 388.26 acres of land. Of this, 215 acres of land has been allotted so far. Bagalkot district is attracting significant investments from industrial players. During the Global Investors Meet (GIM) held in 2010 in Karnataka, 16 Memorandums of Understanding (MoUs) amounting to Rs 36,949 crore were signed for the district. Once set up, these are estimated to employ 20,153 persons.

Karnataka held its second GIM in June 2012. During this event, 15 MoUs / Expressions of Interest / Registrations of Interest happened for Bagalkot district. These have a proposed investment of Rs. 14,750 crore. These are expected to provide direct employment to over 9,200 persons. The interests have been signed for projects in sectors such as cement, sugar, tourism, etc. For details of projects signed in GIM 2010 and 2012, refer to annexures.

Services: The services sector includes construction, wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 62 per cent of GDDP in Bagalkot district. Of all the services, the key services in the district are 'Transport by other means' at 12 per cent of GDDP, followed by 'Construction', 'Real estate, Ownership of Dwellings, Business & Legal Services', and other services at 10 per cent each.

2.3. State of education

As of September 2011, Bagalkot district 2,080 schools, with 358,701 students enrolled. The drop-out rate was seven per cent for lower primary and 7.44 per cent for upper primary schools. The State average is 4.6 per cent for lower primary and 8.1 per cent for higher primary schools. The district has a high drop-out rate in lower primary schools compared with the State average.

There are 92 pre-university (PU) colleges with 30,997 students. There are also 56 general colleges, one medical college, nine polytechnics (for technical education), one engineering college and one dental college. For details of courses offered by polytechnics, refer to annexures.

Table 14: School education infrastructure in Bagalkot district, as of September 2011

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Government	491	140278	822	52729	157	37091
Aided	9	12089	51	4859	104	29065
Unaided	111	52087	192	12949	103	13385
Others	4	544	17	1535	19	2090
Total	**615**	**204998**	**1082**	**72072**	**383**	**81631**

Source: District Information System for Education (DISE) 2011-12

Table 15: Higher education infrastructure in Bagalkot district, as of March 2010

Colleges	No.	Students
PU Colleges	92	30,997
General	56	9,682
Medical	1	442
Polytechnic	9	1,952
Engineering	1	621
Dental	1	516

Source: Bagalkot District at a Glance 2009-10

For vocational training, Bagalkot district had a total of 35 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, four were Government ITIs, nine were private aided ITIs and remaining 22 were private unaided ITIs. All the 35 ITIs together have a seating capacity of 4,200. As of March 2012, student enrolment totalled 3,600. Of this, 3,300 were males and 300 were females.

Table 16: Key ITI indicators in Bagalkot district, as of March 2012

Indicator	Value
Total Number ofITIs	35
Number of Government ITIs	4
Number of Private aided ITIs	9
Number of Private unaided ITIs	22
Total Seating capacity	4,200
Total student enrolment	3,600
Student pass rate	80-85%
Student drop-out rate	5%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Bagalkot district, we have found that on an average, of all the students that pass out from an ITI in each year, 50 per cent find jobs in the market. For details on courses offered by ITIs in Bagalkot, refer to annexures. In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions.

The Government Department offer courses in trades such as agriculture, handloom, textiles, education, etc. In Agriculture sector, 'District Agricultural Training Institute' conducts courses on agricultural development, fertilizers, beekeeping, animal husbandry, and etc. 'District Institute of Education and Training' conducts program on personality development and teacher training. 'Handloom weavers Training Centre' provides training in textile sector such as basics about power loom; skill up gradation; Computer Aided Design and Drawing (CADD); Auto loom. The state run KEONICS offers computer related courses in the district.

The private training institutes are mainly offering computer courses. The courses offered by them includes Computer basics, MS office, Desktop Publishing (DTP), Tally, Programming languages (java, c), hardware courses, etc. There are few other private training centres providing training on beautician, tailoring. For details of training institutes and courses offered, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Bagalkot district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- Students join ITIs believing that this technical course can fetch them job opportunities easily than other courses. Some students join ITI to later continue with Diploma education in polytechnic.
- The trades that are in maximum demand among students are electrician and fitter trade.
- Training institutes in Bagalkot lack adequate machinery and infrastructure for training. Students also feel that up gradation needs to be done in the curriculum.
- Quality of teachers is believed to be good. However, youth feels that adequate numbers of staff are not available and vacancy in teachers needs to be filled.
- Placement scenario in training institutes is below average mainly because of lack of industrial activities in and around the district.

- First preference of the youth is to work within Bagalkot district only. However, if there is an opportunity to work outside the district, people are willing to migrate.
- Students expect a salary of around Rs. 8,000 to 10,000 per month on their job after completion of the course.
- Some students are willing to pursue parallel training courses along with their primary course which can increase their job opportunities. Most student prefer computer & IT related courses to join.
- Preferred sectors to work are IT, agro-based (sugar), manufacturing (electrical) and textiles.

3. Developmental concerns

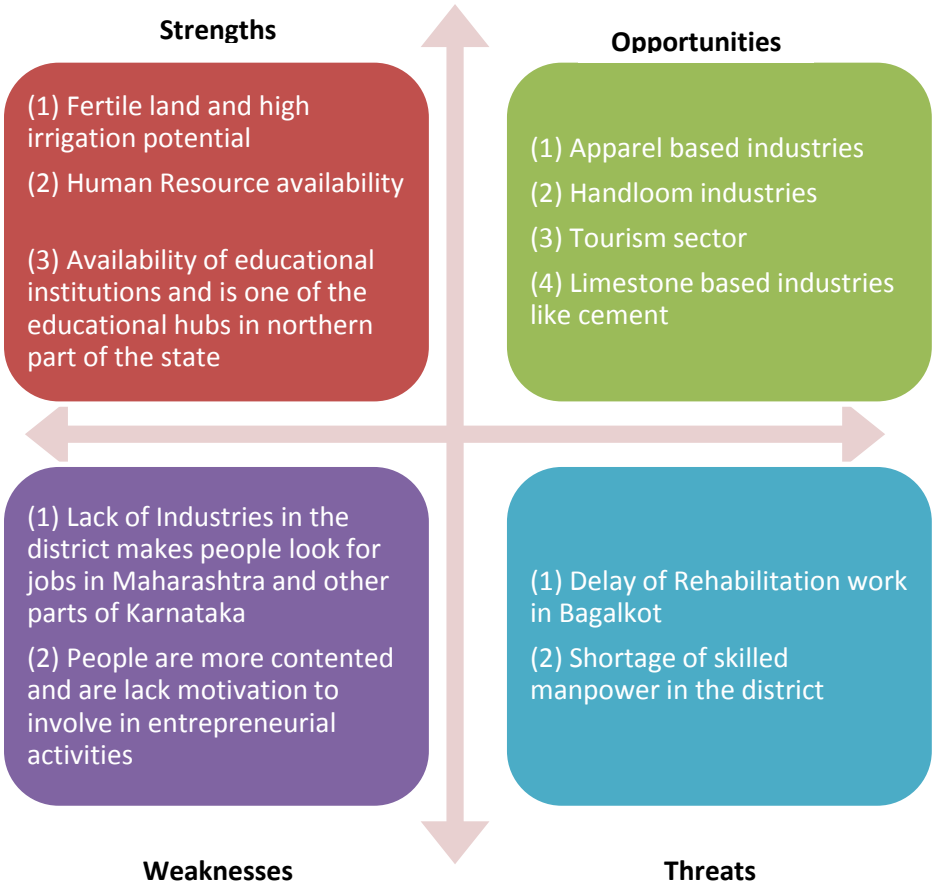
Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Rehabilitation work of the Upper Krishna Project:** The Upper Krishna project is one of the major projects of Government of Karnataka. This project on completion will irrigate the drought areas in the districts of Gulbarga, Raichur, Bagalkot and Bijapur. However, due to this project 131 villages and some parts of the Bagalkot town got submerged under the backwaters. The challenge of rehabilitation of project affected families is being taken by the "Rehabilitation and Resettlement" (R & R) department of the Upper Krishna Project. Many people who were dependent on agriculture have lost their land in the process. They have been compensated for the land and properties from the R & R fund. But, many people have exhausted the compensation amount received from the Government by spending them casually. Also, delay in the rehabilitation process has made people to move out of the town and start new ventures in the nearby districts such as Bijapur.
- **Shortage of skilled manpower within the district:** The district has many educational institutions providing education and training to the locals. However, locals, especially youth are more prone to moving to cities such as Bangalore, Hyderabad and Pune for better job opportunities, higher compensation packages and better standard of living. This has created a shortage of skilled manpower within the district. The district has started attracted investments from industry players. The human resource is available in the district. However, the industries face the challenge of finding skilful people locally in Bagalkot district.

SWOT analysis

Based on the diagnostics of the Bagalkot district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 22: SWOT Analysis of Bagalkot district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 185,073 persons is likely to be generated in Bagalkot district. Agriculture and allied activities are expected to remain the biggest employers. However, within that, workforce is expected to gradually come down in agriculture and increase in allied activities. Food processing industries are up-coming in the district and are expected to employ semi-skilled persons. Also, demand for minimally skilled and semi-skilled workers in construction sector may be prevalent in coming years because of the rehabilitation process

undertaken in and around Bagalkot town. As the economy grows, employment demand in supporting sectors such as construction, transportation, healthcare and education is also expected to increase at a faster rate. However, sectors which are unique to Bagalkot and where skill up-gradation will be required within Bagalkot are textile and clothing, tourism and handloom industry.

Table 17: Incremental demand in Bagalkot – 2012 to 2022

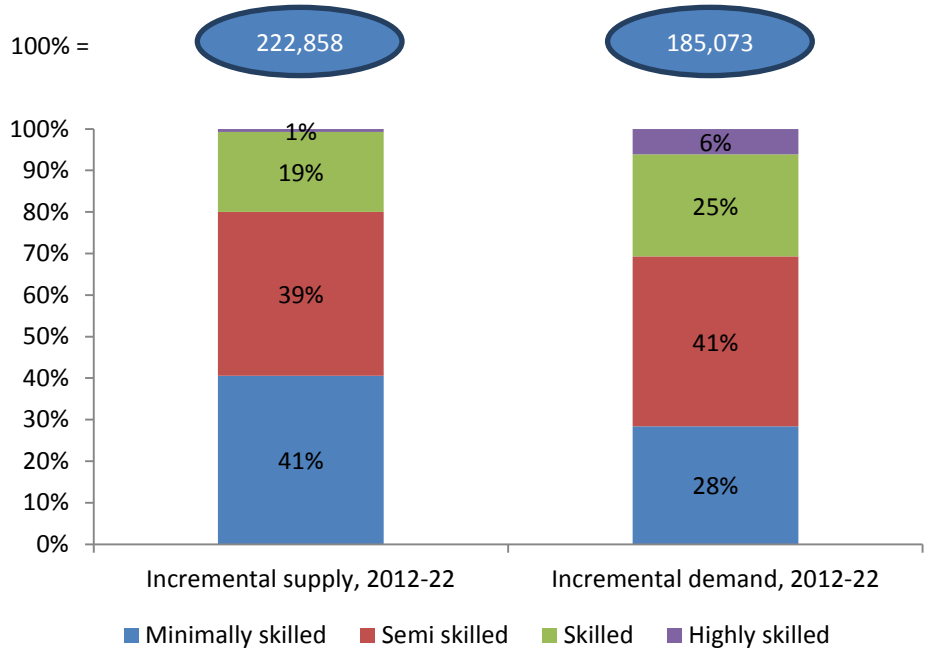
SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	55,741	46,425	6,939	1,263	1,115
BFSI	6,729	-	4,037	2,019	673
Building, Construction industry and Real Estate	31,575	9,472	15,787	4,736	1,579
Construction Materials and Building Hardware	1,961	196	1,275	392	98
Education and Skill Development	11,904	-	-	10,713	1,190
Food Processing	1,226	368	368	368	123
Furniture and Furnishings	218	87	87	33	11
Healthcare Services	12,765	-	1,276	8,935	2,553
Textile and Clothing	1,382	276	829	207	69
Transportation, Logistics, Warehousing and Packaging	29,244	5,849	16,962	5,849	585
Tourism, Travel, Hospitality & Trade	31,527	6,305	21,438	3,153	631
Unorganised	102	20	59	20	2
Mining	699	140	419	70	70
Total	**185,073**	**69,139**	**69,478**	**37,758**	**8,698**

Source: IMaCS Analysis

The incremental supply of work-force between 2012 and 2022 is estimated at 2.22 lakh. This is higher than the demand of 1.85 lakh, indicating that some of the workforce available in the district will not be absorbed within the district alone. People will continue to move to other parts of the state/other states, where demand is higher. Based on the discussions with the stakeholders of the district, it is observed that people are migrating to places where there are better opportunity to get higher salary. Most of the skilled and highly skilled persons graduating from colleges in the district are willing to migrate to cities such as Bengaluru. The demand for highly skilled people is estimated to be more than the supply going forward. Therefore, measures should be taken to control migration among skilled persons and also training the semi-skilled workers to make them as skilled manpower. Training infrastructure may be developed in the district to minimise the gap in the demand and supply of skilled manpower in coming

years. Figure 23 represents the projected skill wise incremental demand and supply (number of persons) in Bagalkot district for the period of 2012 – 2017.

Figure 23: Skill wise incremental demand and supply in Bagalkot district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on our field surveys in Bagalkot district, we have found out that sectors where skilling interventions are required are mainly 'agriculture and allied', 'textiles and clothing', 'tourism, travel, 'hospitality & trade' and handloom industry. While new jobs are likely to be generated in agriculture allied sector, textile and clothing and tourism; interventions in handloom sector are mainly from the skill up-gradation perspective. In addition, the district also has other manufacturing and engineering industries, which do not have significant employment generation potential, but are facing shortage of skilled manpower for functional skills such as mechanics, plumbers, electricians, masons, welders etc.

Table 18: Sectors where interventions are required in Bagalkot district – comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Bagalkot	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 19: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Textiles and clothing industry		√	√
Unorganised Sector – Handloom	√		√
Tourism			√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Textiles and clothing industry

As of March 2011, Bagalkot district had 626 textiles based SSIs, employing 2,423 workers. The entire value chain of the 'Textile and Clothing' industry is not present in Bagalkot district. Mostly, the readymade garment units are present. Cloth is generally procured from places such as Ahmedabad, Erode and Mumbai. In Bagalkot, this cloth is cut, stitched and packed to make readymade garment. These garments are further sold off in various markets in Maharashtra and other parts of Karnataka.

In the last two to three years, many garment based industries have started operations in and around Bagalkot. During our primary survey with some of the readymade garment manufacturers, we found out that they believe that Bagalkot has enough facilities to favour readymade garment units. The sector representatives believed that human resources for textile manufacturing units are available in abundance in Bagalkot. They added that few training institutes need to be set up or existing institutes upgraded as there is a shortage of skilled manpower in the district. There is an Apparel Training and Design Centre (ATDC) in the district which provides training on Textiles. The centre conducts a basic course on tailoring for a period of one month and this training is not sufficient for the trainers. The industry needs to train the workers on the job for a period of 4 to 6 months to meet up the industry standards.

Workers in a garment factory

Figure 24 given below explains the value chain of the textile and clothing industry. Of the entire value chain, only the circled part (garments) exists in Bagalkot district. Within the garments industry, the value chain followed in Bagalkot district is given in Figure 7 below.

Figure 24: Value chain in textiles and clothing industry

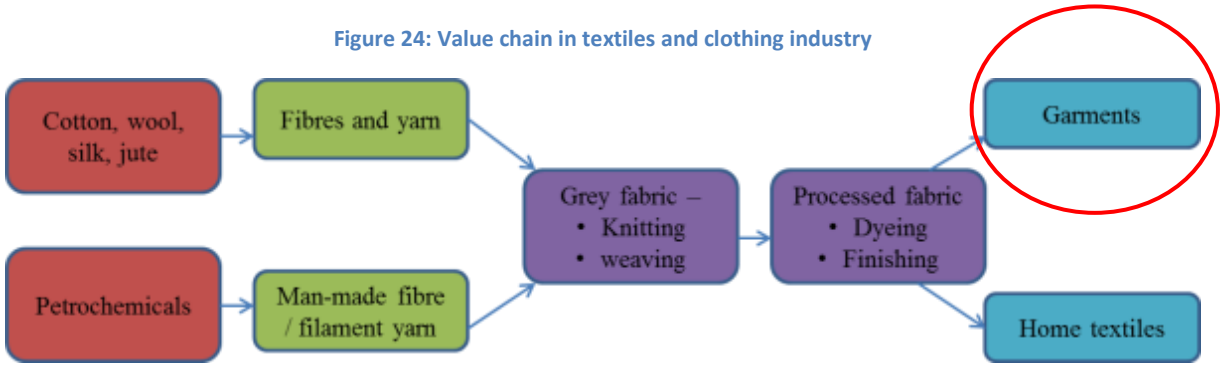


Figure 25: Value chain in garments industry – present in Bagalkot district

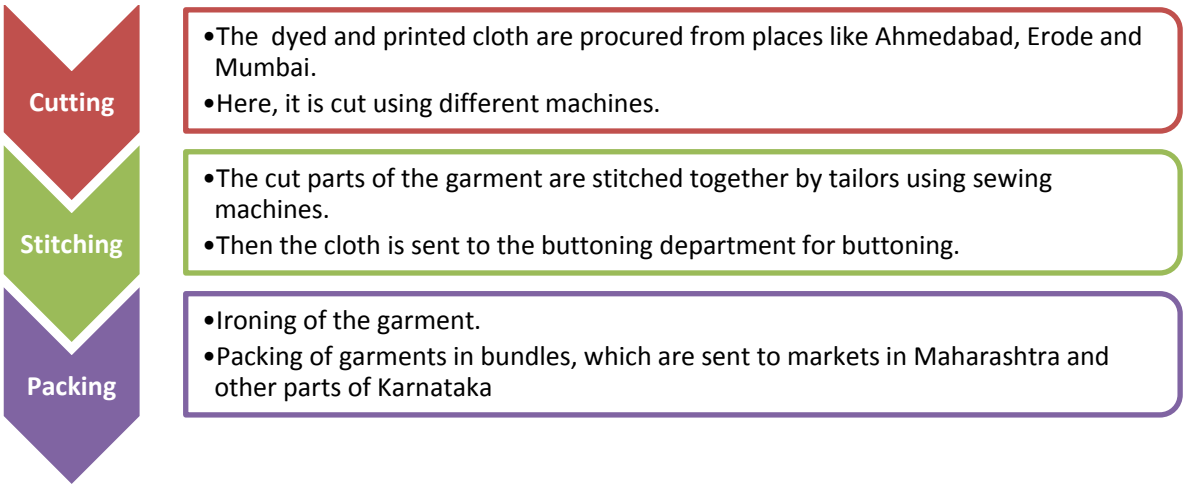


Table 20: Skill gaps in textiles and apparel in Bagalkot district

Role, educational qualification	Expected competency	Skill gaps
Manager / supervisor / floor in-charge (Graduate)	▪ Managing all the facilities and the functioning of the work-force. ▪ Supervising of the work conducted by operators / tailors and conducting quality checks. ▪ Knowledge of pattern making. ▪ Ability to undertake inspection,	▪ Most of the managerial / supervisory staff is hired from Bangalore, as people with such skills are in scarcity in Bagalkot district.

Role, educational qualification	Expected competency	Skill gaps
	production planning and control. ▪ In-depth knowledge of production processes and inspection methods. ▪ Leadership skills ▪ Soft skills and interpersonal skills	
Operators / Tailors/ Production supervisor (illiterate to 10th pass, trained in tailoring from NGOs or training provided by Department of Textiles)	▪ Proficiency in tailoring / stitching is required for stitching garments with different specifications. ▪ Good machine control – knowledge of threading of sewing machine, stitching on different shapes, seaming garment components together in various fabrics to specified quality standard ▪ Knowledge of machine maintenance procedures ▪ Knowledge of pattern making, grading and draping ▪ Ability to understand instructions properly and stitch the garments based on them. ▪ Ability to work in teams / inter-personal skills. ▪ Soft skills	▪ On the job training provided up to 6 months through an experienced tailor/operator, on joining of job to explain requirements and basic skill-up gradation. This is done usually for freshers. ▪ Even those who are trained before the job have to be re-trained, especially on running of machines, as the training institutes do not have good machine infrastructure.
Quality control executive / Finishing Supervisor	▪ Ability to inspect if the garments have been stitched as per given specifications and instructions ▪ Ability to check for quality adherence	▪ On-the job training provided as such skills are lacking in persons trained at training institutes and usually come

Role, educational qualification	Expected competency	Skill gaps
(experience in garment industry)	▪ Ability to understand and prevent defects like size variations, loose threads, stains etc.	from experience only.
Helpers (illiterate to 10th pass)	▪ Ability to help the tailors by giving the cloth to stitch in the specified design and format ▪ Ability to check the garments, find and remove the stain in the garments ▪ Ability to identify and cut the loose thread in the finished garments ▪ Ability to iron the ready garments properly. ▪ Ability to pack the garments in bundles	▪ Basic skills required for this profile, for which no / minimal training required. Mostly provided easily on the job.

Source: IMaCS Analysis

5.2. Unorganised Sector - Handloom industries

Bagalkot district has a number of silk and handloom units. The district is famous for its traditional "Ilkal Sarees" which is generally weaved in and around Ilkal taluk. Ilkal sarees are woven using cotton warp on the body and art silk warp for border and art silk warp for pallav portion of the saree. In some cases instead of art silk, pure silk is also used. Traditionally, these sarees were weaved using handlooms and now power looms have replaced them. There are approximately 2000 power looms in Ilkal producing these sarees. This is usually a household enterprise involving family members and other locally available workers. The sarees are quite popular among females in Maharashtra and Karnataka. Ilkal Sarees is given a Geographical Indication (GI) status.

The Raw materials of the Ilkal sarees are art silk, silk and cotton. Most of the weavers procure silk from Bangalore silk market. The woven sarees are then sent to sale for places such as Solapur (Maharashtra) and other parts of Karnataka.

The distinctive feature of Ilkal sarees is the use of a form of embroidery called as Kasuti. These sarees are usually 9 yards in length and the pallu of the Ilkal saree (the part worn over the shoulder) carries designs of temple towers.

Traditional Ilkal Saree

Ilkal saree weaving process in a power loom

Table 21: Skill gaps in Ilkal Saree Power loom industries in Bagalkot district

Entity	Role, educational qualification	Expected competency	Skill gaps
Ilkal saree weaving unit	Weaver (Illiterate, or 10th standard Pass)	▪ Knowledge about the traditional Ilkal sarees ▪ Ability to handle the power loom machine ▪ Ability to use the silk, art silk and cotton yarn in the required specification to make the saree ▪ Understanding about different traditional embroidery designs and making them ▪ Ability to use different coloured silk yarn to make the saree ▪ Ability to produce the saree in different lengths as specified ▪ Ability to check for cut threads and connect new threads so that the knot does not show ▪ Ability to check finished cloth for damages such as projected threads, cuts, accumulated dust, etc. ▪ Ability to ensure the required quality of the final product	▪ Inadequate formal training about traditional designs and traditional saree making art ▪ Understanding about various raw material (silk, art silk and cotton fibre) and the proportion to be used is inadequate ▪ Finding difficult in replicating the traditional embroidery designs

Source: IMaCS Analysis

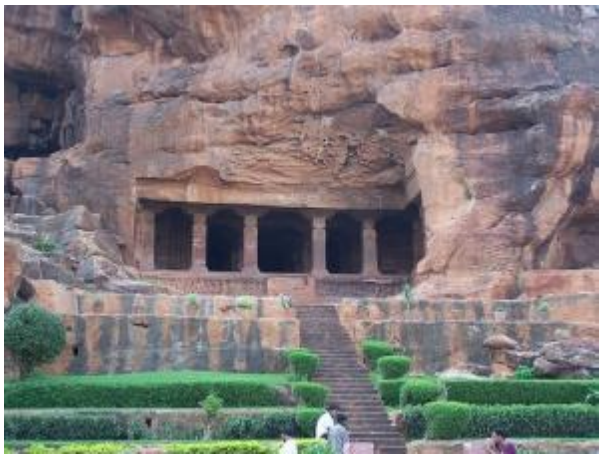
5.3. Tourism, Travel, Hospitality & Trade

Bagalkot district has numerous tourist attractive places. Historically, Bagalkot was the capital of the Chalukyan Empire of South India. The remnants of Chalukyan art and architecture are important tourist attraction in Bagalkot tourist. The famous tourist places at Bagalkot district are as follows:

Tourist Place	Particulars
Pattadakal	This place is known for historical temples surrounded by numerous minor shrines and plinths, represents the climax of early Western Chalukyan Architecture.
Aihole	Aihole is historically famous as the cradle of Hindu temple architecture. This is an important temple town with over 140 temples belonging to both the early and later Chalukya times
Badami Cave Temples	Badami is well known for its magnificent carved cave temples, artificial lake, museums and rock-cut into a crag. Four cave temples are the main attractions of the town are carved out of sandstone on the cliff of a hill.
Kudala Sangama	Kudala Sangama is an important centre of pilgrimage for people of the Lingayat faith. The Krishna river and Ghataprabha river merge here and flow east towards Srisaila (another pilgrim center) in state of Andhra Pradesh.

(The group of monuments in Pattadakal (including Aihole and Badami temples) is included under ***UNESCO World Heritage*** list)

Pattadakal temple



Badami cave temple

This district offers abundant scope for the tourism industry. The state government has also identified the potential of the district in tourism and actions are being taken to develop the tourism in the district. Tourism along with other services sectors is expected to generate more employment in the future.

Table 22: Skill gaps in Tourism sector in Bagalkot district

Role, educational qualification	Expected competency	Skill gaps
Guide (10th pass to Pre University)	▪ Ability to talk multiple languages such as English, Hindi and few regional languages ▪ Ability to manage customers ▪ Knowledge/awareness of the places, people and culture ▪ Behavioural knowledge ▪ Basic first aid knowledge	▪ Inadequate communication skills ▪ Insufficient factual knowledge of historic tourist places ▪ Inadequate skills in first aid and other emergency needs Presently, there are no specific institutes in the district, which provide tourism specific training. However, as tourism industry picks up in the district in the next few years, demand for skilled tourism personnel is expected to increase.
Driver (illiterate to 10th pass)	▪ Ensuring safety of passengers ▪ Awareness on driving rules and regulations ▪ Familiarity with routes ▪ Ability to communicate and being sensitive to tourists ▪ Awareness on various hotels and other locations in the travel route. ▪ Knowledge of first aid ▪ Knowledge of English ▪ Understanding the traveler's requirements in terms of location preferences and acting accordingly.	

Source: IMaCS Analysis

5.4. Others

In addition to the sectors mentioned above, Bagalkot district is also home to few manufacturing and engineering based industries. While most of them don't have any employment generation or expansion plans in the next few years, they have reported shortage of skilled manpower in some of the key functions like mechanics, plumbers, electricians, masons, welders, metallurgy (diploma / engineer) etc.

6. Recommendations

Recommendations for Bagalkot mainly focus on the textile and handloom industries, as other than agriculture, these are the key source of employment for people in the district and have the potential to generate more employment, going forward. Tourism can be promoted in the district and there are numerous destinations in the district. Tourism in the district has the potential to become a major activity (especially in Badami taluk) and employment can be generated in this sector. The allied sectors of tourism such as hotels, travels, etc. can also generate employment in the district.

A significant percentage of employment is concentrated in agriculture, thus, major up-skilling can be done for those workers, updating them of latest techniques of farming. This will help them improve their livelihood opportunities and will increase their income levels. While the detailed recommendations follow, summary is given in the table below.

Table 23: Key recommendations for Bagalkot - summary

Sector	For Government	For Private players	For Industry
Textile and Clothing	▪ Policy thrust in setting up of new textile units in the district ▪ Enhance the curriculum and duration of the existing training program to cater the need of industry	▪ Set up new training institutes in the district for textiles ▪ Courses that needs to be focused are cutting, tailoring, quality checking and garment finishing	▪ Set up new units in the district which can generate employment ▪ Tie up with training provider for recruiting skilled personnel

Sector	For Government	For Private players	For Industry
Unorganised Sector – Handloom industry	▪ Provide training through 'Department of Handloom and Textiles'. ▪ The training can be focused on handling power loom, creating embroidery designs, checking and finishing.	▪ Training of weavers in operating power loom, embroidery, etc.	▪ n/a
Travel, Tourism, Hospitality & Trade	▪ Training by 'Department of Tourism' can be scaled up ▪ Regulator role in the industry	▪ Training on language, historic places, route optimization can be offered	▪ Industry players can involve in formalizing the sector through branding ▪ Building infrastructure in tourist spots through PPP model
Agriculture and allied sector	▪ Facilitate the training program for farmers	▪ Training persons on food processing activities in the district ▪ Tie up with the food processing industries and provide up skilling training	▪ Can follow contract farming ▪ Training farmers and employees through University of Horticultural Sciences

6.1. Textile Industry

Bagalkot district has considerable number of workers in the textile sector. The entire value chain of the 'Textile and Clothing' industry is not present in Bagalkot district. Mostly, the readymade garment units are present. In the last two to three years, many garment based industries have started operations in and around Bagalkot. The garment manufacturers believe that Bagalkot district has facilities to favour readymade garment units. The human resource availability is important among them. It is also believed that there would be some more new units set up in the district. The sector is experiencing shortage of skilled manpower in the district. The interventions required for this sector in Bagalkot will be:

1. New institutes that teaches tailoring and other allied textile based activities as per the requirement of the industry
2. Up-gradation of existing training institutes. These training institutes need to update the curriculum and infrastructure to suit industrial requirements.

Government

Government can also involve in capacity building in this sector. Some of the ways in which training can be provided for the sector are as follows:

- Department of Employment and Training through 'Modular Employable Skills' (MES) under 'Skill Development Initiative Scheme' (SDIS) can conduct various courses on garment making
- Department of Employment and Training can offer 'Cutting and Tailoring', 'Dress making' and 'Fashion Designer' trades in ITIs in these districts with limited capacity at the initial stage.
- Directorate of Municipal Administration can offer textile training programs through Swarna Jayanti Shahari Rozgar Yojana (SJSRY) scheme

The Government can also do a facilitator role in this sector. Department of Industries and Commerce has a promotional policy in the state named 'Suvarna Vastra Neethi – 2008-2013' to give an added support to this sector considering the large employment opportunities (especially for women) it can generate.

Private players

New training institutes can be set up in the district as the district lacks sophisticated training institutes for the textile sector. These training centres should address the skill gap prevailing in the district and should train based in the requirement of the industry. Usually, training centres in the district are

providing one-month course training program. However, based on our discussions we have found that these short duration courses are not meeting the needs of the industry. These trainees on employment in the textile unit, undergoes further training from the experienced persons. The industry believes that there needs to be a training program for at least six months to get well-trained personnel. Only then can they be involved in production. The courses that can be offered by the private training centres in the district are:

- Cutting and Tailoring
- Quality checking
- Garment finishing and accessorising

The training centres could have industry involvement in designing the course curriculum and make it pertinent to local requirements. For example, Textile units in the district are involved in more of woven garments production. Therefore training can be given in woven cloth stitching than in knitted garments. Industry involvement can also facilitate quick placement of the trainees.

Industry

New industry units can be started which could provide employment to the local people. The conditions for starting a new textile unit are favourable in the district and the human resource is also available. Existing industry players can engage in expansion plans which could lead to employment generation. Textile units will require skilled manpower for various job roles. Therefore, these units can have a tie up or relationship with the training providers (Government/private) and recruit the manpower required from these institutions. The industry players can also participate in training the people according to the requirement of the industry locally. They could engage in framing the curriculum with training providers according to their need. This way, it could result in a win-win situation for both training providers by placing the candidates and textile units by getting skilled manpower.

6.2. Unorganised Sector - Handloom industries:

Bagalkot district has a number of silk and handloom units. The district is famous for its traditional “Ilkal Sarees” which is generally weaved in and around Ilkal taluk. Ilkal sarees are woven using cotton warp on the body and art silk warp for border and art silk warp for pallav portion of the saree. There are approximately 2000 power looms in Ilkal producing these sarees. This is usually a household enterprise involving family members and other locally available workers. Ilkal sarees has been given a Geographical

Indication (GI) status. Currently, there is no specific training program for weaving of Ilkal sarees in the district. Since it is a household enterprise, the family members generally teach the later generation about the weaving and loom processing. However, these units need to employ labours from local and they are experiencing skill gaps in the sector. The process of saree weaving is a skill based activity and would require skill based workers going forward, if the traditional industry needs to survive.

Government

Government will have a major role to play in the development of skilled workers in this sector. The Department of Handloom and Textiles has established a training institute in the district. It is 'Karnataka Handloom Weavers Advanced Training Institute (KHWATI)' located in Jamakhandi taluk of the district. This institute offers short term courses in Modern Handloom weaving, Design and Printing and Dyeing. They offer courses to handloom weavers covered by Co-Operative Societies, Karnataka Handloom Development Corporation and unorganized handloom weavers from Karnataka State.

As mentioned earlier, weavers are generally from the economically backward background and cannot afford to pay fees for any training. Also, this situation forces them in not taking any training related activities. Therefore, government needs to intervene in this sector and conduct training activities through Department of Handloom and Textiles or through various other schemes on training. The people expect to receive stipend during the training period as they will be not be employed during the course of training period and lose their daily earning. The government training programs usually provide stipends for the trainees. There is an annual short term course offered in the taluk. However on discussing with weavers and owners of hand loom industries, they mentioned that these short term courses are insufficient to understand about handling the power loom and saree making process, as the process is intricate. Therefore an advanced training course on this sector can be developed by focussed on:

- Handling power loom machines
- New embroidery designs to be used in the sarees
- Traditional embroidery and designs used
- Saree finishing and checking

This sector has a sizable market in Karnataka and Maharashtra. The government can intervene and can boost this sector to improve the way it functions currently and increase employment opportunities for the people.

Private players

Private players can also engage in capacity building for this sector. Similar training programs conducted by the Government (Department of Handloom and Textiles) can be incorporated by the private training providers. The training can be provided on operating power looms, embroidery designs, etc. NGOs can also involve in training the weavers in the sector.

6.3. Tourism, Travel, Hospitality & Trade

Bagalkot district has numerous tourist attractive places. The famous tourist attractions in the district are Pattadakal, Aihole, Badami cave temples, Kudalasangama, etc. The group of monuments in Pattadakal (including Aihole and Badami temples) is included under UNESCO World Heritage list. The district has a good potential for promoting it is a heritage tourist centre. There are some challenges that are faced by the sector in the district. These can be broadly classified into capacity building required for the human resource and the infrastructure investment required. The former can be settled by the private sector and the later by the government.

Government

Government can act as a facilitator in the sector. Department of Tourism has taken initiatives in improving the infrastructure of the tourist places through Private Public Partnership (PPP) model. The department is currently inviting bids to develop a star hotel and allied facilities in the district on PPP model. This kind of initiatives will lead to better infrastructure availability. Capacity building is also done by Department of Tourism by conducting training for guides. The process can be scaled up according to the demand in the district. Certification and portable ID card can be given to the guides completing the program as this would ensure trust among the tourists. Department can also check on unregistered tourist/travel operators exploiting tourists.

Private players

Training programs can be conducted by private players as well in this sector. The institutes may have a tie up with the industry and need based and job specific training may be provided. The relationship with industry will ensure placements for students and also meeting the industry standards. The training can be provided based on job roles. Training is required for hospitality sector as well. This will include training the people in trades such as housekeeping, cooking, etc. These courses can be introduced when the tourism industry in the district picks up and demand for skilled manpower increases. All the courses should be certified. Certification can also ensure trust among the tourists. The training for tourist guide role can focus on the following:

Functional role	Training required
Tourist guide / Operators	1. Multi – language skills (English, Hindi other few regional languages) 2. Factual knowledge about the historic tourist places 3. Small emergency related training such as first aid activity 4. Knowledge about various destinations, routes and mode of travel to reach the place 5. Dressing and behavioural training 6. Knowledge about shopping facilities in the district. (Handicraft, textile, etc.)

Industry

The capacity building is required across the value chain, based on the functional role. There are various touch points of a tourist such guides, cab drivers, travel operators, etc. These sectors all are fragmented and unorganised. Also, tourists are also exploited in many ways by these people which creates a bad impression on the sector.

Private players can try to consolidate and formalise this industry. An example can be quoted from call taxi service industry. A decade ago in Chennai, the taxi sector was unorganised and the drivers rush in towards customers in railway station, bus station, etc. Fast Track call taxi was started in the year 2001

and has now formalised this sector. There are many call taxi service providers available now and the passengers are having hassle free travel experience. Fast track call taxi does not own all the taxis. They have given their brand name to franchisees. This way they did not compete with the existing cab operators, instead it provided a base for better business opportunity. When a product/service comes branded, it has better reception among people.

Similarly, a private player can start a venture to provide complete tourism related services in the district. They can provide services such as guides, travel arrangements, lodging arrangements, etc. This can be done by leveraging on the existing manpower available in the district (guides, divers, etc). Local guides may be bought together and train them on the required skill set, certify them and can be made as an employee. Similarly, local cab drivers can be bought together and necessary training can be provided. These drivers can still use the same cars but under the brand name of the private player and can earn better salary.

Also, industry players can involve in improving the infrastructure of the tourist spots. Hotels and hospitality establishments can be built by them. There are some industries who have expressed their interest to set up tourism related establishments in the district during GIM 2012 meet. Such projects can improve the tourism sector in the district and also generate employment locally.

6.4. Agriculture and allied sectors

Agriculture is predominant in the district and majority of the workforce in the district (65 per cent) is involved in agriculture and allied activities. Key crops grown in the district includes jowar, maize, wheat and bajra under food crops and sugarcane under commercial crops. There is also a considerable amount of horticultural crops grown in the district such as grapes, pomegranate, tomato, cabbage, etc. University of Horticultural Sciences is located in Bagalkot. It is involved in enhancing the growth of horticulture sector in the state through training and research activities. Training can be provided to farmers and other workers in agriculture and allied activities to boost this sector.

Government

Government can participate in training activities for farmers. There are some training activities conducted by government through its schemes such as Karnataka Krishi Mission. District Agricultural Training Institute conducts training program for farmers in the areas of new development in farming,

fertilizers to be used, beekeeping and animal husbandry. Training on modern farming practices followed, usage of technology, irrigation types are also essential for farmers. Government can facilitate the training programs conducted for farmers by providing them stipends or at a subsidised cost. This kind of assistance is required for farmers as they are from economically background families. Government has taken the initiative to set up a food park in Bagalkot to tap the opportunity of horticulture crops grown in the district. There are incentives announced for the industries starting their units in the food park and the government can also assist the industrial players in setting up their units which could generate employment locally in the district.

Private players

The food park in Bagalkot is expected to employ people in food processing sector and there may be demand for skilled persons. The private players can train people on:

- Product based training such as juice making, fruit syrups, jam, etc.
- Knowledge about fruits and vegetables
- Sorting, grading and packing

Also, these training providers can partner with the industries and can provide need based training. Up skilling for existing employees in the units can also be provided.

Industry

Industries can also aid in the agriculture allied activities. The facilities in the food park in Bagalkot district include storage, warehouse and sorting & grading. Food processing industrial players can start up a unit in the district. The district has favourable conditions for horticultural crops and the industry can tap the opportunity. They could also involve training providers to train persons on horticultural crops. In this way, they could be able to get skilled manpower required for the industry. These industries could also help farmers through contract farming. Contract farming is a common practice followed in sugarcane farming where the industry procures cane at a pre agreed price from the farmers. Similar method can be followed in horticulture farming as well. There are few industries following this practice. This type of farming will benefit both the farmers and industry. Also, they can involve in training these farmers on best practices to be followed in farming. Usage of pesticides, fertilizers, modern farming practice, irrigation types can be thought to farmers by employing agencies such as University of Horticultural Sciences in the district.

3.2. BANGALORE RURAL

1. Introduction

Bangalore Rural was formed as a separate district in the year 1986 with the division of Bangalore district into Bangalore Rural and Bangalore Urban. It has a total land area of 2,259 sq. km., which is 1.17 per cent of the total State area. It is bordered on north west by Tumkur district, on the north east by Kolar district, on the south by Bangalore Urban district, Ramnagara district and Krishnagiri district of Tamil Nadu.

It is sub-divided into four sub-districts and has 951 inhabited villages out of 1,052 total villages. Majority of the population at 73 per cent lives in rural areas. Agriculture is the main occupation, employing 59 per cent of the labour force (as of Census 2001). The remaining is in household industry (five per cent) and other workers[7] at 36 per cent.

Paddy, ragi, maize, tur, oil seeds, fruits, and vegetables are the key crops grown in Bangalore Rural district. Sericulture is also a primary activity in the district with 6,509 ha under mulberry and 6029

[7] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

Note: The map above also include Magadi, Ramanagara, Channapatna and Kankapura talukas, which now form a separate district – Ramanagara.

tonnes of cocoon was produced in 2007. Animal husbandry is done by most farmers, the district had 1,64,867 cows, 28,703 buffaloes, 1,42,149 sheep, 94,542 goats and 2,027 pigs.

The district has six industrial areas spread across, Dabospet, Dodaballapura, Hoskote, Sompura, Nelamangala and Devanahalli covering an area of 4595 acres; in addition the district has seven industrial estates spread across 193 acres in the same geography. Bangalore Aerospace Park with Aerospace SEZ is being set up near Bangalore International Airport Limited (BIAL) in Devanahalli covering an area of 985 acres, this SEZ will focus on logistics and warehousing, Inland Container Depot (ICD), aerospace industry and multi product industries.

Auto components, manufacturing, aerospace allied industry, sericulture, silk weaving, agro food processing are the major industries in the district. The district benefits from its proximity to Bangalore Urban, industrialists view Bangalore Rural district as a logical extension of Bangalore Urban district. With the set up BIAL, the expressway and development of Devanahalli industrial area, the industrial investments in Bangalore Rural district has multiplied many fold.

Table 24: Comparison of Bangalore Rural district with Karnataka – key indicators

Indicator	Year	Bangalore Rural	Karnataka
Area, in sq.km.	2001	2,259	191,791
Percentage share in State geographical area, %	2001	1.17%	100%
No. of sub-districts	2011	4	175
No. of inhabited villages	2001	951/1052	27,481
No. of households	2001	390,708	10,401,918
Forest area as a % of total geographical area	2001	4.9%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy, and status of education.

2.1. Demography

As per Census 2011, Bangalore Rural district has a population of 9.87 lakh persons – 1.67 per cent of the State population. Majority of the population (32 per cent) is concentrated in Doddaballapura sub-

district, followed by Hoskote sub-district at 26 per cent, Devanahalli sub district at 22 per cent and Nelamangala sub-district at 20 per cent. While 65 per cent of the population in the district is in working-age group (15 to 64 years), about 47.4 per cent is actually working i.e. work participation rate.

The district's literacy rate is 78.3 per cent, which is slightly higher than the State average of 75.6 per cent, and higher than All-India average of 74 per cent. Male literacy at 82.44 per cent is significantly higher than female literacy rate at 70.73 per cent. Of the 30 districts, Bangalore Rural ranks 6th on Gender Development Index (GDI), with a value of 0.64 and 6th on Human Development Index (HDI) with a score of 0.653.

Most of the population (73 per cent) lives in rural areas. In fact, as mentioned earlier, agriculture is also the main occupation of the people of the district, employing 58 per cent of the labour force as either cultivators or agricultural labourers.

Table 25: Key demographic indicators

Indicator	Year	Bangalore Rural	Karnataka
Population, No.	2011	987,257	61,130,704
Decadal growth rate of population, %	2001-11	13.8%	15.7%
District's share in State's population, %	2011	1.6%	100%
Urban population as a percentage of total population, %	2001	27.11%	34%
SC population^, %	2001	20%	16.0%
ST population^, %	2001	3.2%	7.0%
Sex ratio, No. of females per 1000 males	2011	945	968
Population density, per sq. km.	2011	436	319
Literacy rate, %	2011	78.3%	75.6%
Main workers, No^.	2001	726,652	19,364,759
Marginal workers, No^.	2001	165,879	4,170,032
Working age population* as a percentage of total population, %	2001	64.45%	63%
Work participation rate^, %	2001	47.4%	45%
HDI	2001	0.653	0.65

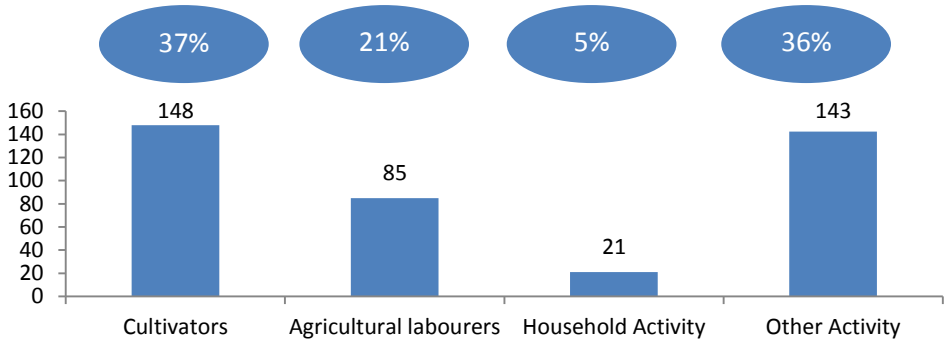
**Working age population is the population in the age group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

^ - Composite of Ramnagara and Bangalore Rural Districts

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

As per the 2001 census the district has a total workforce of about 3.96 lakh persons. Of this, 37 per cent are cultivators, 21 per cent are agricultural labourers, five per cent are workers in household industry and 36 per cent are other workers.

Figure 26: Bangalore Rural district's worker profile, as of 2011, in thousands

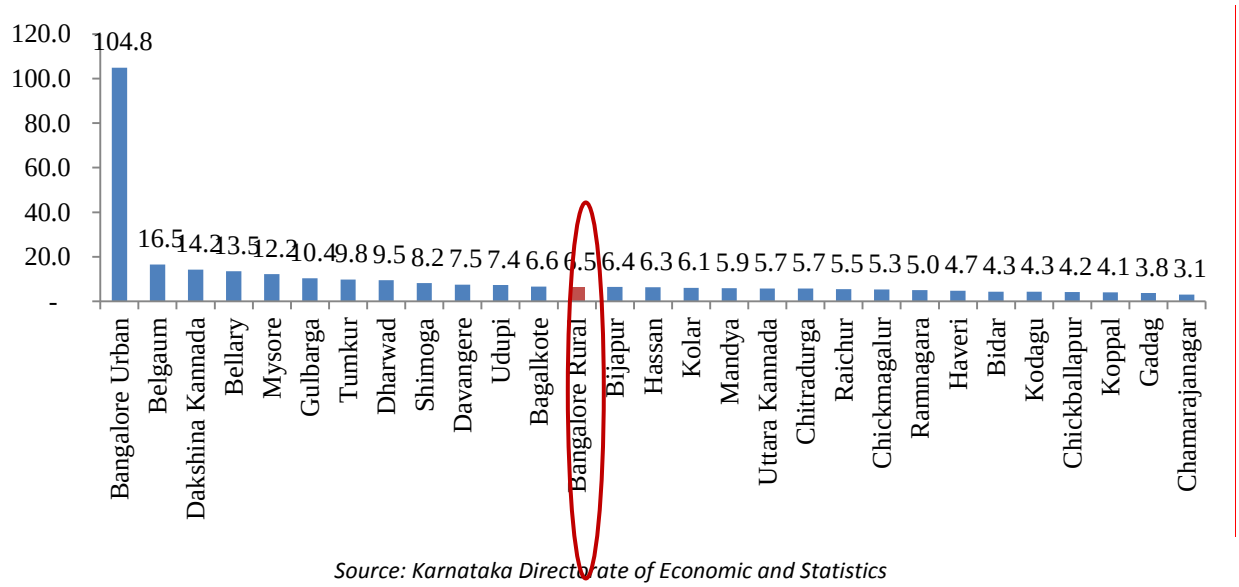


HHI: Household Industry
Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Bangalore Rural district had the 13th largest Gross District Domestic Product (GDDP) in Karnataka at Rs 6,486.97 crore (2.1 per cent of the Gross State Domestic Product). In terms of per capita GDDP though, it ranked 3rd amongst 30 districts at Rs 69,550. This was higher than the State average of Rs 53,101.

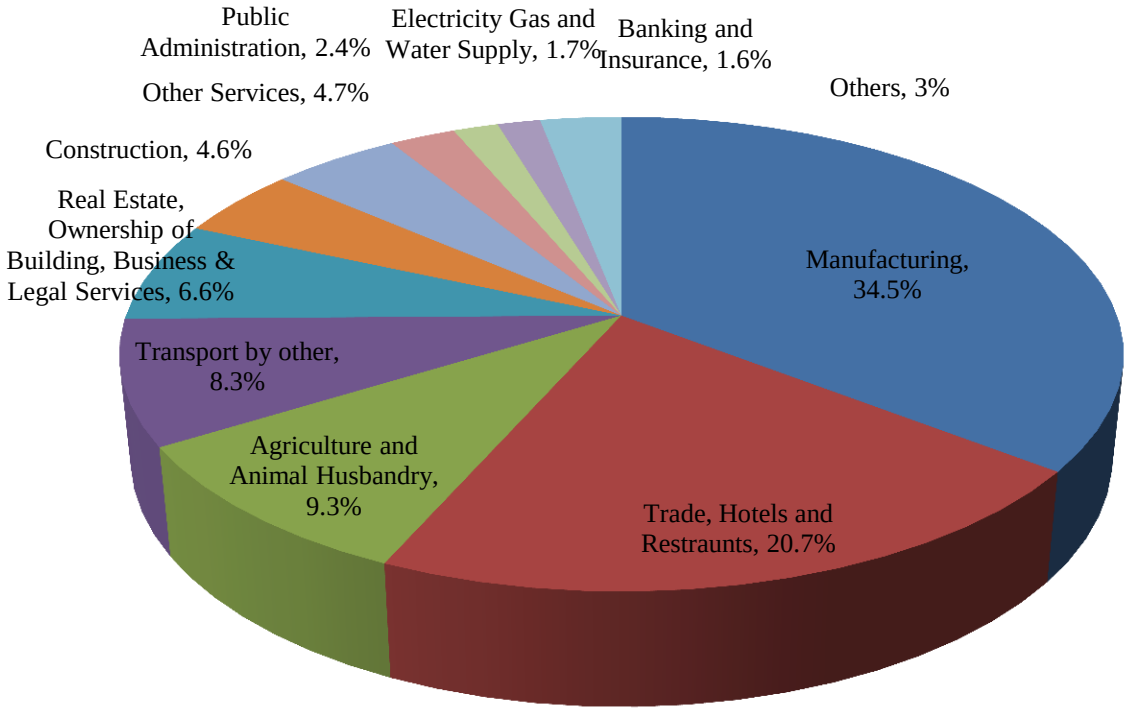
Figure 27: Gross District Domestic Product, in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 47 per cent in 2008-09. This is followed by secondary sector at 41 per cent and primary sector at 12 per cent.

Figure 28: Sector wise distribution of Bangalore Rural's GDDP, as of 2008-09, 100% = Rs 6,486.97 Crore



Source: Karnataka Department of Economics and Statistics

Agriculture: Of the total area of 2,29,519 ha in the district, 11,322 ha (5 per cent) is covered with forest, 51,102 ha (22 per cent) is not available for agriculture because of the topography, 20,004 ha (9 per cent) are pastures, groves and agricultural wastelands, 22,133 ha (9 per cent) is fallow land and 1,30,519 ha (56 per cent) is sown area. Agriculture is mainly dominated by cultivation of ragi and maize under food crops and fruits, vegetables and mulberry under commercial crops. For details of crops grown in Bangalore Rural district, refer to annexures.

Industry: As per the District at a Glance 2009-2010, Bangalore Rural district had 416 factories, employing 65,795 persons; 61 medium and large scale industries employing 19,629 persons, and 55,956 persons are employed in the associated 12,972 small scale industries. These included seven Multi-National Companies (MNCs) including companies such as PepsiCo, Jindal Aluminium, Parrys, Wrigleys, Himatsingka Seide etc. End products manufactured included auto components, food and beverages, aerospace components, logistics and warehousing services, IT, etc. Refer to annexures for details.

The district has seven industrial areas, totalling 4,595.5 acres of land, of this 3012 acres of land is available in the Nelamangala, Devanahalli and Hoskote taluka which are the major industrial hubs of the district. Seven industrial estates are also present in the district to promote small and medium industry, in a developed area of 103.4 acres of the same 173 plots have been developed and allotted. For details, refer to annexures.

Bangalore Rural district is attracting significant investments from industrial players. During the Global Investors Meet (GIM) held in 2010 in Karnataka, 103 Memorandums of Understanding (MoUs) amounting to Rs 16,988.32 crore were signed for the district. Once set up, these are estimated to employ 2,83,478 persons. For detailed status of these projects, refer to annexures.

Karnataka held its second GIM in June 2012. During this event, 96 MoUs / Expressions of Interest / Registrations of Interest happened for Bangalore Rural district alone. These have a proposed investment of Rs. 72,631 crore. These are expected to provide direct employment to over 8,90,000 persons. The interests have been signed for projects in several sectors including agro, food and horticulture; automobiles, IT, hospitality, medical tourism, aerospace, textiles and apparels, and housing. For details of these projects, refer to annexures.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 47 per cent of GDDP in Bangalore Rural district. Of all the services, the key services in the district are of 'trade, hotels and restaurants' at 20.7 per cent, 'transport and related' at 8.3 per cent, 'real estate, ownership of dwellings, business and legal services' at 6.6 per cent of GDDP, followed by other services at 4.7 per cent.

2.3. State of education

As of March 2010, Bangalore Rural district had 1,514 schools, with 145,306 students enrolled. The drop-out rate was 0.68 per cent for lower primary schools and 1.48 for higher primary schools. This is lower than the State average of 4.6 per cent for lower primary and 8.1 per cent for higher primary schools.

There are 36 pre-university (PU) colleges with 12,817 students. There are also seven general colleges, one medical college, one polytechnic (for technical education), and three engineering colleges. For details of courses offered by polytechnics, refer to annexures.

Table 26: School education infrastructure in Bangalore Rural district, as of March 2010

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Govt.	682	40403	441	18652	63	18977
Aided	0	2327	12	1108	37	9003
Unaided	16	30364	148	10221	105	12968
Others	2	160	5	480	3	643
Total	700	73254	606	30461	208	41591

Source: District Information for School Education, Karnataka, 2011-12

Table 27: Higher education infrastructure in Bangalore Rural district, as of March 2010

Colleges	No.	Students
PU Colleges	36	12817
General	7	4318
Medical (Allopathy+ISM)	1	100
Polytechnic	1	188
Engineering	3	924

Source: Bangalore Rural District At a Glance 2009-10

For vocational training, Bangalore Rural district had a total of 16 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, one was Government ITIs, one was private aided ITIs and remaining 14 were private unaided ITIs. All the 16 ITIs together have a seating capacity of 1,751.

Table 28: Key ITI indicators in Bangalore Rural district, as of March 2012

Indicator	Value
Total Number of ITIs	16
Number of Government ITIs	1

Indicator	Value
Number of Private aided ITIs	1
Number of Private unaided ITIs	14
Total Seating capacity	1751
Student pass rate	80-85%
Student drop-out rate	5%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Bangalore Rural district, we have found that on an average, of all the students that pass out from an ITI in each year, 80 per cent find jobs in the market. For details on courses offered by ITIs in Bangalore Rural, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions. The Government Departments offer courses in trades such as fitter, electrician, mechanic motor vehicle, and tool and die making, turner, welder, and electrical machinist.

The private training institutes are offering courses in teacher's training, nursing, computers, and pharmacy. For details of courses offered by private training institutes in Bangalore Rural district, refer to annexures.

2.4. Youth Aspiration

In the process of identifying the growth engines for the Bangalore Rural district, we held discussions with a youth group in the district to understand their aspirations. They key points are summarised below:

- Students from good colleges are able to get jobs in Bangalore and prefer getting placed in Bangalore only. Lure of city life and better lifestyle is high.
- ITI education is the not the first choice of most students and they are not aware of the employment opportunities after ITI
- Most students were not aware of the career path before joining the course, this has hindered their course selection criteria

- Most preferred courses in the ITI are CAD CAM engineer, Motor Vehicle Mechanic, Welding, and Fitting
- Most students aspire to earn at least Rs 10,000 after ITI education
- Courses done with the support of industry is most sought after as they assure placements
- Working level computer knowledge is aspired by students of all streams
- Working level English knowledge is also aspired, but environment for fostering the same is absent
- Students want to get employed in MNCs and companies with good brand visibility
- Most students wish to get employed in Bangalore city and suburban area
- Travel jobs including maintenance, sales and service is not preferred
- Regular employment with all the benefits prescribed by the government is preferred
- Most private ITIs have insufficient practical training infrastructure capacity, hence the skill levels attained are low
- Quality of courses and teachers is average. Quality of infrastructure is below average.

3. Developmental concerns

Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for Bangalore Rural district and this closely mirrors the Bangalore Urban district.

- **Infrastructure Bottlenecks:** Bangalore Rural district is comparatively lesser developed compared to Bangalore Urban district. This acts as a major hindrance for developmental activities in the districts. The district have multiple infrastructure issues including availability of good roads, streamlined traffic regulation, poor civic amenities, water supply and frequent power outages. Apart from above mentioned infrastructure bottlenecks a vibrant urban outlook and amenities are required to encourage establishment of industries, IT/ITES companies to start their operations in Bangalore Rural district. The government of Karnataka is ambitiously undertaking multiple projects to tackle these infrastructure issues including establishment of gas pipeline from Dhabol, setting up of metro rail facility, construction of multiple vehicle parking stations, outer ring road expansions, multiple underpasses and over bridges. With the development of Bangalore International Airport Limited (BIAL) in Devanahalli, the road infrastructure is being tremendously improved in the Devanahalli taluka of Bangalore Rural district.

- **Shortage of skilled manpower in SSIs:** Bangalore Rural district provides employment for eligible candidates from across the country. Large and medium scale industries provide better salary packages, better professional growth opportunities and good training; hence they do not have a problem in sourcing skilled manpower for their operations. The Small Scale Industry (SSI) on the other hand is struggling with availability of skilled manpower, though manpower is available in abundance. The reason for this is multitude such as, high attrition among skilled workers in SSI industry for marginal hike in salary, non availability of particularly skilled personnel (apparel manufacture), Inadequate training capacity in certain trades (such as welding, grinding, plant maintenance, food and beverage industry), migration to easier trades (such as coffee shop waiters, retailing in supermarkets), inadequate quality vocational institutes (Inadequate quality training infrastructure in private ITIs) etc.

  In addition the number of technical education institutes is less in Bangalore Rural district compared to Bangalore Urban district, with growing industrialisation there is scope for initiating more technical education institutes on in Bangalore Rural district.

SWOT analysis

Based on the diagnostics of the Bangalore Rural district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 29: SWOT Analysis of Bangalore Rural district

4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 525,350 persons is likely to be generated in Bangalore Rural district.

Majority of the jobs will be generated in IT & ITES sector, followed by agriculture and allied activities, transport, logistics and warehousing, tourism, travel and hospitality.

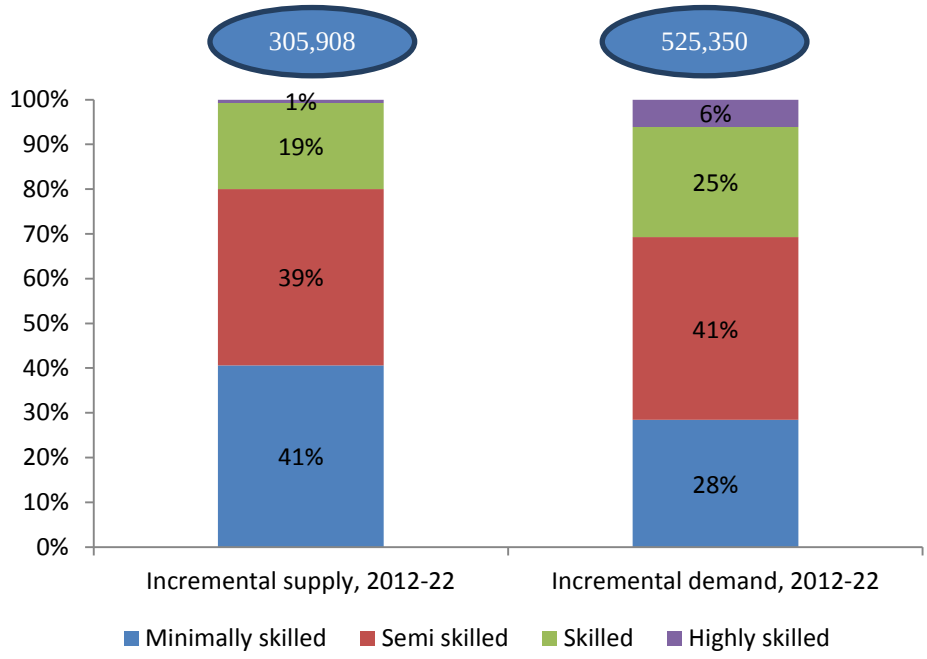
Table 29: Incremental demand in Bangalore Rural – 2012 to 2022

SECTOR	Incremental Demand - 2012 To 2017				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	18,204	15,162	2,266	412	364
Auto and Auto component	4,236	424	2,753	847	212
BFSI	4,672	-	2,803	1,402	467
Building, Construction industry and Real Estate	13,954	4,186	6,977	2,093	698
Chemicals & Pharmaceuticals	383	77	115	115	77
Construction Materials and Building Hardware	867	87	563	173	43
Education and Skill Development	7,689	-	-	6,920	769
Electronics and IT hardware	271	27	135	95	14
Food Processing	254	76	76	76	25
Furniture and Furnishings	879	352	352	132	44
Healthcare Services	7,349	-	735	5,144	1,470
IT & ITES	423,357	-	296,350	105,839	21,168
Media and Entertainment	-	-	-	-	-
Organised Retail	-	-	-	-	-
Textile and Clothing	8,892	1,778	5,335	1,334	445
Transportation, Logistics, Warehousing and Packaging	23,092	4,618	13,393	4,618	462
Tourism, Travel, Hospitality & Trade	9,149	1,830	6,221	915	183
Unorganised	2,104	421	1,220	421	42
Mining	-	-	-	-	-
Total	**525,350**	**29,037**	**339,295**	**130,537**	**26,482**

Source: IMaCS Analysis

The incremental supply of work-force between 2012 and 2022 is estimated at 305,908 persons. The supply is likely to fall short of demand given the job potential generation which the district has. People from other districts are likely to fill this gap in the district. While there is likely to be excess of human resources at the minimally skilled level, there is gap at the semi-skilled, skilled and highly skilled levels. Thus, there is a need to up-skill the people at the minimally skilled levels so that they can fill the gaps at the skilled levels.

Figure 30: Skill wise incremental demand and supply in Bangalore Rural district – 2012 to 2022



Source: IMaCS Analysis

5. Skill Mapping

Based on our field surveys in Bangalore Rural district, we have found out that sectors where skilling interventions are required are mainly agriculture and allied, hospitality, construction, pharmaceuticals, and IT/ITES. New jobs are likely to be generated in all the above mentioned sectors because Bangalore Rural being an contiguous are of Bangalore Urban district, and a high degree of industrial movement is een with growing infrastructure availability.

Table 30: Sectors present in Bangalore Urban & Rural districts – comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Bangalore Urban & Rural	Karnataka
Agriculture/Horticulture *(Bangalore Rural)*		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing *(Concentrated in Bangalore Rural)*		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution and hence there would be differential need skill up-gradation, acquisition of new skills and even speciality skills. Bangalore Urban district being the nerve centre of the State's economy, and the place where these sectors are thriving and experimenting new technologies and business processes, there is a need for all types of skills development activities.

Table 31: Level of skills required in shortlisted sectors

Sector	Specialty Skill	New Skill	Skill Upgradation
Textiles and clothing industry	√	√	√
Auto and Auto component	√	√	√

Sector	Specialty Skill	New Skill	Skill Upgradation
Banking and Financial Services Insurance	√	√	√
Building, Construction industry and Real Estate services	√	√	√
Chemicals & Pharmaceuticals	√	√	√
Education and Skill Development	√	√	√
Electronics and IT hardware	√	√	√
Food Processing	√		√
Healthcare Services	√	√	√
IT & ITES	√	√	√
Organised Retail	√	√	√
Transportation, Logistics, Warehousing and Packaging	√	√	√
Tourism, Travel, Hospitality & Trade	√	√	√
Unorganised sector	√	√	√
Agriculture/Horticulture	√		√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

Bangalore Urban district and Rural districts are contiguous with each other in terms of infrastructure availability and physical reachability. Industrial areas are being developed in both the districts and manufacturers move to either depending upon their nature of industry, proximity to supply chain and cost effectiveness. The difference in district is not felt by industrialists and the government also does not have any differential policy towards either districts. Students of both the districts are mobile and move to the other district for better education and employment. The employment and skill issues is similar in both the districts and hence the skill gap and recommendations have been done together for both the districts, this is presented in the Bangalore Urban report; recommendations specific to Bangalore Rural district have been highlighted specifically.

3.3. BANGALORE URBAN

1. Introduction

Bangalore Urban was formed as a separate district in the year 1986. It has a total land area of 2,174 sq. km., which is 1.13 per cent of the total State area. It is bordered by Bangalore Rural District on the North, and East, Ramnagara District on the West and by the Krishnagairi District of Tamil Nadu on the South.

It is sub-divided into four sub-districts and has 558 inhabited villages. Majority of the population at 90.93 per cent lives in urban areas. Manufacturing and Services are the major occupational categories in Bangalore Urban district, the remaining is in household industry and other workers category.

The Bangalore Urban district houses the Bengaluru City which is the capital of Karnataka and is the largest contributor to the state economy with 33.8 per cent of the GSDP (2008-09). Aptly called as the Silicon Valley of India, Bangalore Urban district is the country's leading IT exporter, employing nearly 35 per cent of the IT/ITES workforce of the country. Bangalore has the biggest bio technology cluster in India with 137 units which is 40 per cent of the total units in the country. Leading bio technology and pharmaceutical firms in Bengaluru Urban District (BUD) include Biocon, Astra Zeneca, Avesthagen, British Biologicals, Essilor India, Bio-Gen Extracts, Jubiliant Biosys, Millopore India Ltd, Novo Nordisk India, Siemens Hearing Instruments, Himalaya Drug company, etc.

Bangalore Urban district is also teeming with manufacturing clusters including Peenya, Whitefield, Bommasandra, Jigani, Attibele, Kadugodi-Sadaramangala etc. Peenya is the largest industrial cluster in Asia with 5000+ Medium, Large and Small Scale industries employing more than five lakh people. Some of the prominent manufacturing companies in Bangalore Urban District are Bosch, L&T Komatsu, Kirloskar, Escorts, Avasarulu Automotions, BHEL, BEML, BEL, HMT, Huwaei Technologies, GE, Airbus Engineering Centre, Himatsingka Seide, Ace Micromatic Group, etc.

Bangalore is also emerging as the Aerospace hub of India, India's only aircraft manufacturer HAL is located in Bengaluru and four of its six R&D centres are in located in BUD. An Aerospace SEZ spreading over 250 acres has been established near Bengaluru International Airport. Other notable aerospace industries located in BUD are DRDO, ISRO, National Aerospace Laboratory, Antrix, ADA, Airworks India Engineering, Quest Global, Mahindra Aerospace, Avembsys, International Aerospace Manufacturing Pvt. Ltd, Honeywell Technology solutions etc.

BUD also houses several R&D institutions owing to the ready availability of quality manpower, some of the major R&D houses in BUD are GE, Philips Innovation campus, Microsoft Research, IBM, Free Scale Semiconductors, Infineon India, Intel India, Nokia, Panasonic, Samsung Electronics, Delta India Electronics, etc.

Apart from manufacturing and services, the Bangalore Urban district is also involved in considerable agricultural production of Paddy, Maize, Rice, Horse gram, oil seeds, Banana, Grapes, Pomegranates, and Papaya; Aneka Taluka of Bangalore Urban is called as the Ragi bowl of the state. The district also enjoys a considerable reputation in food processing, companies such as Pepsico India, Britannia, Parle, Wrigleys, United Breweries etc are located in BUD.

Table 32: Comparison of Banglaore Urban district with Karnataka – key indicators

Indicator	Year	Bangalore Urban	Karnataka
Area, in sq.km.	2001	2,174	191,791
Percentage share in State geographical area	2001	1.13 per cent	100 per cent
No. of sub-districts	2011	4	175
No. of inhabited villages	2001	558/589	27,481
No. of households	2001	1,460,697	10,401,918
Forest area as a per cent of total geographical area	2001	0.16 per cent	13.9 per cent

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, BU district has a population of 95.8 lakh persons – 15.6 per cent of the State population. Majority of the population (90 per cent) is concentrated in Bengaluru City, followed by Anekal, Bangalore North, Bangalore South and Bangalore East sub districts. While 69.14 per cent of the population in the district is in working-age group (15 to 64 years), about 39.3 per cent is actually working i.e. work participation rate.

The district's literacy rate is 88.48 per cent, which is considerably higher than the State average of 75.6 per cent, and All-India average of 74 per cent. Male literacy at 83 per cent is significantly higher than female literacy rate at 76 per cent. Of the 30 districts, BUD ranks 1st in the Human development Index in the state of Karnataka with a value of 0.753 against a state average of 0.65, similarly it ranks 1st on Gender Development Index (GDI), with a value of 0.731 against state average of 0.637.

Most of the population (90+ per cent) lives in urban areas. In fact, as mentioned earlier, manufacturing and services is the main occupation of the people of the district, employing 90 per cent of the labour force. The district also has a huge inflow of migrating population from other districts of the State and from the country owing to the opportunities created.

Table 33: Key demographic indicators

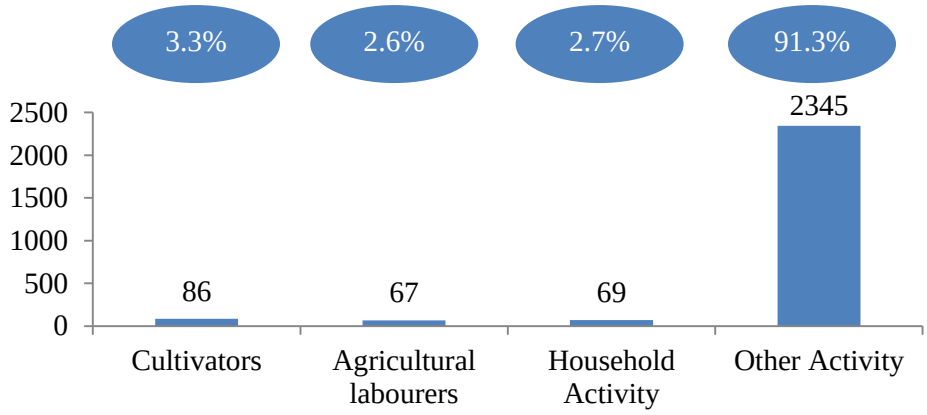
Indicator	Year	Bangalore Urban	Karnataka
Population, No.	2011	9,588,910	61,130,704
Decadal growth rate of population, per cent	2001-11	31.8 per cent	15.7 per cent
District's share in State's population, per cent	2011	15.6 per cent	100 per cent
Urban population as a percentage of total population, per cent	2011	90.93 per cent	34 per cent
SC population, per cent	2001	13 per cent	16.0 per cent
ST population, per cent	2001	1.3 per cent	7.0 per cent
Sex ratio, No. of females per 1000 males	2011	908	968
Population density, per sq. km.	2011	4410	319

Indicator	Year	Bangalore Urban	Karnataka
Literacy rate, per cent	2011	88.48 per cent	75.6 per cent
Main workers, No.	2001	2,378,180	19,364,759
Marginal workers, No.	2001	188,734	4,170,032
Working age population* as a percentage of total population, per cent	2001	69.14 per cent	63 per cent
Work participation rate^, per cent	2001	39.3 per cent	45 per cent
HDI	2001	0.753	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*
Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

As per the 2001 census the district has a total workforce of about 25.7 lakh persons. Of this, 3.3 per cent are cultivators, 2.6 per cent are agricultural labourers, 2.7 per cent are workers in household industry and 91.3 per cent are engaged in manufacturing, services and other workers.

Figure 31: Bangalore Urban district's worker profile, as of 2011, in thousands

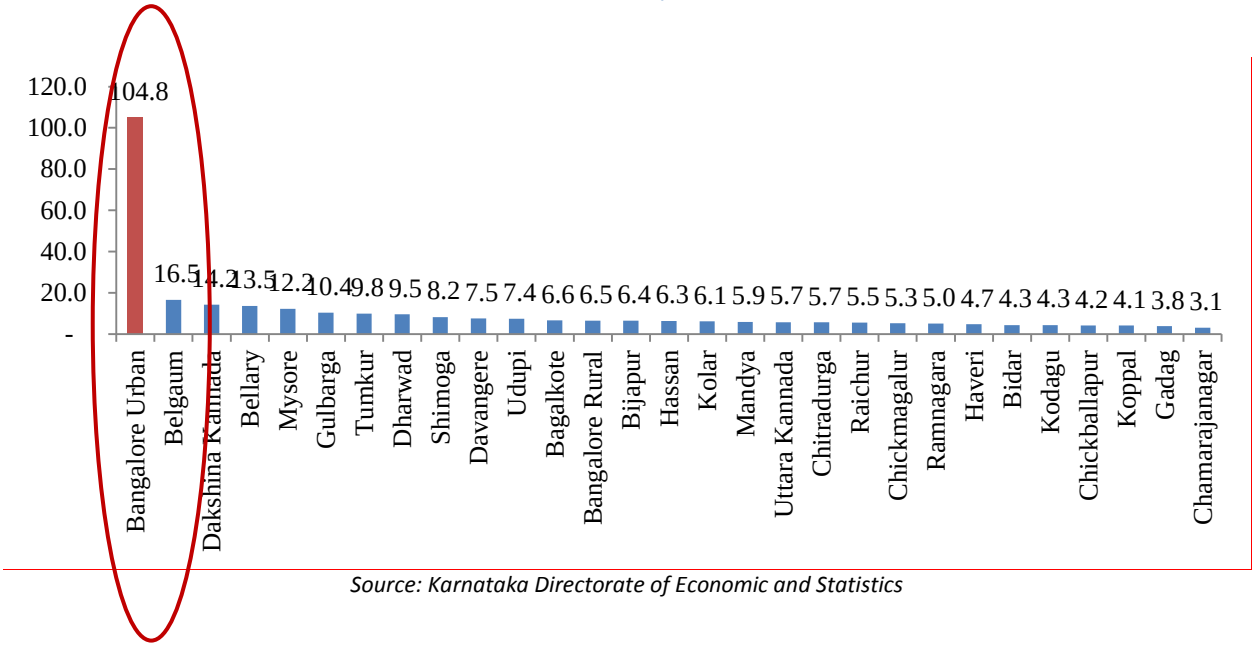


HHI: Household Industry
Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, BU district had the largest Gross District Domestic Product (GDDP) in Karnataka at Rs 1,04,811.5 crore (34 per cent of the Gross State Domestic Product). In terms of per capita GDDP it is ranked 1st amongst 30 districts at Rs 1,46,283, this is considerably higher than the State average of Rs 53,101.

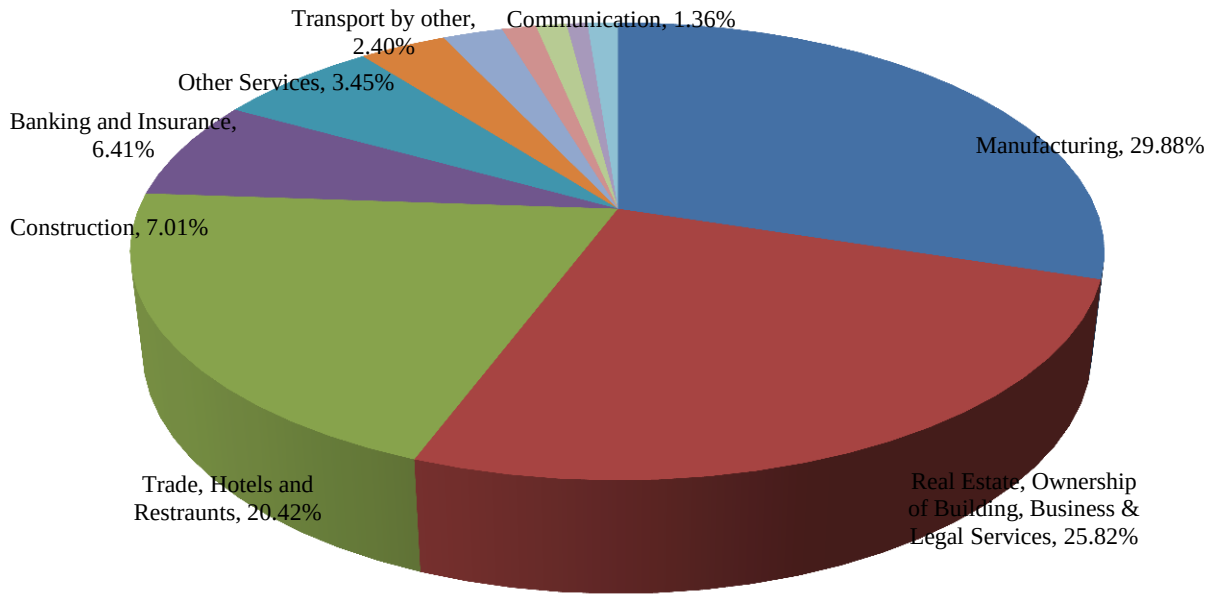
Figure 32: Gross District Domestic Product, in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 61.2 per cent in 2008-09. This is followed by secondary sector at 37.7 per cent and primary sector at 1.2 per cent.

Figure 33: Sector wise distribution of Bangalore Urban's GDDP, as of 2008-09, 100 per cent = Rs 1,04,811.5.64 rore



Source: Karnataka Directorate of Economics and Statistics

Agriculture: Of the total area of 2,17,410 ha in the district, 5,055 ha (2.3 per cent) is covered by forests, 1,15,436 ha (53.1) is classified as non agricultural land, 90,928 ha (41.8 per cent) as agricultural land and the remaining (2.8 per cent) as other uncultivated land. Over 58 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of ragi and paddy under food crops and oil seeds and fruits under commercial crops. For details of crops grown in BU district, refer to annexures. (Data Source BU District at a Glance 2009-10)

Industry: As per the District at a Glance 2009-10, Bangalore Urban district had 411 large and medium scale industrial units, in multiple sectors. These included Multi-National Companies (MNCs) and Indian Multinationals including companies such as IBM, GE, Philips, Infosys, Wipro, Biocon, Ace Designers, L&T Komatsu, UB etc (Refer to annexures for complete list). End products manufactured included auto components, castings, electrical motors, textiles, food and beverages, pharmaceuticals, biotechnology products, aerospace components, perfumes, flavours, chemicals, metal components etc.
Bangalore Urban also has 74,282 Small Scale Industries (SSIs), employing 690,972 persons, during 2010-2011, Rs 41,213 crores were invested in Small Scale Industries in Bangalore Urban.

The district has fifteen industrial areas, totalling 6,783.5 acres of land. The district also has fifteen industrial estates, of this, 347 plots of land has been allotted so far. For details, refer to annexures.

Bangalore Urban district is attracting significant investments from industrial players. During the Global Investors Meet (GIM) held in 2010 in Karnataka, thirty six Memorandums of Understanding (MoUs) amounting to Rs 5742.6 crore were signed for the district. Once set up, these are estimated to employ 91,326 persons. For detailed status of these projects, refer to annexures.

Karnataka held its second GIM in June 2012. During this event, 86 MoUs / Expressions of Interest / Registrations of Interest happened for BU district alone. These have a proposed investment of Rs. 79,681 crore. These are expected to provide direct employment to over one lakh persons. The interests have been signed for projects in several sectors including agro, food and horticulture; automobiles, cement and other minerals, energy, textiles and apparels, and hotels. For details of these projects, refer to annexures.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 61.2 per cent of GDDP in BU district. Of all the services, the key services in the district are of 'real estate, ownership of dwellings, business and legal services' at 25.82 per cent of GDDP, followed by hotels and restaurants at 20.2 per cent, banking and insurance 6.41 percent and other services at 3.45.

2.3. State of education

As of March 2010, BU district had 6,246 schools, with 13,27,719 students enrolled. The drop-out rate was 1.48 per cent both for lower and higher primary schools, this is lower than the State average of 4.6 per cent for lower primary and 8.1 per cent for higher primary schools.

There are 503 pre-university (PU) colleges with 1,74,034 students. There are also 65 general colleges, 16 medical colleges, 60 polytechnics (for technical education), 63 engineering colleges and sixteen dental colleges. For details of courses offered by polytechnics, refer to annexures.

Table 34: School education infrastructure in Bangalore Urban district, as of March 2010

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Govt.	682	122192	716	49331	134	45683
Aided	42	75456	366	36421	267	78848
Unaided	269	500592	2045	174570	1607	212582
Others	10	13573	45	5225	59	13226
Total	1007	711813	3172	265547	2067	350359

Source: District Information for School Education, Karnataka, 2011-12

Table 35: Higher education infrastructure in Bangalore Urban district, as of March 2010

Colleges	No.	Students
PU Colleges	503	174034
General	65	56133
Medical (Allopathy+ISM)	16	2867
Polytechnic	60	12675
Engineering	63	243616
Dental	16	1060

Source: Bangalore Urban District At a Glance 2009-10

For vocational training, BU district had a total of 83 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, six were Government ITIs, 10 were private aided ITIs and remaining 67 were private unaided ITIs. All the 83 ITIs together have a seating capacity of 11,101.

Table 36: Key ITI indicators in Bangalore Urban district, as of March 2012

Indicator	Value
Total Number of ITIs	83
Number of Government ITIs	6
Number of Private aided ITIs	10
Number of Private unaided ITIs	67
Total Seating capacity	11101
Student pass rate	80-85 per cent
Student drop-out rate	5 per cent

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Bangalore Urban district, we have found that on an average, of all the students that pass out from an ITI in each year, 70 per cent find jobs in the market. For details on courses offered by ITIs in Bangalore Urban, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions. The Government Departments offer courses in trades such as machinist, tool room training, instrumentation, pattern making, diesel mechanic, foundry, welding, sheet metal working, chemical plant operator, CNC, apparel manufacturing, vocational training, motor driving, computers etc.

The private training institutes are offering courses in teacher's training, nursing, physiotherapy, computers, Ayurveda and pharmacy. For details of courses offered by private training institutes in Bangalore Urban district, refer to annexures.

2.4. Youth Aspiration

In the process of identifying the growth engines for the Bangalore Urban district, we held discussions with a youth group in the district to understand their aspirations. They key points are summarised below:

- Students from good colleges are able to get jobs in Bangalore and prefer getting placed in Bangalore only. Lure of city life and better lifestyle is high.
- Students, who are not able to get admissions in good colleges, prefer ITIs. The latter are also preferred because ITI certification helps in obtaining Government and even private jobs. The low fee is an added advantage.
- Most preferred courses in the ITI are CAD CAM engineer, Motor Vehicle Mechanic, Welding, Fitting, and Refrigeration and Air Conditioning
- Most students were not aware of the career path before joining the course, this has hindered their course selection criteria
- Students from rural areas are more motivated to study and perform than students from urban Bangalore
- Courses done with the support of industry is most sought after as they assure placements
- Working level computer knowledge is aspired by students of all streams
- Working level English knowledge is also aspired, but environment for fostering the same is absent
- Students want to get employed in well recognised and well known companies
- Most students wish to get employed in Bangalore city and suburban area
- Travel jobs including maintenance, sales and service is not preferred
- Regular employment with all the benefits prescribed by the government is preferred
- Most private ITIs have insufficient practical training infrastructure capacity, hence the skill levels attained are low
- Quality of courses and teachers is average. Quality of infrastructure is below average.

3. Developmental concerns

Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the Bangalore Urban and Bangalore Rural:

- **Infrastructure Bottlenecks:** The districts have multiple infrastructure issues including availability of good roads, streamlined traffic regulation, poor civic amenities, water supply and frequent power outages. During an ASSOCHAM study conducted in 2011, 55 per cent of the IT companies preferred to relocate out of Bangalore for want of better urban infrastructure. The government of Karnataka is ambitiously undertaking multiple projects to tackle these infrastructure issues including establishment of gas pipeline from Dhabol, setting up of metro rail facility,

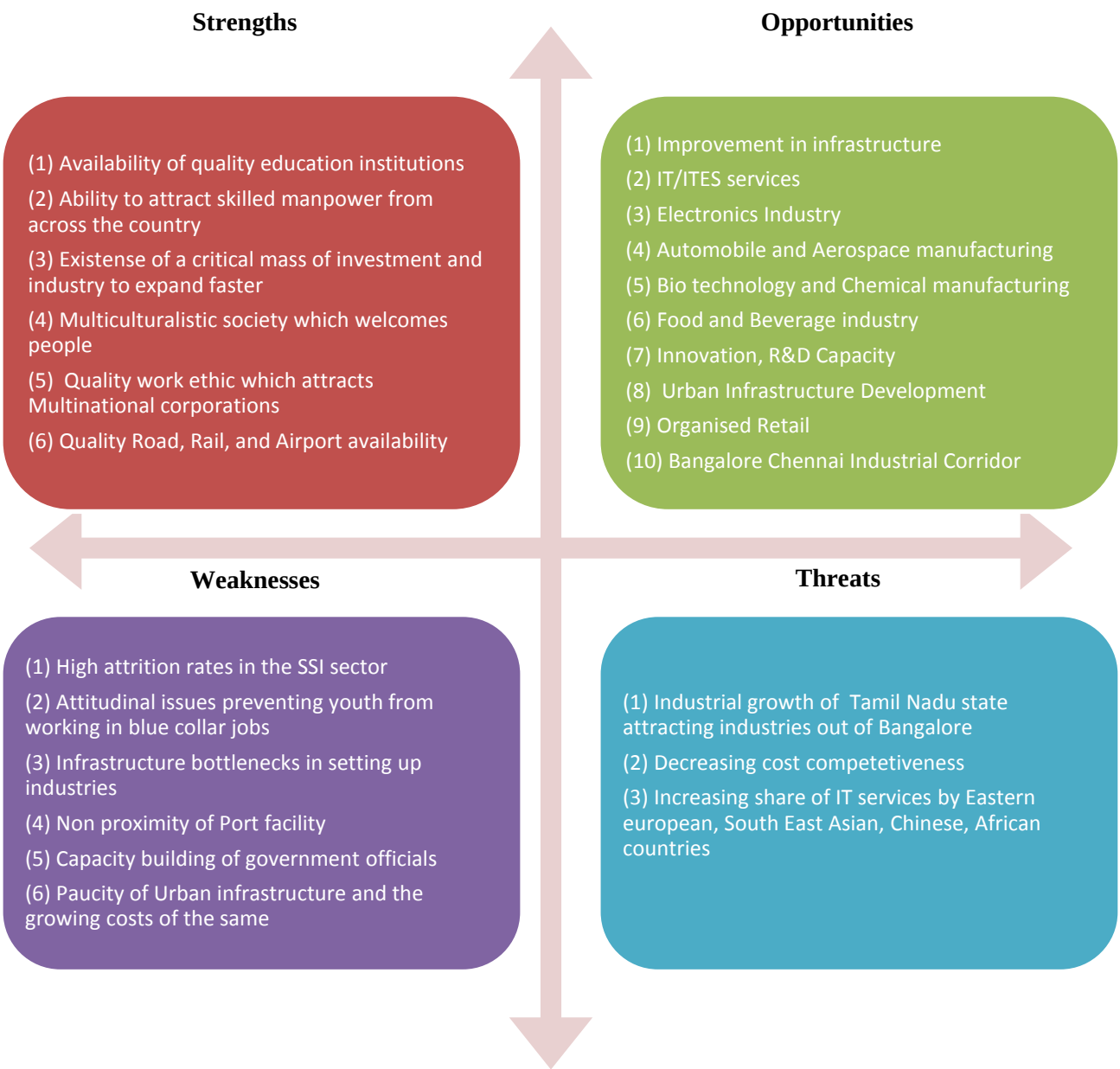
construction of multiple vehicle parking stations, outer ring road expansions, multiple underpasses and over bridges.

- **Shortage of skilled manpower in SSIs:** Bangalore Urban district provides employment for eligible candidates from across the country. Large and medium scale industries provide better salary packages, better professional growth opportunities and good training; hence they do not have a problem in sourcing skilled manpower for their operations. The Small Scale Industry (SSI) on the other hand is struggling with availability of skilled manpower, though manpower is available in abundance. The reason for this is multitude such as, high attrition among skilled workers in SSI industry for marginal hike in salary, non availability of particularly skilled personnel (apparel manufacture), Inadequate training capacity in certain trades (such as welding, grinding, plant maintenance, food and beverage industry), migration to easier trades (such as coffee shop waiters, retailing in supermarkets), inadequate quality vocational institutes (Inadequate quality training infrastructure in private ITIs) etc.

SWOT analysis

Based on the diagnostics of the Bangalore Urban district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 34: SWOT Analysis of Bangalore Urban district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 18,44,200 persons is likely to be generated in Bangalore Urban district.

Key sectors driving employment will be IT&ITES, building, construction and real estate, tourism, travel, hospitality and trade, and organised retail.

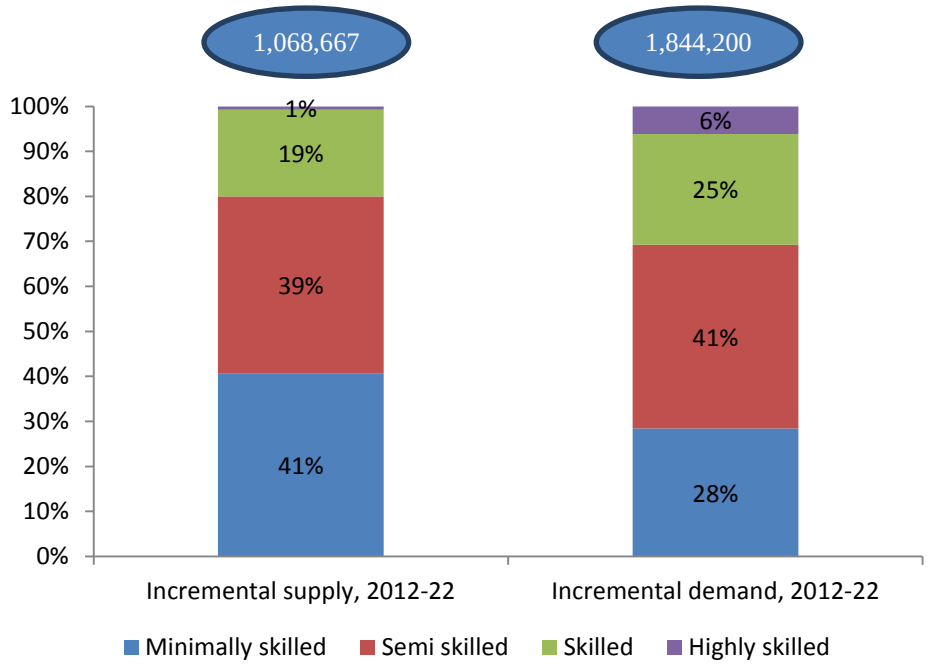
Table 37: Incremental demand in Bangalore Urban – 2012 to 2022

SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	19,498	16,239	2,427	442	390
Auto and Auto component	9,150	915	5,948	1,830	458
BFSI	63,820	-	38,292	19,146	6,382
Building, Construction industry and Real Estate	344,281	103,284	172,141	51,642	17,214
Chemicals & Pharmaceuticals	2,535	507	761	761	507
Construction Materials and Building Hardware	21,381	2,138	13,898	4,276	1,069
Education and Skill Development	39,684	-	-	35,716	3,968
Electronics and IT hardware	12,039	1,204	6,019	4,214	602
Food Processing	2,571	771	771	771	257
Furniture and Furnishings	12,316	4,927	4,927	1,847	616
Healthcare Services	73,906	-	7,391	51,734	14,781
IT & ITES	618,091	-	432,663	154,523	30,905
Media and Entertainment	68,052	13,610	40,831	10,208	3,403
Organised Retail	194,816	19,482	136,371	29,222	9,741
Textile and Clothing	75,102	15,020	45,061	11,265	3,755
Transportation, Logistics, Warehousing and Packaging	131,162	26,232	76,074	26,232	2,623
Tourism, Travel, Hospitality & Trade	96,878	19,376	65,877	9,688	1,938
Unorganised	58,918	11,784	34,173	11,784	1,178
Mining	-	-	-	-	-
Total	**1,844,200**	**235,490**	**1,083,624**	**425,301**	**99,786**

Source: IMaCS Analysis

The incremental supply of work-force between 2012 and 2022 is estimated at 10,68,667 persons. This supply would be well short of the demand especially in the semi skilled category across all the sectors.

Figure 35: Skill wise incremental demand and supply in Bangalore Urban district – 2012 to 2022



Source: IMaCS Analysis

5. Skill Mapping

Based on our field surveys in Bangalore Urban district, we have found out that sectors where skilling interventions are required are mainly in Auto and auto components, building construction, IT/ITES, healthcare services, organised retail, transporatation and logistics, hospitality, and media and entertainment. New jobs are likely to be generated in all the sectors owing to the fact that Bangalore Urban district is the leading contributor to the GSDP and the primary preference for most industries. Howerver the district would attract manpower from across the state and country in all categories of employment as it is a cosmopolitan city and skill is provided precedence over other factors.

Table 38: Sectors present in Bangalore Urban & Rural districts – comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Bangalore Urban & Rural	Karnataka
Agriculture/Horticulture *(Bangalore Rural)*		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing *(Concentrated in Bangalore Rural)*		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution and hence there would be differential need skill up-gradation, acquisition of new skills and even speciality skills. Bangalore Urban district being the nerve centre of the State's economy, and the place where these sectors are thriving and experimenting new technologies and business processes, there is a need for all types of skills development activities.

Table 39: Level of skills required in shortlisted sectors

Sector	Specialty Skill	New Skill	Skill Upgradation
Textiles and clothing industry	√	√	√
Auto and Auto component	√	√	√
Banking and Financial Services Insurance	√	√	√
Building, Construction industry and Real Estate services	√	√	√
Chemicals & Pharmaceuticals	√	√	√
Education and Skill Development Services	√	√	√
Electronics and IT hardware	√	√	√
Food Processing	√		√
Healthcare Services	√	√	√
IT & ITES	√	√	√
Media and Entertainment	√	√	√
Organised Retail	√	√	√
Transportation, Logistics, Warehousing and Packaging	√	√	√
Tourism, Travel, Hospitality & Trade	√	√	√
Unorganised sector	√	√	√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

Bangalore Urban district and Rural districts are contiguous with each other in terms of infrastructure availability and physical reachability. Industrial areas are being developed in both the districts and manufacturers move to either depending upon their nature of industry, proximity to supply chain and cost effectiveness. The difference in district is not felt by industrialists and the government also does not have any differential policy towards either districts. Students of both the districts are mobile and move to the other district for better education and employment. The employment and skill issues is similar in both the districts and hence the skill gap and recommendations have been done together for both the districts, this is presented in the Bangalore Urban report; recommendations specific to Bangalore Rural district have been highlighted specifically.

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Auto, Auto Components and Aerospace Components

Bangalore urban district is clustered with auto anciliary industry owing to its rich heritage of engineering and manufacturing industry. These auto anciliary industries supports the automotive Original Equipment Manufacturers (OEM) and auto manufacturers such as Volvo, Honda, Mahindra Reva, TVS Delhi, Toyota Kirloskar, Tata Marcopolo, located in the districts of Bangalore Rural, Mysore, Ramnagara, Kolar and Dharwad. In addition to this they also provide their service to the auto companies located out of Chennai including Hyundai, Ford, Mahindra, Hindutan, Nissan, BMW etc. These auto anciliary industries apart from servicing the auto industry are also working with Aerospace industry, general manufacturing, commercial goods, machine tools, electrical industry etc.

Some of the leading companies in Aerospace technologies whom the anciliary industry supports are Hindustan Aeronatics Limited (HAL), Defence Research and Development Organisation (DRDO), Quest Global, Airbus, Boeing, European Aeronautic Defence and Space Company (EADS), Voith GmbH, BAE Systems, Taneja Aerospace and Aviation Ltd (TAAL) etc. The service functions/operations in an auto component industry and aerospace components industry will be broadly similar including machining, fitting, welding, forming, forging, component assembly etc, but they are governed by different set of industry guidelines.

Figure 36 Segments of Auto components and Aerospace components Industry

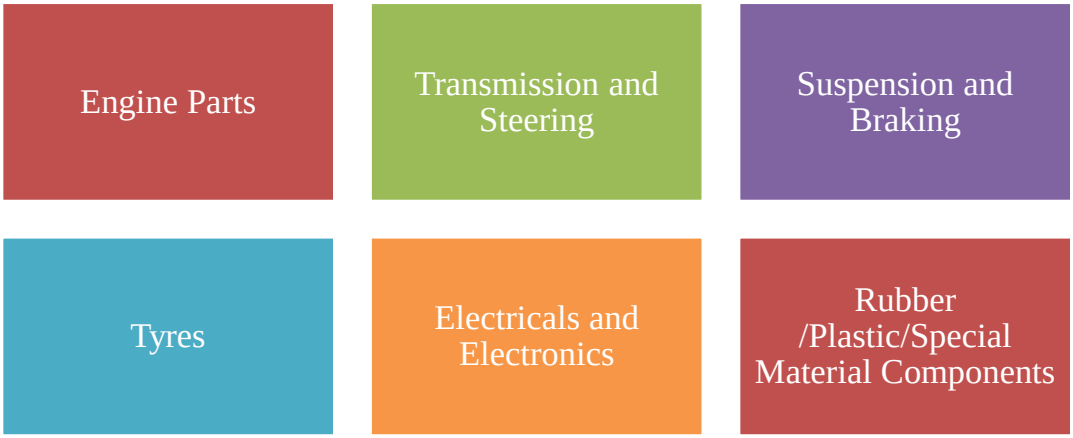


Figure 37 Sample Auto Components Manufactured

As a part of Auto anciliary sector we have also included after sales and service of two wheelers and four wheelers, Bangalore Urban District has more than 60 new car dealerships, and 100 new two wheeler dealerships; and this number is on the rise. This apart there are several-used car and two wheeler dealership which offer sales, service and resale works; this sector also provides tremendous employment opportunities for the aspiring youth. Several ITIs in Bangalore offer MMV (Mechanic Motor Vehicle) as a part of their training course.

The skill gaps of the work profiles which offer majority of the employment in auto components and aero components industry is listed below,

Table 40: Skill gaps in Auto Components and Aerospace Components Industry

Role, educational qualification	Expected competency	Skill gaps
Manager / supervisor /	• Ability to communicate between departments	• Insufficient understanding of the process

Role, educational qualification	Expected competency	Skill gaps
floor in-charge (Graduate Engineer/ Experienced Diploma)	• Technical know how of the production line • Comprehend and Teach the Standard Operating Procedures (SOPs) • Quality Inspection • Ability to supervise • Production and Productivity Management • Materials management • Resource management • Knowledge of TS 16949 standard for automobile industry • Knowledge of AS9000, AS9100 and other standards for aerospace industry • Knowledge of JIT, Kanban, JIT, production cell, ISO 9001:2008 and other quality concepts • Conflict resolution and knowledge of labour laws • Analytical problem solving techniques	• Limited knowledge in quality requirements and international standards • Insufficient ability to co-ordinate activities within and between production lines and departments • Inadequate knowledge of materials and resource management • Inadequate knowledge of labour laws
Operators / (Turner/Machinist - ITI)	• Machine tool knowledge • Preliminary machine tool maintenance knowledge • Reading and comprehension of drawings • Materials knowledge • Knowledge of quality management and control • Ability to adapt between multiple machine tools • Communication knowledge	• Inadequate knowledge in understanding geometry, dimensions, and tolerances • Inadequate materials knowledge • Inadequate knowledge of quality control • In sufficient instrumentation knowledge • Limited knowledge of machine

Role, educational qualification	Expected competency	Skill gaps
	• Conformation to work schedule, production and productivity targets • Adherence to company policies and HR guidelines	tool maintenance • Conformance to HR guidelines including time management, attendance, cleanliness, work place neatness etc
Operator/ (Welder - ITI)	• Knowledge of welding types and skill in the same • Knowledge of fluxes, techniques of welding, metal flow • Materials knowledge • Usage of cranes and other support equipments • Geometry and dimensioning • Destructive and Non Destructive testing of welds • Adherence to company policies and HR guidelines	• Inadequate technical knowledge • Knowledge of dimensioning and tolerances • In sufficient understanding of weld testing techniques • Inadequate quality concepts • Conformance to HR guidelines including time management, attendance, cleanliness, work place neatness etc
Operator/ (Fitter - ITI)	• Knowledge of fitting, dimensioning and tolerancing • Understanding of SOPs in assembly and fitting • Understanding of drawing and assembly • Instrumentation knowledge • Quality inspection • Usage of cranes and related suppor equipments • Adherence to company policies and HR guidelines	• Inadequate comprehension of assembly/fitting SOP • Inability to use the machine tools for assemble • Inadequate quality inspection methods • Conformance to HR guidelines including time management, attendance, cleanliness, work place neatness etc

Role, educational qualification	Expected competency	Skill gaps
Operator/ (Quality Inspection – Diploma/Experienced ITI)	• Knowledge and skill of quality inspection techniques and technologies • Instrumentation knowledge • Dimensioning and tolerancing • Reading and comprehension of drawings • Report production on quality inspection • Knowledge of quality control tools and preliminary knowledge of statistical tools • Knowledge of quality standards for the industry • Adherence to company policies and HR guidelines	• Inadequate quality inspection knowledge • Limited knowledge in using multiple quality control equipments and tools • Inadequate understanding of the quality standards of the industry • Inadequate comprehension of drawings, dimensioning and tolerancing
Operator/ (Tool room – Diploma/ITI)	• Knowledge of jigs, fixtures and tools • Tool development knowledge • Knowledge of dimensioning, tolerancing and drawing interpretation and creation • Design knowledge • Materials knowledge • Calibration and usage of guauges • Adherence to company policies and HR guidelines	• Inadequate knowledge of quality management • Clarity in comprehending dimensions, tolerancing and drawings • Limited knowledge or latest material forming/machining techniques
Executive (Materials Management – Graduate/Diploma/ITI)	• Knowledge of inventory management and material management • Co ordination between different agencies for procurement • Inter departmental co ordination for flow of material, information and money • Adherence to company policies and HR	• Limited understanding of materials and their properties • Inadequate knowledge in material handling • Limited soft skills • Limited negotiation skills

Role, educational qualification	Expected competency	Skill gaps
	guidelines	
Design and Development/ Product development and Industrial Engineering/Technical services (Engineering Degree/ Experienced Diploma)	• Convert the customers requirements in realisable designs • Understand specifications and norms required • Producing designs which are supply chain, logistics, manufacturing, assembly, service and maintenance friendly	• Inadequate understanding of the customer requirements • Inadequate materials knowledge
Sales and Marketing (Graduate/Engineering Degree/ Experienced Diploma)	• Understand and comprehend the technical requirements • Communication knowledge • Ability to maintain a working relationship • Negotiation skills • Adherence to delivery schedules and timelines	• Inadequate understanding of the technical requirements • Inability to understand the criticality of technical and delivery deadlines • Inadequate communication skills
Service (Diploma as supervisor / ITI as service person)	• Indepth knowledge of the operation of the equipment/assembly/component • Technical knowledge of the materials, geometry and failure modes • Ability to provide feedback • Understanding and communicating the defects and customer management	• Inability to identify the problems in operation of the equipment/assembly/compone n • Inadequate ability to understand the criticality of the role played by their component in the overall system design

Source: IMaCS Analysis

The skill gaps of the work profiles which offer majority of the employment in new/used auto dealership and service industry is listed below,

Role, educational qualification	Expected competency	Skill gaps
Sales executive (Graduates/ Diplomas)	• Ability to interact with customers and identify their needs • Ability to keep track with competitive offereings in the industry • Co ordinate between departments to enable smooth sales • Penchance for sales and pleasing deamanour while interacting with the customer • Excellent communication and negotiation skills • Good interpersonal and relationship management skills	• Inability to understand the customer requirements • Inadequate product knowledge • Inadequate communication skills • Inadequate sales skills
Purchase facilitation (Graduate/Diploma/ITI)	• Ability to co-ordinate with RTO and ensure timely registration formalities • Knowledge of working with insurance companies and the technical knowledge relating to the same • Ability to scrutinise papers submitted by customers and highlight any gaps	• Inability to process the customer documents due to Inadequate knowledge • Inadequate communication skills
Spares management (Graduate/Diploma/ITI)	• Maintenance of optimum spares as per the company norms and policies • Inventory management of the stores • Quality management of stored inventory • Ability to cross sell and up sell	• Inablity to convert the sales • Inadequate inventory management skills • Inadequte communication skills

Role, educational qualification	Expected competency	Skill gaps
Service Manager / Service Advisor (Graduate Engineer/ Experienced Diploma)	• Diagnose the problems faced by the vehicle and provide job cards and suggestions • Being up to date with the changing vehicle design and the technical details • Keep the turn around time low and service the customers at the least time possible • Spares and components management • Customer complaint and suggestion management • Employee management skills	• Inability to diagnose the problems of the vehicle • Inadequate general failiure mode analysis techniques • Weak interpersonal skills • Weak communication skills
Service Supervisor (Diploma)	• Understanding of customer complaints and diagnosis of the vehicle to identify the problems faced • Work allocation and guidance of service mechanics • Understanding the mechanics of the assembly/component/part and ability to advice the type of repair/replacement/warranty required • Communication skills	• Limited employee management skills • Limited understanding of the vehicle dynamics • Poor communication and supervisory skills
Mechanics (ITI)	• In depth understanding of the working and mechanics of the vehicle • Ability to identify the fault quickly • Ability to follow job cards • Understanding the the technicalities of the assemblies and operation based on that • Work place management skills	• Inadequate vehicle and parts knowledge • Inadequate safety management and workspace management • Tendency to rely on judgements rather than specific tools/instruments

5.2. Textile and Clothing

As of March 2010, Bangalore U district had 499 textiles based SSIs, employing 16,631 workers. This was the second highest number of units and employment under SSI category in Bangalore Urban District. While silk weaving is popular in Bangalore Rural district, ready made garment manufacturing is popular and wide spread in Bangalore. Some of the leading organisations in Bangalore are, Mafathlal, Arvind mills, Gokaldas, Camelia Clothing, Super threads, Himatsingka Seide, Shahi export house, Madura coats, Adonis Inc etc. This apparel industry is concentrated in

1. Bommanahalli
2. Bommasandra
3. Peenya
4. Yashwantpur
5. Rajaji Industrial Estate and Industrial Town

The products manufactured in these apparel companies include,

1. Ladies – Jackets, blouses, chooridhar, petti coats, innerwear
2. Gents – Jackets, trousers, shirts, innerwear, T Shirts

The enabling factors for this industry includes,

1. Accessibility to raw materials from Salem, Erode, Coimbatore, Ahmedabad
2. Availability of skilled labour – labour pool has been unofficially trained over the years fom districts around
3. Infrastructural facility – Linkages with Chennai port, international air lifting facility etc
4. Flexible specialisation – Excellent market linkages in terms of subcontractors which enables flexible changes in production schedule and product
5. Entrepreneurship – Most of these units have been started by entrepreneurs from across the country and by ex staff of popular apparel houses

Figure 248 given below explains the value chain of the textile and clothing industry. Of the entire value chain, only the circled part (Silk and garments) exists in Bangalore Urban district. Within the garments industry, the value chain followed in Bangalore Urban district is given in Figure 7 below.

Figure 38: Value chain in textiles and clothing industry

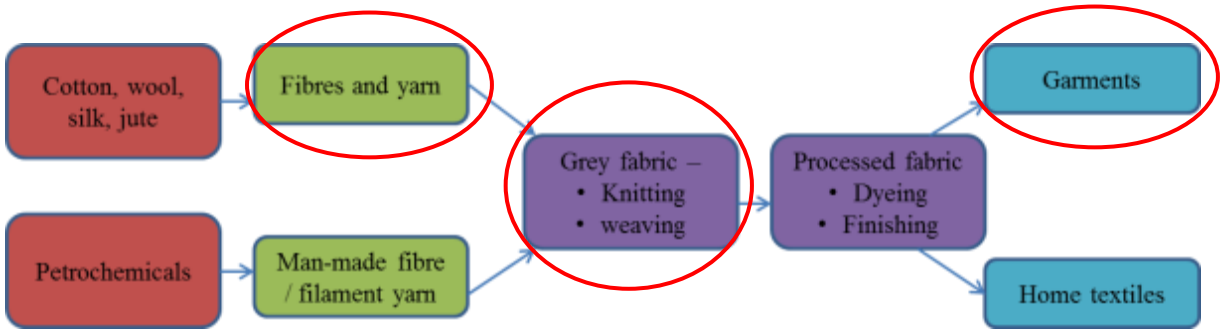


Figure 39 Process flow of apparel manufacture industry

Table 41: Skill gaps in textiles and clothing in Bangalore Urban District

Role, educational qualification	Expected competency	Skill gaps
Supervisor (Graduate and/or experienced)	▪ Managing all the facilities and the functioning of the work-force. ▪ Supervising of the work conducted by operators / tailors ▪ Knowledge of stitching process ▪ Quality check	▪ Inadequate formal education for skilled supervisors ▪ High investment in training and development ▪ Quality control skills ▪ High attrition of skilled

Role, educational qualification	Expected competency	Skill gaps
	▪ People management ▪ Leadership skills ▪ Soft skills	supervisors
Operators / tailors (illiterate to 10th pass)	▪ Proficiency in tailoring / stitching is required for stitching garments with different specifications. ▪ Good machine control – knowledge of threading of sewing machine, stitching on different shapes, seaming garment components together in various fabrics to specified quality standard ▪ Knowledge of machine maintenance procedures ▪ Knowledge of pattern making, grading and draping ▪ Ability to understand instructions properly and stitch the garments based on them. ▪ Ability to work in teams / inter-personal skills. ▪ Soft skills	▪ Limited supply of tailoring students from government facilities ▪ There are only 42 seats for dress making and 21 seats for fashion designing in Bangalore ITIs ▪ Limited knowledge of operating machines ▪ Inadequate knowledge of basic machine maintenance ▪ Quality inspection knowledge ▪ High attrition of tailors for minimal wage hike
Quality control executive (Graduate and/or with some experience in garment industry)	▪ Ability to inspect if the garments have been stitched as per given specifications and instructions ▪ Ability to check for quality adherence ▪ Ability to understand and prevent defects like size variations, loose threads, stains etc.	▪ Inadequate observational skills ▪ Limited knowledge of quality expectation for export jobs ▪ On-the job training provided as such skills usually come from experience.

Role, educational qualification	Expected competency	Skill gaps
Helpers (illiterate to 10th pass)	▪ Ability to cut the cloth based on specifications. ▪ Ability to button the stitched garments. ▪ Ability to put labels on the stitched garments. ▪ Ability to iron the ready garments properly. ▪ Ability to iron the garments ▪ Ability to pack the garments in bundles	▪ Basic skills required for this profile, for which no / minimal training required. Mostly provided easily on the job.
Silk weavers	▪ Operating of looms ▪ Maintenance of loom ▪ Deducting weaving defects ▪ Ability to find out the reason for loom stoppage and rectifying ▪ Knowledge to offer different products ▪ Marketing skills ▪ Quality checking ▪ Packaging	▪ Ability to transform from traditional looms to automated looms ▪ Limited understanding of the 52 steps in silk weaving ▪ Limited formal training apart from the employed company ▪ Training is required on usage of computers in designing ▪ Ability to create diversified products – new varieties, silk by jute / silk by cotton products ▪ Export market awareness ▪ Dying techniques ▪ Processing techniques in terms of finishing and packaging ▪ Embroidery training

Source: IMaCS Analysis

5.3. Food Processing

Bangalore Urban and Rural District have multiple food processing industries involved in primary, secondary and tertiary processing. Some of the leading food processing companies which have established their presence in the districts are Cadbudy, Parle, Wrigleys, Britannia, Fairy Food products, Avesthagen, Vishal Natural Foods, Creamline dairy, Karuturi Global, Indo Nissin Foods, Koleman India, Thekitchen4u, Delight cafe, Hot Beanz, PepsiCo, Chordia, Meatzza, Bakemans, Ambika Foods, MTR foods, Naturo Foods and Fruit Products Pvt Ltd etc. This apart there are multiple breweries and wineries in the districts, the prominent ones being Khoday India, United Breweries, Gemini Distilleries, Grover Vineyards, Kinvah, Heritage Winery, Amrut Distilleries, Premier Distilleries, Mysore Distilleries etc. Banglaore Rural and Urban districts also host multiple food flavours and fragrances including Sonarome, Givaudan India Pvt Ltd, Aromatic India, etc

Figure 40 Food Processing

The organised food processing industry is highly mechanised owing to the various global healthcare and food processing norms including KOSHER, HALAL, HCAAP, ISO 9000 series, OSHAS etc. This high reliability on mechanisation has reduced the dependence on human capital and hence the number of employment generated. Majority of the employment in these industries are in, packing, loading and

unloading, machine monitoring, machine maintenance, electrical and electronics management in the factory.

Thus, the employment generation capacity of the sector is limited, most of the employees in these sector are trained by the employers themselves as suited to their mechanisation and process involved. In addition the industries being well established, players do not find difficulty in hiring and training eligible candidates for their vacancies.

The general skills in which the employees get trained are,

1. Industry standards as applicable to the product
2. Mechanisation employed in the industry
3. Food safety norms and quality control
4. Material handling and safety procedures
5. Personal safety management
6. Machine maintenance

5.4. Banking, Financial Services and Mutual Fund

Banking and Financial Services is the back bone of any successfull industry in an economy, the sector provides the necessary credit, working capital, and the financial conduit for the conduct of the industry. As of March 2010, Bangalore Metropolitan Area had 1508 commercial bank branches/offices, 35 NBFCs which do not accept public deposits (31 March 2012), seven NBFCs which accept public deposit (31 March 2012), 100+ other NBFC organisations engaged in multiple activities including life insurance advisory, mutual fund, stock exchange services, general insurance, farm credit, and other financial instruments. Apart from these NBFCs, banks themselves are offering services in the wealth management, credit extension and life insurance sector.

The services in BFSI sector includes,

1. Retail Banking
2. Corporate Banking
3. Life and Non Life Insurance
4. Capital Market Advisory
5. Wealth Managment Services

The skill gap in the **Retail and Corporate Banking** sector is common across Bangalore Urban and Bangalore Rural districts, they are listed below as follows,

Table 42: Skill gaps in Retail Banking sector in Bangalore Urban & Bangalore Rural

Role, educational qualification	Expected competency	Skill gaps
Executive Sales (Graduate, Experienced) Field Executive Sales (Graduate, Beginer)	▪ Understanding of retail bank products ▪ Knowledge of bank procedures and KYC norms ▪ Awareness of regulatory norms ▪ Excellent communication skills ▪ Ability to understand client requirements and suggest suitable product ▪ A high achieving mindset	▪ Limited selling skills, especially cross selling and up selling ▪ Inadequate communication skills ▪ Limited understanding of the banks products ▪ Difficulty in comprehending the un stated needs of the customer
Executive Operations(Gratuate)	▪ Knowledge of bank's operations ▪ Understanding of the standard operating procedures ▪ Understanding of regulations governing banking operation ▪ Bank MIS System ▪ Good accounting skills (in case of back office) ▪ Knowledge of banking softwares ▪ Preparing reports, MIS etc ▪ Basic knowledge of computers ▪ Orientation to pick up KYC norms ▪ Adherence to processes	▪ Inadequate knowledge of banking law and practice ▪ Understanding of banking process ▪ In sufficient Know Your Customer (KYC)understanding ▪ Limited computer knowledge
Banking Manager (Experienced Graduate)	▪ In depth understanding of banking norms, laws and regualations ▪ Relationship building skills ▪ People management ▪ Target management ▪ Escalation of issues	▪ HR management ▪ Interpersonal relationship management ▪ Up selling of products

Table 43: Skill gaps in Corporate banking sector in Bangalore Urban & Bangalore Rural

Role, educational qualification	Expected competency	Skill gaps
Relationship Mnager (Experienced Graduate, MBA)	▪ Institutional sales ▪ Understanding of bank products ▪ Bank procedures and documentation ▪ Client rapport skills ▪ Up selling and cross selling ▪ Awareness of regulatory norms ▪ Target oriented approach ▪ Economic awareness of the industry ▪ Inter personal skills	▪ Lack indepth knowledge of products and its structuring ▪ General knowledge of the economy ▪ Up selling and cross selling skills
Senior Relationship Mnager (Experienced Graduate, MBA)	▪ Multiple client handling skills ▪ High degree of financial knowledge and analytical ability ▪ Transaction management skills ▪ Client base creation ▪ People management ▪ Team management	▪ Few lapses in deal/loan structuring ▪ Inter personal skils

In the **Insurance Sector** sales and marketing constitutes 60-70 per cent of the workforce and claims management occupy another 10-15 per cent, the rest of the posts including asset management, product development, actuary services etc are handled at the corporate level. Hence we focus on sales and marketing of insurance product and claims management which happen at the state and which provide the maximum employment.

Table 44: Skill gaps in Corporate banking sector in Bangalore Urban & Bangalore Rural

Role, educational qualification	Expected competency	Skill gaps
Marketing Manager (Experienced	▪ Training and development of agents ▪ Sound understanding of insurance	▪ Limited competitor analysis ▪ Evaluation of field agents

Role, educational qualification	Expected competency	Skill gaps
Graduate/MBA)	products, policies, regulatory market, government orders ▪ Sound knowledge of the market competition ▪ Knowledge of agent assessment and agent grooming skills ▪ Ability to handle multiple sales channels ▪ Leadership and motivational skills ▪ Strong communication skills	▪ Training and motivation of insurance agents
Advisor/Agent (Any Graduate)	▪ In depth product understandin ▪ Cross selling and up selling of products ▪ Lead generation, development and conversion ▪ Knowledge of different assets ▪ Documentation and KYC norms ▪ Good communication skills	▪ In depth knowledge in structuring the projects ▪ Inadequate financial planning skills ▪ Cross selling skills
Claims Management (Trained Graduate)	▪ KYC norms ▪ Document evaluation ▪ Knowledge of the insurance product ▪ Legal terminology ▪ Documentation and compliance ▪ Excellent computer skills	▪ Inadequate product knowledge ▪ Limited legal knowledge
Administration (Graduate)	▪ Computer typing and documentation skills ▪ Understanding of MIS and company SOPs ▪ Documentation and indentifying KYC ▪ Time management ▪ Knowledge of accounting	▪ Time management and target management ▪ Inadequate awareness of the regulations, compliance, and product which results in wrong entries

Wealth Management and Capital Market Advisory includes advice of clients on equity and debt market, mutual funds, and other market instruments. The key employee segments of these section includes, sales and marketing force comprising of 60-70 per cent of the total workforce, accounting, fund transfer and back office operations at 20-30 per cent and investment research at 10-20 per cent. This apart there are multiple intermediaries involved in the mutual fund business as fund advisor/distributor, these intermediaries are required to clear an exam by Association of Mutual Funds in India (AMFI) to attain the necessary certification for their operation.

The key skill gaps in this industry for the sales force and back office operations is listed below (the third category investment research is a high skill job which does not require this analysis).

Table 45: Skill gaps in Wealth Management and Capital Market Advisory in Bangalore Urban & Bangalore Rural

Role, educational qualification	Expected competency	Skill gaps
Financial Planner/Advisor (Graduate/AMFI certified)	▪ Knowledge of the financial market instruments ▪ Complete understanding of the products in the market ▪ Financial planning capability ▪ Financial concepts including IRR, NPV, etc ▪ Ability to comprehend risks and translate it to customer ▪ Ability to assess customer risk appetite ▪ Ability to generate new business ▪ Cross sell/Up sell ▪ Good communication skills ▪ KYC norms ▪ Documentation skills	▪ Knowledge of variety of products ▪ Assesment of customer risk appetite ▪ Over selling/ underselling of financial products

Role, educational qualification	Expected competency	Skill gaps
Back office Operation/ Administration (Graduate)	▪ Computer typing and documentation skills ▪ Understanding of MIS and company SOPs ▪ Documentation and indentifying KYC ▪ Time management ▪ Knowledge of accounting	▪ Time management and target management ▪ Inadequate awareness of the regulations, compliance, and product which results in wrong entries

Non Banking Financial Corporations operate in the same way as banks, but they have limited capacity and authority to receive deposits, most of the NBFCs are in institutional lending, business lending, Self help group lending, personal lending, loans agains gold business. The major employment categories in this sector are in Credit appraisal and evaluation (10-15 per cent), Collections and recovery (10-15 per cent), Sales and Customer support (10-15 per cent), back office support (15-20 per cent), and Product development (1-5 per cent). The key skill gaps in the major employment categories are,

Table 46: Skill gaps in Corporate Banking sector in Bangalore Urban & Bangalore Rural

Role, educational qualification	Expected competency	Skill gaps
Sales Executive (Graduate) Promotion from Junior to Senior based on experience and ability	▪ Complete understanding of the products offered by the NBFC ▪ KYC norms ▪ Knowledge of RBI and other norms of the business ▪ Competitor knowledge ▪ Documentation inspection, verification and filing ▪ Assessment of customer skills and capability ▪ Communication skills	▪ Knowledge or product structuring ▪ Legal and regulatory norms of the state ▪ Communication skills ▪ Competetitor product skills

Role, educational qualification	Expected competency	Skill gaps
Credit appraisal and Evaluation	▪ Ability to assess the credit risk of customer ▪ Ability to check the standing guarantee provided by the customer ▪ Knowledge or RBI rules and guidelines ▪ Balance sheet interpretation ▪ Ability to determine loan components as per client's financial position ▪ Good documentation skills	▪ Risk assessment of customer ▪ Financial skills in and balance sheet interpretation ▪ Determination of loan components
Collections and Recovery	▪ Track collections and receivables ▪ Identify defaulting customers ▪ Customer segmentation based on adherence to repayment ▪ Good communication skills ▪ Ability to negotiate with customers for receivables	▪ Knowledge of laws and regulations ▪ Communication skills
Back office Operation/ Administration (Graduate)	▪ Computer typing and documentation skills ▪ Understanding of MIS and company SOPs ▪ Documentation and indentifying KYC ▪ Time management ▪ Knowledge of accounting	▪ Time management and target management ▪ Inadequate awareness of the regulations, compliance, and product which results in wrong entries

5.5. Building, Construction industry and Real Estate services

The building, construction and real estate industry provides the services for commercial buildings, residential buildings and special areas like SEZs, theme parks, roads, bridges, ports, shipping, airports, urban infrastructure, and utilities.

This section focuses on skil development needs of commercial space, residential buildings, urban infrastructure and roads, as the rest are being developed outside the the districts (Bangalore international airport has already been developed, though some expansion is underway).

Bangalore added 11.35 million sq ft of office space in 2011; on an average 30 per cent of office space is taken up by IT/ITES industry, 14 per cent by BFSI and 12 per cent by professional services firm, the remaining were occupied by consumer goods, industrial goods, electronics and communication, media and telecom industry across the country. Some of the prominent reas estate developers operating out of Bangalore are Prestige Group, Nitesh Estates, Purvankara, Brigade Group, Embassy Group, SJR Group, Concorde Group, Sterling development, Ferns Builders, Mantri, RMZ Group, Provident Housing etc.

In the residential segment, Bangalore added more than 6 million sq ft of real estate in the year 2011, the hot spot areas for residential developments are,

1. Hebbal, Yelahanka, Doddaballapura Road, Devanahalli, Jallahalli, Hennur Road, Thanisandra, Sahakarnagar, and RMV Extension in North and North East Bangalore
2. Whitefield, Marathallli, Old Madras Road, KR Puram, ORR Sarjapura, Sarjapura road in East, and South East Bangalore
3. Kanakapura Road, Bannerghatta Road, Hosur Road, Electronic City, Jayanagar, JP Nagar, HSR layout, Banashankari and BTM layout in South Bangalore
4. Bangalore Urban Road, Malleshwaram, Rajajinagar, Vijaynagar, Mysore Road, Rajajeshwari Nagar (R.R. Nagar), Uttarahalli in West and North West Bangalore
5. MG Road, Ulsoor, Richmond Town, Lavelle Road, Kasturba Road, Cunningham Road, Frazer Town, Cox Town, Vasanth Nagar, Indiranagar , Koramangala in the Central Bangalore

Figure 41 Building Construction

The GIM 2010 aspires a real estate development of 972 acres in Bangalore Urban and 3560+ acres in Bangalore Rural district, similarly the GIM2012 projects aspire to develop 4600+ acres in Bangalore Urban and 3900+ acrs in Bangalore rural district. This development will occur in building of factories, SEZ, industrial areas, estates, residential projects etc.

The skill gaps in the building and construction industry are,

Table 47: Skill gaps in Building Construction and Real Estate sector in Bangalore Urban & Bangalore Rural

Role, educational qualification	Expected competency	Skill gaps
Project Manager (Experienced Engineering Graduate)	▪ Co ordination of various teams and departments ▪ Legal knowledge relating to real estate ▪ Cost, quality and time management	▪ Inadequate project management skills ▪ Difficulty in controlling cost and finances

Role, educational qualification	Expected competency	Skill gaps
	▪ Understanding of electrical, masonry, electronics, hydraulics and geology ▪ Understand technical drawings/building drawings ▪ Ability to manage contractors ▪ Knowledge of construction equipments ▪ Knowledge of software tools used in construction industry ▪ Strong oral and written communication skills ▪ Project management techniques ▪ Client handling skills	▪ Inadequate resource management skills ▪ Inadequate conflict management and communication skills
Site Engineer/ Supervisor (Graduate/ Experienced Diploma)	▪ In depth understanding of the building construction process and the various stages and techniques associated with it ▪ Material management, inventory management ▪ Human resource management ▪ Work allocation and scheduling ▪ Supervision and instruction ▪ Conflict resolution ▪ Oral and written skills ▪ Preventive maintenance and scheduled maintenance activities ▪ Quailty management ▪ Safety management	▪ Inadequate safety management skills ▪ Inadequate communication and team management skils ▪ In sufficient conflict resolution skills ▪ Inadequate knowledge of costing and cost overrun implications ▪ Inadequate planning skills
Skilled workmen (Plumber, Electrician, Mason,	▪ Knowledge and skill in their specific field of specialisation (Eg, Mason should be skilled in cement mixture norms, levelling,	▪ Inadequate knowledge in their specific area of skill ▪ Time management and target

Role, educational qualification	Expected competency	Skill gaps
Bar Bender, Carpenter, Painter – Formally educated/ Experienced)	concreting, etc Plumber should have knowledge of plumbing equipments, drawings, piping etc) ▪ Working as a team and co-ordination ▪ Communication skills ▪ Safety and quality norms ▪ Basic knowledge of general construction techniques ▪ Ability to use material handling equipments ▪ Time management	management ▪ Co-ordination skills with other skilled teams
Un skilled Worker (Helpers)	▪ Executing the excavation, carrying of load, cutting, mixing concrete/cement mixture, packing etc ▪ Ability to perform manual labour intensive work ▪ Comprehend instructions and act accordingly ▪ Understand safety nors and act accordingly ▪ Work place management and cleanliness	▪ Limited safety orientation ▪ Work place discipline management ▪ High attrition
Facility Management	▪ Administration and logistics, post facility occupancy including housekeeping, engineering maintenance, power back up, sanitation, gardening etc ▪ Preventive and breakdown maintenance knowledge ▪ Co ordination with utilities for uninterrupted supply of water, power,	▪ In sufficient preventive maintenance knowledge ▪ Communication skills ▪ Limited knowledge of English, Kannada and Hindi ▪ In sufficient customer relationship management skills

Role, educational qualification	Expected competency	Skill gaps
	drainage etc ▪ Material handling ▪ Complaint management ▪ Customer service ▪ Documentation and basic accounting	

5.6. Pharmaceutical Sector

Bangalore is the national capital for Bio Technology and Pharaceutical industry, the state has 195 Biotech companies which is 60 per cent of all India presence; over 50 per cent of the Biotech revenues is generated in Bangalore. Bangalore alone houses 137 Biotech companies, or 40 per cent of the total country. Karnataka ranks 10th in the number of pharma manufacturing companies and constitutes 40 per cent of the pharma production in the country, and accounts for 8 percent of the total pharma revenue of the country (the state hosts 221 Formulation unis, 74 bulk drug units). Following the State Industrial Policy 2009-14, four Biotech parks and three SEZs for pharma sector is being set up in Bangalore in addition to the operational SEZ.

Some of the major Biotech and pharma companies in Bangalore are, Biocon, AstraZeneca, Avesthagen, Himalaya drugs, Novo Nordisk, Glaxo Smithkline, Sequent Scientific, Jubiliant Biosys, Millopore India Ltd, Siemens Hearing Instruments, etc. In the recently concluden GIM 2012 MOUs to the tune of 700+ crore were signed in the Biotech and Pharma industry in Bangalore Districts alone.

The composition of employment in the pharmaceutical industry is, Factory Production and Quality control – 50-60 per cent, R&D/Laboratory – 20 per cent, Sales & Marketing – 5-10 per cent, Supply Chain management – 4-10 per cent, Support functions – 5-10 per cent. The skill gaps observed in the pharmaceutical sector are,

Table 48: Skill gaps in Pharmaceutical sector in Bangalore Urban & Bangalore Rural

Role, educational qualification	Expected competency	Skill gaps
Production Manager (Experienced Engineering Graduate)	▪ In depth knowledge of fermentation and chemical synthesis ▪ Ability to control the production environment in terms of temperature, humidity etc ▪ Understand and establish production layout,and process flow ▪ Material and workforce management ▪ Inventory management ▪ Orientation towards Intellectual Property Management ▪ Ability to develop and adhere to Standard Operting Procedures as per WHO-GMP, Schedule M noms ▪ Production and Target oriented ▪ Adherence to safety norms ▪ Ensuring skill development of subordinates ▪ Excellent communication skills	▪ Inadequate project management skills ▪ Inadequate conflict management and communication skills ▪ Inadequate knowledge of regulatory process and IPR
Production Supervisor (Graduate)	▪ In depth understanding and knowledge of fermentation and chemical synthesis ▪ Material management, inventory management ▪ Quality management and basics of laboratory testing methodoloties ▪ Human resource management ▪ Work allocation and scheduling ▪ Supervision and instruction	▪ Insufficient knowledge of quality managment ▪ Inadequate safety management skills ▪ In sufficient conflict resolution skill ▪ Inadequate planning skills

Role, educational qualification	Expected competency	Skill gaps
	▪ Conflict resolution ▪ Oral and written skills ▪ Preventive maintenance and scheduled maintenance activities ▪ Quailty management ▪ Safety management	
Factory Workmen (Graduate/Diploma/ Experienced ITI)	▪ Ability to operate boilers, fermenters and other processing equipments ▪ Understanding of fermentation and chemical synthesis process ▪ Adherence to clothing, health and sanitary conditions of the working environment ▪ Ability to operate various machines such as capsule filling, blister packing, ampoule filling, granulation, etc. ▪ Communication skills ▪ Knowledge and compliance with SOP ▪ Knowledge of clean room, air handling units, GMP standards ▪ Ability to use fork lift, crane and other material handline equipments ▪ Safety and quality norms ▪ Time management	▪ Inadequate knowledge of Clean room, air handling units and GMP ▪ In sufficient knowledge of chemicals and compounds involved ▪ In sufficient safety standards adherence ▪ Lack of motivation due to physical labour involved ▪ High attrition due to marginal salary differences
Lab Technician	▪ Knowledge of lab testing methodologies in one or more fields such as bio chemistry, pathology, microbiology, bacteriology, virology, pathology, pharmacology etc ▪ Ability to organise laboratory and operate it as per SOP and safety standards	▪ In sufficient documentation skills ▪ Cleaniliness, and sanitation management ▪ Knowledge of IPR and drug approval process

Role, educational qualification	Expected competency	Skill gaps
	▪ Knowledge and adherence to Bio Medial Waste control norms ▪ Ability to undertaken basic and advanced research ▪ Ability to document diligently the results of observation ▪ Instrumentation knowledge ▪ Understanding of IPR and its implications ▪ Knowledge of drug approval and the procedures related to the same ▪ Work place safety and hazardous material handling knowledge ▪ Co ordinate with multiple teams inside the organisation	▪ Inadequte knowledge of global standards including USFDA
Sales, Marketing and Medical Assistance	▪ An understanding of the organisations products and their composition and capability ▪ Understanding of competitive products ▪ Ability to explain pharmacists, physicians, dentists and health professionals on the products ▪ Maintain a good working interaction with doctors and pharmacists ▪ Undertake market research activities for developing efficient sales and marketing strategies ▪ Customer complaint management ▪ Willingness to travel and have flexible work schedules	▪ Convincing skills and objection management ▪ Relationship management ▪ Knowledge of competetitor products ▪ Legal and commercial aspects

Role, educational qualification	Expected competency	Skill gaps
	▪ Assist in pricing of product ▪ Good and pleasing demeanour	

5.7. Healthcare Sector

Bangalore Districts can be aptly called as the healthcare capital of South India; it houses world's largest number of systems of medicines approved by WHO in one location. GIM 2012 has assured investment to the tune of 2900+ Crore in the Bangalore Urban and Rural districts. As of 2010 Karnataka had 87,320 Allopathic Doctors, 2760 Dental Surgeons, 33,541 Ayush Doctors, 79508 Pharmacists, and 1,90,000 Nurses registered in the State; this translates to 2.05 Doctors, 3.13 Nurses, and 1.3 Pharmacists per 1000 population, which is above the WHO norms. As of 2010, Karnataka had 468 Rural Government hospitals with 8010 beds and 451 Urban hospital with 55,731 beds, serving an average of 913 patients per Government hospital bed. There were 170 blood banks, 47 eye banks, 208 Ayush Hospitals and 699 Ayush Dispensaries as of 2010 in Karnataka.

The major private medical hospitals in Bangalore are, Manipal hospital, Appollo hospital, Wockhardt hospital, Narayana Hrudayalaya, Dr Agarwal Eye Clinic, Columbia Asia Hospital, MS Ramiah Hospital, Mallaya Hospital, Lakeside Medical Centre and Hospital, St Johns Medical College and hospital etc.

Figure 42Major Hospitals in Bangalore

The composition of employment in the healthcare delivery segment is, doctors – 15-20 per cent, Nurses 45-55 per cent, Technicians – 15-20 per cent, Attenders and Helpers – 15-20 per cent, Administrative and support staff – 5 per cent.

The skill gaps observed in the healthcare delivery sector are,

Table 49: Skill gaps in Pharmaceutical sector in Bangalore Urban & Bangalore Rural

Role, educational qualification	Expected competency	Skill gaps
Medical Specialists (PG in Medical Specialty)	▪ Delivery preventive, curative, and surgical healthcare services as applicable ▪ Abilty to plan healthcare delivery services ▪ Manage and plan manpower and resources ▪ Co ordinate with other specialists on treatment and guide junior doctors/interns	▪ Lapses in conducting medical and other audits ▪ Difficulty in co-ordinating activities between departments ▪ Difficulty in using computers

Role, educational qualification	Expected competency	Skill gaps
	▪ Conduct death audit, prescription audit, pharmacy audit, medical audit and other quality audits ▪ Co ordinate between departments for effective service delivery ▪ Use computers and HMIS ▪ Design/lead disaster management protocols ▪ Leadership skills	
Consultant Doctors (Minimum MBBS)	▪ Ability to perform preventive, curative, surgical medical procedures and advices ▪ Knowledge of infection control, bio medical waste, and other hospital quality control norms ▪ Participate in quality audits ▪ Ability to explain the medical problems to the patients ▪ Prescribe medicines, referrals, ambulatory service, diagnostic service and diet ▪ Disaster management norms ▪ Calm, composed and pleasing demeanour with patients	▪ Inadequate skills in working as a team ▪ In sufficient knowledge of hospital infections ▪ Limited knowledge of disaster management protocol
Head Nurse (Experienced Qualified Nurse)	▪ Provide expert advice on nursing services to other nurses ▪ Co ordinate and plan the nursing activities, duty charts, nursing schedule, specialist nursing schedule ▪ Knowledge of various SOPs of the hospital	▪ Limited knowledge of infection prevention and control norms ▪ Limited communication skills ▪ Limited knowledge of hospital protocols

Role, educational qualification	Expected competency	Skill gaps
	▪ Co ordinate activities between different departments including housekeeping, pharmacy, diagnostics etc ▪ Supervise housekeeping and infection control activities ▪ Schedule housekeeping staff and infection prevention activities ▪ Knowledge of Cardio Pulmonary Resustication, Neonatal Resuscitation, first aid, etc ▪ Good communication skills	
Ward Superintendent (Experienced Nurse Graduate)	▪ Provide expert advice on nursing care to ward nurses and guide them during difficult processes ▪ Provide nursing care to the patients ▪ Co ordinate with laboratory, pharmacy, housekeeping, administration departments ▪ Supervise housekeeping and sanitation ▪ Schedule nursing shifts ▪ Knowledge of Cardio Pulmonary Resustication, Neonatal Resuscitation, first aid, etc ▪ Supervise Bio Medical Waste separation and disposal ▪ Administrative work relating to nursing ▪ Good communication skills ▪ Knowledge of medical safety norms ▪ Pleasing and comforting demeanour with	▪ Limited knowledge of infection control and disaster management protocol ▪ Inability to use modern nursing aids and tools ▪ Inadequate people management skills

Role, educational qualification	Expected competency	Skill gaps
	patients	
Ward Nurse (Nursing Graduate)	▪ Provide nursing care to patients ▪ Provide specialist nursing care as per the location eg, ICU, paediatric, emergency ▪ Knowledge of Cardio Pulmonary Resustication, Neonatal Resuscitation, first aid, dressing etc ▪ Ability to collect samples for lab tests ▪ Co ordinate with laboratory, pharmacy and housekeeping departments ▪ Knowledge and skill in blood transfusion ▪ Ability to identify cross infection, hospital acquired infection, needle stick injury, medical infections etc ▪ Inventory management of necessary medicines, and chemicals ▪ Knowledge and skill in Bio Medical Waste segregation and disposal ▪ Knowledge to use modern nursing aids and equipments ▪ Good communication and documentation skills ▪ Pleasing and comforting demeanour with patients ▪ Knowledge of medical safety norms	▪ In adequate patient complication comprehension skills ▪ Inadequate specialist skills among nursing staff ▪ Inadequate knowledge for using modern medical equipments ▪ Limited knowledge of CPR knowledge ▪ Inadequate knowledge of drugs ▪ Lack of knowledge of English and Hindi (especially for medial tourist patients)
Lab Technician (Graduate in Biology, Microbiology,	▪ Knowledge of lab testing methodologies in their field of speciality such as bio chemistry, pathology, microbiology, bacteriology, virology, pathology, serology	▪ Knowledge of modern tests and testing equipments ▪ Inadequate bio medical waste management skills

Role, educational qualification	Expected competency	Skill gaps
Pathology/ Diploma in Lab Technician)	etc ▪ Inventory management of lab chemicals and compunds ▪ Ability to organise laboratory and operate it as per SOP and safety standards ▪ Ability to draw samples from patients ▪ Sample preparation skills ▪ Knowledge and adherence to Bio Medial Waste control norms ▪ Ability to document diligently the results of observation ▪ Instrumentation knowledge ▪ Knowledge of medical safety norms ▪ Work place safety and hazardous material handling knowledge ▪ Prepare reports from laboratory	▪ Inadequate documentation management skills
Radiodaignostic technician (Diploma in Radiology)	▪ Knowledge of operating Xray,USG, ECG, EEG, CT Scan, MRI and other related equipments ▪ Knowledge of using the right value of radiation for various tests ▪ Knowledge of developing the X-ray plates and dark room management ▪ Inventory management ▪ Knowlege of patient safety norms during procedure ▪ Ability to guide patients during the process ▪ Diligent documentation of test results	▪ Lack of knowledge and skills in using the latest diagnostic machines ▪ Lack of cross infection knowledge ▪ Basic machine maintenance ▪ Lack of preventive maintenance

Role, educational qualification	Expected competency	Skill gaps
	▪ Knowledge of AERB norms and other medical infection norms ▪ Knowledge of medical safety norms ▪ Preventive maintenance ▪ Good communication skills	
Ward Attendant/Ayah (School pass/ Illiterate)	▪ Assist nursing staff while delivering nursing care ▪ Intra mural and extra mural transfer of patients ▪ Understand cross infection and act as per that ▪ Knowledge of bio medical cleaning methods ▪ Knowledge of sheet changing, disposable clearance etc ▪ Bio Medical waste segregation and disposal ▪ Knowledge of medical safety norms ▪ Procure medicines and other consumable upon indent ▪ Cleanliness and hygiene management ▪ Decent communication skills	▪ Limited knowledge of bio medical waste implications ▪ Cleanliness and hygiene management ▪ Carelessness in observing safety norms

5.8. Electronics and IT Hardware

Electronics industry in Bangalore is limited to IT based electronics and hardware, most of the companies which have agreed to start their operations in during GIM 2010 and GIM 2012 also have commited for investment in IT hardware electronics and maintenance. The employment in Electronics and IT hardware will be in hardware production/assembly and hardware maintenance. Apart from the formal industry employment in IT asset management, an informal computer and laptop maintenance and repair

industry is operational across the Bangalore districts. The major skilled employment in electronics and IT hardware industry is as follows,

Table 50: Skill gaps in Electronics and IT hardware Production in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Production Manager / supervisor / floor in-charge (Graduate Engineer/ Experienced Diploma)	• Ability to communicate between departments • Knowledge of electronics product line and ability to design production flow • Comprehend and Teach the Standard Operating Procedures (SOPs) • Quality Inspection • Ability to supervise • Production and Productivity Management • Materials management • Resource management • Knowledge of JIT, Kanban, JIT, production cell, ISO 9001:2008 and other quality concepts • Conflict resolution and knowledge of labour laws • Analytical problem solving techniques	• Insufficient understanding of the process • Limited knowledge in quality requirements and international standards • Insufficient ability to co-ordinate activities within and between production lines and departments • Inadequate knowledge of materials and resource management • Inadequate knowledge of labour laws
Shift Engineer / Line Supervisor (Graduate/ Experienced Diploma)	• Assisting in production plan development • Management and execution of production plan • Indepth knowledge of the production line, production process • Skill in preparaing SOPs for the production	• Limited knowledge of cost over runs • Inadequate knowledge or JIT, KANBAN etc • Inadequate quality conciousness

Role, educational qualification	Expected competency	Skill gaps
	line • Skill in operating the machines in assembly and process • Quality inspection • Knowledge or 5S, Kanban, JIT concepts • Material management • Knowledge of safety standards	
Operator/ Technician (ITI)	• Knowledge and skill in operating the machines and equipments used in assembly and production • Skill in using solders, welding, brazers, couplings etc • Skill in using pneumatic and electric tools in assembly • Awareness of health and safety standards • Adaptability to new machines, process and products • Defect recognition	• Need augmentation in skills of using pneumatic tools, electronic measurement equipments • Adaptability to new production line/products

Table 51: Skill gaps in IT Hardware Service and Maintenance in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Service Executive	• Understanding customer complaints and reporting • Proper documentation management • Warranty and Guarantee verification • Safe handling and logistics of hardware	• Identifying and detailing the fault

Role, educational qualification	Expected competency	Skill gaps
	• Costing of service activity	
Repair Technician (Diploma/ITI)	• Knowledge of multiple IT hardware products • Skill to work with multiple electronic instrumentation equipments • Knowledge of spare parts configuration, costing and replacement • Knowledge of competitior products • Trouble shooting skills • Skill to comprehend new circuits, new models etc	• Being upto date with multiple products and electronic parts • Trouble shooting skills

5.9. IT/ITES

IT industry in India employs people in IT consulting, Sytems Integation, Application development, Network consulting and integration, Software integration, Information system outsourcing, Software development and support, Hardware deployment and support, and IT education and training. In the ITES segment employment is in Voice/Customer Interaction services, Finance and accounting services, HR services, Medical Transcription services, Enterprise resource support services and analytical services.

Titled as the Silicon Valley of India, Bangalore Urban district is the country's leading IT exporter, employing nearly 8+ Lakh people (35 per cent of the IT/ITES workforce of the country). The leading IT/ITES institutions include Infosys, Wipro,HCL, Cognizant, IBM, GE, Accenture, Adobe, Amazon, AMD, Ariba, Autodesk, Cap Gemini, Bosch, iNautix, Cisco, Delphi, i2, Geometric, L&T infotech, Oracle, PSI data systems, Samsung, SAP, Sapient, TCS, Xansa, etc.

NASSCOM estimates the size of IT/ITES services industry in India at US$ 87.6 billion during 2011-2012 and it is expected to grow at 19 per cent during the year 2012-13 and cross US$ 100 billion of which US$ 69 billion would be the exports to USA. Within the IT/ITES industry IT services accounts for 58 per cent, BPO is nearly 23 per cent and Engineering, R&D and Software Products account for 19 per cent.

Bangalore is home to nearly 2156 IT/ITES companies and is the fourth largest technology cluster in the world; it also houses more than 50 per cent of the SEI- CMM Level-5 IT companies in India (63 in India out of 87 worldwide).

Table 52: Skill gaps in IT Service Delivery in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Software Engineer (Experienced Degree/ Certification Course)	• Advanced programming skills in the particular domain/software package as required by the job profile • Understanding of the business flow of the client • Understanding of the client reporting norms • Knowledge of Software testing tools and methods • Ability to integrate IT product with the various other IT products/systems with the client • Ability to document revision changes and updates • Good communication skills	• To be upto date with the current IT package version and releases • Deep understanding of the IT product to deliver complex solutions • Inadequate soft skills
Project Leaders (Experienced Degree/ Experienced Certification Course)	• Ability to work in multiple technologies which complement each other for the software system to be developed • Knowledge of the business process involved • Ability to convert functional specifications to design/system specifications • Ability to lead a team and deliver results	• Inadequate leadership qualities • In sufficient knowledge across domains • In adequate communication skills

Role, educational qualification	Expected competency	Skill gaps
	• Good communication, documentation and organisation skills • Good customer rapport	
Project Manager (Experienced Degree)	• In depth understanding of the sector and its constituents • Knowledge in multiple domains of software • Adherence to process and product quality including ISO/SEI/ITIL standards • Risk management • Resource management and time management • Systems approach • Team management and leadership skills • Hiring and training skills	• Resource management skills • Only experienced and seasoned executives reach this level of profession, hence there is no need for formal skill upgradation
Business Head (Experienced Degree)	• Understanding of the business as whole and the movement of the business • Ability to pitch with clients and acquire clients for the organisation • Ability to plan business for the organisation • Negotiation skills • Team management and leadership skills • Risk management knowledge • Cost control of operations • Resource management • Hiring and training skills	• Shortage of negotiation skills and soft skills • Resource management skills • Business heads are seasoned executives with adequate skills, a formal skill upgradation is not required

Table 53: Skill gaps in IT Sales and Business Analysis in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Pre Sales/ Business Analysts (Experienced Degree/ Post Graduation)	• Understanding of software architecture and its components • Deep understanding of the dynamics of the business • Ability to prepare analytical reports on the industry • Ability to understand customer requirement and translate them to functionalities • Knowledge of process flow in the business • Ability to work with RFI/RFP/RFQ and write proposals • Ability to cost the service and advice the organisation on pricing • Strong presentation skills • Very good communication skills – written and oral	• Limited understanding of the business dynamics • Inadequte proposal writing and costing skills • Limited presentation skills

Table 54: Skill gaps in IT Product Development in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Product Developerment Engineers (Experienced Degreee)	▪ Deep understanding of the dynamics of the business ▪ Understanding of software architecture and its components ▪ Understand the business flow and conceptualise developments and	▪ Understanding of the market dynamics and process changes in business ▪ Limited understanding of markt regulations and competitive products

Role, educational qualification	Expected competency	Skill gaps
	improvements ▪ Ability to generate documentation as per the development ▪ Ability to to be flexible with the design and adap the product ▪ Ability to organically grow the product and enable releases and improvisations ▪ Very good communication skills – written and oral	

Table 55: Skill gaps in BPO sector in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Executive (Voice Based) (Degree/ Diploma/ Certification course)	▪ Understand and comprehend custormer requirements ▪ Good computer operational skills ▪ Knowledge of foreign langauge/ regional English accent ▪ Ability to meet the targets in place ▪ Ability to empathise with customer ▪ Aptitude to undertake repetitive work	▪ Inadequate attention to detail ▪ In sufficient communication skills ▪ In sufficient knowledge of piracy issues
Executive (Non Voice) (Degree/ Diploma/ Certification course)	▪ Analytical skills required for the process ▪ Ability to comply with process ▪ Understanding of business process ▪ Communication skill ▪ High energy level ▪ High perseverance	▪ Limited problem solving skills ▪ Inadequte attention to detail ▪ Need for good writing skills

Role, educational qualification	Expected competency	Skill gaps
	▪ Integrity and ability to do repetitive work	
Team Lead (Experienced Graduate)	▪ Understanding the Statement of Work ▪ Ability to plan, monitor and control activities ▪ Meet targets set in place for the team ▪ Knowledge of best practices pertaining to quality management and information security ▪ Team management and motivation ▪ Work allocation and co ordination	▪ Inadequate team handling qualities ▪ Inadequate business process knowledge
Process Manager (Experienced - Degree/ Diploma/ Certification course)	▪ High level of understanding of the business process ▪ Implement best practices and improve productivity ▪ High degree of interaction with the client and understanding of the business ▪ Resource management including time, manpower and cost ▪ Cost control and financial management ▪ Recruitment and training skills	▪ Understanding competitive business ▪ Team management and retention skills

Table 56: Skill gaps in KPO sector in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Executive (Degree/	▪ Knowledge and understanding of the business process	▪ Limited knowledge of market dynamics

Role, educational qualification	Expected competency	Skill gaps
Diploma/ Certification course)	▪ Strong domain knowledge in the field of specialisation/work ▪ Good analytical skills ▪ Knowldge of market dynamics ▪ Good report writing skills	▪ Limited knowledge of field of specialisation ▪ Limited writing skills
Domain Specialist/ Team Lead (Experienced - Degree/ Diploma/ Certification course)	▪ In depth knowledge of the domain of specialisation ▪ High level of understanding of the business process ▪ Implement best practices and improve productivity ▪ High degree of interaction with the client and understanding of the business ▪ Resource management including time, manpower and cost ▪ Cost control and financial management ▪ Recruitment and training skills	▪ Inadequate project management skills ▪ Inadequate team management skills

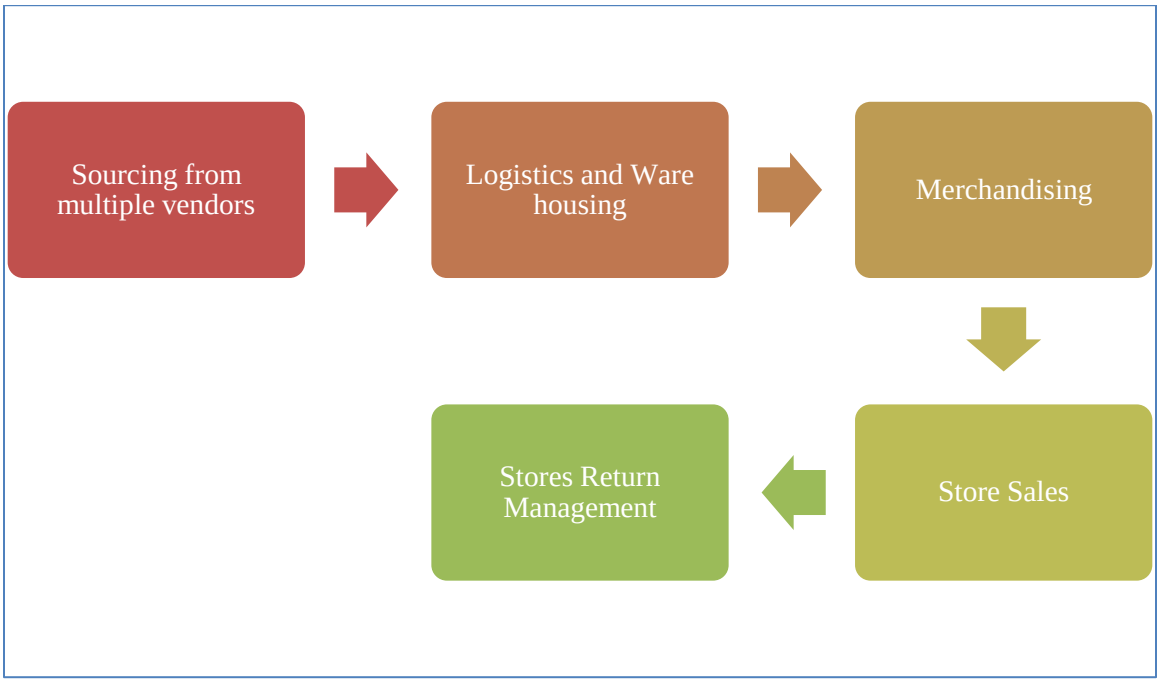
5.10. Organised Retail

As of November 2011, Bangalore had 23 operational malls with 6.105 million sq feet* occupation between them, this retail space is expected to increase to 19.1 million sq feet by 2015. The industry which currently employs 20000+ people is expected to add another 50000 personnel with the increased capacity of organised retail. The footprint of organised retail has spread across clothing, fashion accessories, jewellery, watches, foot wear, health and beauty care, pharmaceuticals, consumer durables, home furnishings, groceries, books, music, entertainment, mobiles, computer, electronics and household articles. The major retailers with presence in Bangalore are, Big Bazaar, Star Bazaar, Bangalore Central, Garuda Mall, Mantri Square, The Forum, Phoenix Market City, Total Mall, Cosmos

Mall, Orion Mall, Gopalan Mall, Royal Meenakshi Mall, Inorbit Mall, etc. (*Retails space for malls above one lakh sq.ft)

The activities in organised retail include, store operation, store sales, merchandising, purchase, logistics, warehousing and marketing.

Figure 43 Value chain of Organised Retail



The skill gaps in various segments of organised retail are,

Table 57: Skill gaps in Purchase Operation of Organised Retail Sector in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Purchase Manager/ Category Manager (Graduate/MBA	▪ Nuances of purchasing and vendor development ▪ Vendor assessment and evaluation ▪ Negotiation skills ▪ Quality control of incoming goods	▪ Limited negotiation skills ▪ Limitations in supply chain optimisation ▪ Limitations in supply chain costing

Role, educational qualification	Expected competency	Skill gaps
	▪ Distribution and logistics of goods ▪ Costing and Pricing of goods ▪ Co ordination with logistics, purchase, ware house, merchandising and retail outlets ▪ Knowledge of accounting ▪ Knowledge of software packages used in Supply chain mangement ▪ Demand planning and optimisation ▪ Good written and oral communication	
Purchasing executive (Graduate)	▪ Vendor development and relationship management ▪ Quality management ▪ Delivery schedule management ▪ Demand management ▪ Vendor negotiation ▪ Documentation management ▪ Knowledge of softwares used for supply chain management	▪ Limited knowledge of supply chain implications ▪ Limited negotiation skills

Table 58: Skill gaps in Logistics and Warehouse Management of Organised Retail Sector in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Logistics Manager/ Logistics	▪ Knowledge of multimodal logistics system ▪ Knowledge of legal, billing, landing and other documentation associated with	▪ Logistics chain costing and optimisation, the mindset to stick with known logistics

Role, educational qualification	Expected competency	Skill gaps
Executive (Graduate) (Varying degrees of the same skill)	logistics ▪ Good working relationship with freight forwarders, and logistics providers ▪ Control of logistics cost ▪ Design and optimisation of logistics cost ▪ Negotation skills with logistics providers and warehousing providers ▪ Good communication skills ▪ Knowledge of logistics software	provider rather than optimising as per organisation requirements ▪ Restrictions in co-ordination between different levels of logistics provider and warehouse operations
Warehouse Manager / Executive (Graduate) (Varying degrees of the same skill)	▪ Management of warehouse and its operations ▪ Guide the employees in warehouse storage ▪ Knowledge of material handling equipments ▪ Preventive maintenance of material handling equipments ▪ Knowledge of cold storage norms ▪ Management of warehouse suitable for operation and cold storage at the right temperature, humidity and lighting ▪ Accounting knowledge ▪ Knowledge of legal, billing, landing and other documentation associated with logistics ▪ Knowledge of softwares used for warehousing	▪ Restrictions in managing warehouse as per norms ▪ Limited knowledge in legal norms and requirements ▪ Limited preventive maintenance of warehouse equipments

Role, educational qualification	Expected competency	Skill gaps
Warehouse Operator (Any ITI / Diploma/ Unskilled)	▪ Knowledge and skill in using fork lifts, cranes and other lifting equipments ▪ Knowledge of the various areas in a warehouse ▪ Ability to load and unload goods ▪ Ability to count goods loaded and unloaded and check for discrepancies ▪ Ability to do physical work ▪ Accounting goods	▪ Limted knowledge in checking and inspecting goods ▪ Limited knowledge in accounting goods

Table 59: Skill gaps in Merchandising Management of Organised Retail Sector in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Mechandising Manager (Graduate)	▪ Indepth knowledge of stores display system ▪ Ability to identify fast moving/selling goods and create avenues to promote them ▪ Co-branding of goods to boost sales ▪ Ability to gauge customer buying pattern and update goods presentation and availability as per that ▪ Knowledge and skill in stores layout and display layout sytem – maintain dynamism ▪ Plan for stock outs, festival sales, offer sales etc	▪ Understanding the perceived and unstated needs of the customer ▪ Predicting customer behaviour ▪ Assesing customer buying behaviour ▪ Analytical evaluation skills

Role, educational qualification	Expected competency	Skill gaps
	▪ Analytical ability to assess the productivity of different promotions ▪ Deciding bundled sales and their costing ▪ Good communication skills ▪ Good customer interaction skills ▪ Good reporting skills	
Mechandising Executive (Graduate)	▪ Executing merchandising strategy ▪ Skill to observe and understand customer buying behaviour ▪ Liaise with store operations and purchase on goods inventory ▪ Design, update and maintain stores layout and display system ▪ Good reporting skills ▪ Good customer interaction skills ▪ Good communication skills –written and oral	▪ Understanding customer behaviour ▪ Assessment of different store layouts and displays ▪ Customer interaction skills

Table 60: Skill gaps in Store Operations of Organised Retail Sector in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Store Manager (Graduate)	▪ Knowledge day to day operation of the stores ▪ Understand buyer behaviour and decide merchandise and pricing ▪ Use CRM tools to assess buyer behaviour	▪ Understanding customer needs and changes in buying behaviour ▪ Knowledge of comptetitors and their offers

Role, educational qualification	Expected competency	Skill gaps
	and devise strategies ▪ Knowledge of comptetive offereings and strategies ▪ Identify profitable products and promote ▪ Vendor management and logistics management ▪ Inventory management of the store ▪ Shelf life management ▪ Excellent communication skills ▪ Complaint management in the stores ▪ Guide and train store workers ▪ Leadership skills in guiding and motivating sales force	▪ Workforce management and relationship mangement
Sales Executive/ Associate (Any Graduate/ Diploma/ ITI)	▪ Knowledge of the sales process and organisation process ▪ Knowledge of product distribution and display in the stores ▪ Skill in understanding customer requirements and guiding them toward the products, and product promotion ▪ Knowledge of various brands options, comparative features, unique selling proposition of each product, warranty/guarranty information, service information etc ▪ Technical knowledge of products which require the same ▪ Ability to up sell and cross sell	▪ Customer relationship skills ▪ Knowledge of latest product promotion ▪ Inadequate product knowledge ▪ In sufficient oral communication skills

Role, educational qualification	Expected competency	Skill gaps
	▪ Shelf life management of goods ▪ Complaint management ▪ Good communication skills ▪ Knowledge of multiple languages is an added advantage ▪ Pleasing behaviour ▪ Skill in identifying theft and pilferage	
Billing Executive (Graduate/ Diploma/ ITI)	▪ Knowledge of the billing system in place ▪ Good computer skills ▪ Knowledge and honesty in handling credit card, debit card, coupons/cards and cash ▪ Knowledge of offers in the stores ▪ Trouble shooting minor billing issues ▪ Queue management ▪ Good oral skills ▪ Knowledge of multiple languages is an added advantage ▪ Day end tallying and reporting ▪ Skill in identifying theft and pilferage	▪ Inadequate queue management skills ▪ Inadequate knowledge in managing the cash box, billing system, credit card, debit card and other coupons/cards ▪ Limitations in communication systems

5.11. Tourism, Travel, Hospitality and Trade

Bangalore is the gateway to tourists entering Karnataka, the number of tourists arrival in Karnataka has gone up thrice from 27.7 Million in 2004 to 84.6 Million in 2011. This apart, business travellers is also high owing to the IT/ITES, Bio Tech and manufacturing industry concentration; this provides tremendous opportunity for hospitality industry in the state. GIM 2010 has commited Rs 1400 Cr investment in the hospitality sector and GIM 2012 has commited Rs 4400+ crore in the hospitality sector.

Table 61 Tourist arrival at Karnataka

Year	Domestic	Foreign	Total
2004	27,194,178	530,225	27,724,403
2005	30,470,316	545,225	31,015,541
2006	36,195,907	505,524	36,701,431
2007	37,825,953	534,563	38,360,516
2008	12,797,937	174,040	12,971,977
2009	32,701,600	326,900	33,028,500
2010	38,202,100	381,000	38,583,100
2011	84,107,400	574,000	84,681,400

(Source, Department of Tourism, Govt of Karnataka)

The key investment potential for Bangalore districts is in the Hospitality sector owing to the heavy influx of population for business and tourism activities. Bangalore has 2500+ rooms in the Business and luxury category and plans are pipeline to add another 1000 rooms in the next five years.

The hospitality industry emplolys staff in the following categories, F&B Service – 20 per cent, F&B Kitchen – 20 per cent, Housekeeping – 15-20 per cent, Front office per cent, Management – 8 per cent, Engineering – 8 per cent, Purchase and Accounts – 6 per cent, Others (Security, contract) – 10-20 per cent. The key skill gaps in the hospitality sector are,

Table 62: Skill gaps in Hospitality Industry Front Office Operations in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Front Office Manager (Experienced Graduate)	▪ Knowledge of the hotel operations and protocols ▪ Ability to handle multiple customer requirements and needs ▪ Ability to co ordinate different departments of the hotel ▪ Good oral and written communication skills	▪ Team management ▪ Promotion of hotel rooms and sales ▪ Continuing customer relationship management

Role, educational qualification	Expected competency	Skill gaps
	▪ Ability to manage rooms and allocate rooms ▪ Ability to promote sales and increase room occupancy ▪ Good people management skills	
Front Office Assistant (Hotel Management - Graduate/ Diploma)	▪ Knowledge of hotel operations, restraints, local area, tour operators, etc ▪ Ability to handle customer requests ▪ Room allocation management and billing management ▪ Good working relationship with different departments of the hotel ▪ Complaint management ▪ Good communication skills ▪ Knowledge of multiple languages is an added advantage ▪ Pleasing behaviour	▪ More communication skills is expected out of the role ▪ Knowledge of multiple languages is expected ▪ Inadequate knowledge of hotel offerings
Bell Captain (Experienced Graduate/ Diploma)	▪ Identifying guest's requirements and resolving them ▪ Maintaining arrival and departure register ▪ Enable smooth check in and check out ▪ Schedule duties for bell boys ▪ Supervise and manage bell boys ▪ Good communication skills	▪ Management of bell boys ▪ Guest handling
Bell Boys (Graduate/ Diploma)	▪ Recognising guest ▪ Gathering guest requirement and co-ordinate with multiple departments to satisfy the same	▪ In sufficient courtesy and discipline ▪ Inadequate communication skills

Role, educational qualification	Expected competency	Skill gaps
	▪ Ensure safety of luggage in lobby ▪ Good communication skills ▪ Pleasing demeanour	
Travel Desk (Graduate/ Diploma)	▪ Knowledge of multiple methods of transport and ways to book ticket ▪ Comfortable with using computers ▪ Billing, cash, credit/debit card management ▪ Knowledge of tourist locations and attractions ▪ Good communication skills	▪ Inadequate knowledge of tourist locations and formalities ▪ Communication skills

Table 63: Skill gaps in Hospitality Industry Food Production Operations in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Executive Chef/ Head Chef (Experienced Graduate)	▪ Ability to design and prepare multiple cusines ▪ Ability to gauge customer requirements and design food ▪ Good food presentation skills ▪ Knowledge of the history and variation of food and the calorific value ▪ Costing and pricing of food ▪ Inventory management of ingredients ▪ Good people management skills ▪ Good communication skills	▪ Producing innovative menus and multiple cusines ▪ Knowledge of cost and pricing

Role, educational qualification	Expected competency	Skill gaps
Sous Chef (Experienced Catering Graduate/ Diploma)	▪ Assiting head chef and acting on his behalf on his absence ▪ Menu preparation and scheduling ▪ Knowledge of multiple cusines and experience in atleast one variety of cusine ▪ Standardising recipes, dishes etc to produce better value for money ▪ Training kitchen staff ▪ Quality control of food and its taste ▪ Inventory management, safety management and hygiene management ▪ Good communication skills	▪ Menu design and engineering skills ▪ Difficulty in identifying latest food trends
Line Cook (Graduate/ Diploma)	▪ Prepare dishes as per procedure ▪ Knowledge of one or more cusines ▪ Good hygiene and quality standards ▪ Produce less waste and more variety of food ▪ Culinary skills ▪ Time management ▪ Communication skills	▪ Time management ▪ Work Scheduling
Comis (Graduate/ Diploma)	▪ Culinary skills ▪ Good hygiene and quality knowledge ▪ Preparing basic cut ingredients, stock, batter, mixtures, baking, basting etc ▪ Assisting line cook	▪ In sufficient skill in variety of cooking methods
Kitchen Assistant (Diploma)	▪ Cleaning and drying of utensils ▪ Pre processing of raw vegetables, meat and other food articles	▪ Lack of attitude ▪ Limited hygiene levels

Role, educational qualification	Expected competency	Skill gaps
	▪ Cleaning of kitchen area ▪ Maintaining personal hygeine	

Table 64: Skill gaps in Hospitality Industry Food and Beverage Service Operations in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Senior Captain/Captain (Experienced Graduate)	▪ Management of restraurant operations ▪ Inventory management of food and beverages ▪ Manage stewards ▪ Customer Complaint management ▪ Knowledge of cusines, and their culture ▪ Good communication skills ▪ Work scheduling and resource managment	▪ Inadequate customer management ▪ Team management
Senior Steward/ Steward (Hotel Management Graduate/ Diploma)	▪ Taking orders and serving F&B at the tables in professional way ▪ Knowledge of professional catering services ▪ Good interaction skills with customers ▪ Explaining cusines and foods to customers ▪ Customer complaint management ▪ Good relationship with the kitchen ▪ Maintain cleanliness of restaurant, and tables	▪ Knowledge of cusines ▪ Advice guest on menu and choices ▪ Communication issues

Role, educational qualification	Expected competency	Skill gaps
	▪ Billing managment ▪ Knowledge of multiple languages is an added advantage ▪ Pleasing behaviour	
Restraunt Manager (Experienced Graduate/ Diploma)	▪ Identifying guest's requirements and resolving them ▪ Maintaining arrival and departure register ▪ Enable smooth check in and check out ▪ Schedule duties for bell boys ▪ Supervise and manage bell boys ▪ Good communication skills	▪ Management of bell boys ▪ Guest handling
Beverages Manager (Graduate/ Diploma)	▪ Knowledge of different beverages and their tradition ▪ Inventory management of beverages ▪ Costing and pricing of beverages ▪ Manage bartenders and other employees ▪ Customer complaint management ▪ Bar operations management ▪ Good communication skills	▪ In sufficient knowledge of beverages and their history ▪ Customer management
Waiter/ Waitress (Graduate/ Diploma)	▪ Ability to handle food trays and serve customers as per protocol ▪ Ensure good working relationship with the kitchen ▪ Customer feedback management and complaint management ▪ Good communication skills	▪ In sufficient communication skills ▪ Customer interaction skills
Bartender (Certification	▪ Converse with customers and identify their requirements	▪ Knowledge of recent drink mixes and varieties

Role, educational qualification	Expected competency	Skill gaps
Course/ Graduate/ Diploma)	▪ Knowledge and skill in preparing cocktails, mocktails and other drinks ▪ Good showmanship skills ▪ Customer relationship management ▪ Inventory management ▪ Good communication skills	▪ Customer communication skills

Table 65: Skill gaps in Hospitality Industry Housekeeping and Maintenance Operations in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Housekeeping Manager (Experienced Graduate)	▪ Knowledge of the hotel operations and protocols ▪ Knowledge of modern cleaning methodologies and the corresponding chemicals/ equipments used ▪ Ability to handle multiple customer requirements and needs ▪ Ability to co ordinate different departments of the hotel ▪ Customer complaint managemen ▪ Good people management skills	▪ Team management ▪ Customer relationship management
Supervisor Housekeeping/ Floor Manager (Hotel	▪ Schedule housekeeping activities and quality contol of the same ▪ Supervision of housekeeping staff and training of them	▪ More communication skills is expected out of the role ▪ Customer complaint managment

Role, educational qualification	Expected competency	Skill gaps
Management Graduate/ Diploma)	▪ Complaint management ▪ Good communication skills ▪ Knowledge of multiple languages is an added advantage ▪ Pleasing behaviour	
Room Attender (Experienced Graduate/ Diploma)	▪ Clean rooms as per schedule and as per customer requests ▪ Knowledge and skill in cleaning rooms and following protocols ▪ Bed linen/ toiletries/ bath towels managment ▪ Good communication skills	▪ Communication skills and guest interaction skills
Laundry Manager (Graduate/ Diploma)	▪ Inventory management of laundry shop ▪ Knowledge of laundry equipments operation and the chemicals that go with them ▪ Scheduling and supervision of laundry operations ▪ Communication Skills ▪ Quality management of cleaned, and pressed laundry	▪ Quality management of finished laundry ▪ Team management
Laundry Assistant (Graduate/ Diploma)	▪ Collection, sorting and marking of linen ▪ Sluicing, washing, cleaning, drying and pressing of linen ▪ Knowledge of different varietys of cloth and their corresponding requirements ▪ Ability to work in shifts	▪ Knowledge of different varietys of cloth and their corresponding requirements
Maintenance	▪ Ensure smooth operation of all	▪ Inventory and cost

Role, educational qualification	Expected competency	Skill gaps
Manager (Graduate)	engineering activities ▪ Managment of plumbing, electrical, mechanical, carpentry, welding, painting, refrigeration and air conditioning, and electronics of the hotel ▪ Ability to identify the required technology and advice management on investment ▪ Crisis management ▪ Co ordinate with multiple department ▪ Inventory and Cost management ▪ Preventive maintenance and scheduled maintenance ▪ Team management	management ▪ Preventive maintenance ▪ Team management
Electrician/ Pumber/ R&AC/ Electronics/Mechanical/ Carpentry/ Painting (Diploma/ Graduate)	▪ Technical knowledge and skill in the respective domain of operation ▪ Ability to undertake repair work and maintenance work ▪ Undertake Preventive maintenance and scheduled maintenance of the premises ▪ Crisis management and quick problem solving skills ▪ Customer complaint management	▪ Limited technical skills

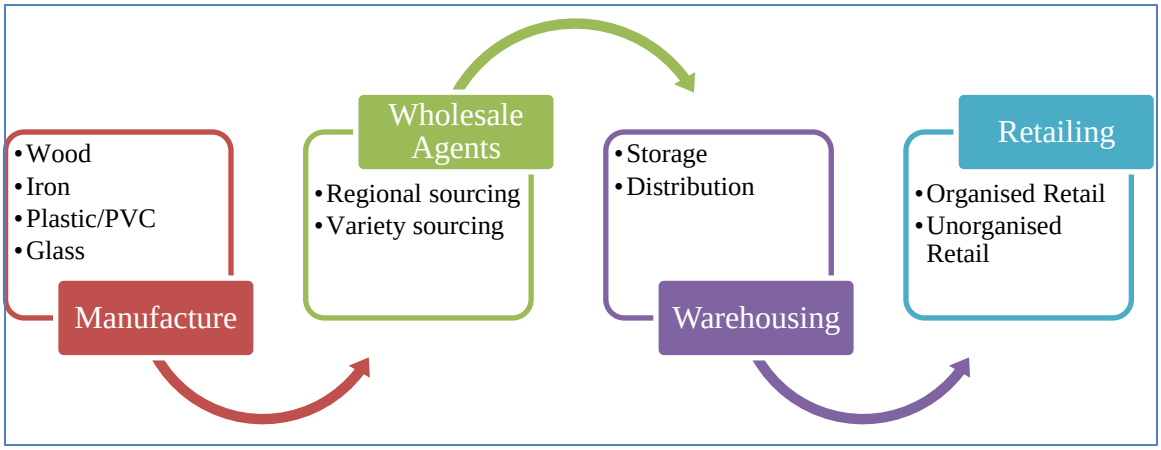
5.12. Furniture and Furnishings

The Furniture and Furnishing industry has seen tremendous growth in the recent days due to the increase in number of employment, IT/ITES/Manufacturing/Other industrial growth, increase in number of households. The furniture industry comprises of wooden furniture, metal furniture and plastic furniture; wooden furniture still occupies 50-60 per cent of all furnitures, followed by metal 25 per cent and plastic 10 per cent and others, the share of wooden furniture though high is coming down in the

value furniture segment owing to the high material cost and is going up in the higher value purchases. More than 70 per cent of the furniture industry in Bangalore is un-organised, Shivaji nagar and surrounding areas are some of the prominent unorganised furniture sales area in Bengaluru; multiple small time manufacturing units are spread across the district from where these shops source their furnitures. Furniture industry is getting organised slowly, some of the leading retailers of furnitures are, Home centre, Damro, Wipro, Zuari, Godrej, Nilkamal, Home town etc. Organised furniture industry sources its goods from across the country and is retailed in prominent locations.

Value chain of Furniture manufacturing and sales,

Figure 44 Value Chain of Furniture Industry



Furnishing industry is primarily sourced from Tamil Nadu, Delhi, Mumbai, Uttar Pradesh, Rajasthan and Haryana; hence it is not covered in this section. Furniture retail is part of organised retail which has been covered earlier; hence only small and medium level unorganised furniture manufacture is covered in this section for skill development.

The key skill gaps in the furniture manufacture sector is,

Table 66: Skill gaps in Furniture Manufacturing Sector in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps

Role, educational qualification	Expected competency	Skill gaps
Factory Manager (Experienced Graduate)	▪ Knowledge of variety of furniture manufacturing techniques ▪ Managment of machine tools associated with manufacture ▪ Knowledge of variety of wood/metal, their property and utilisation ▪ Understand designs and identify market changes ▪ Cost and Price management ▪ Eye for design and furniture trends ▪ Storage and inventory management ▪ Manpower management ▪ Good communication skills	▪ Knowledge of latest designs and utility requirements ▪ Inventory management and storage skills
Pruchase Executive (Any Graduate/ Diploma)	▪ Knowledge of multiple types of wood/ metal/ glass ▪ Deep understanding of the cost of these raw materials ▪ Good working relationship with vendors ▪ Good negotiation skills ▪ Ability to calculate volume of wood/ metal required as per the design and specification ▪ Fault identification in raw materials and quality control ▪ Inventory managment ▪ Documentation & Communication Skills	▪ Calculation of raw material requirement ▪ Inventory management ▪ Negotiation skills ▪ Knowledge of exotic variety of wood and quality management
Factory Supervisor	▪ Knowledge and skill of different operating equipments in the shop floor	▪ Communication skills and workforce management

Role, educational qualification	Expected competency	Skill gaps
(Experienced Graduate/ Diploma)	▪ Schedule and organise work in the factory ▪ Supervise work schedule and manage resources ▪ Inventory management ▪ Work force management ▪ Good communication skills	
Carpenter (Un skilled/ Diploma/ ITI)	▪ Knowledge of wood types and their properties ▪ Wood working knowledge ▪ Knowledge of dimensions and tools associated with them ▪ Knowledge and skill in different variety of cuts, joints, sanding, polishing, varnishing etc ▪ Knowledge of paints, varnishes and application techniques ▪ Knowledge of different wood working machinery and their operation	▪ Operation of all types of wood working machine tools ▪ Knowledge of variety of wood and their properties ▪ Advanced skill in different wood working techniques
Metal Worker (Un Skilled/ Diploma/ ITI)	▪ Skill in metal cutting, drilling, joining, welding, butting techniques etc ▪ Skill in understanding designs and dimensions ▪ Skill in identifying the steps involved in manufacture and producte the same ▪ Knowledge and skill in paints and their applications ▪ Knowledge of various machine tools involved in manufacture of furnitures	▪ Knowledge of metal working techniques ▪ Punctuality and safety management

Role, educational qualification	Expected competency	Skill gaps
	▪ Physical stamina ▪ Glass cutting and polishing	

5.13. Logistics and Warehousing

Logistics and Warehousing (L&W) are components of Supply Chain Management (SCM) involved in storage, transfer and distribution of goods, similar to SCM value chain L&W activities involve two way flows of finance, information and material. Irrespective of the nature of physical goods, all of them need to be transported, stored and distributed; with the spurt in organised retail, distance between mass manufacturing plant to consumer, sophisticated preferences of consumer/customer, the involvement of organised logistics and warehousing has multiplied many times. The transportation and logistics sector contributes to approximately 13-15 per cent of our GDP. Internal logistics of raw material and finished goods are done through Road - 60-70 per cent, Rail – 15-20 per cent, Water – 10-15 per cent and Air – 10-15 per cent.

Warehouses are of multiple types including distribution warehouse, consolidation/fulfilment warehouse, providing value added services, cross docking and trans shipment warehouse, break bulk warehouse, storage warehouse. This apart there are Third Party Logistics (3PL) providers who manage completely the transportation and logistics for a company, there are Fourth Party Logistics (4PL) providers who provide the whole Supply Chain Management of a company and there are Fifth Partly Logistics (5PL) who provide the whole chain for a E-Business chain.

For our study we have considered road transporatation, and warehousing as, rail transporatation is mostly with the Government, bulk of air transportation operation is warehousing based.

Table 67: Skill gaps in Road Logistics Sector in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps

Role, educational qualification	Expected competency	Skill gaps
Operations Manager/ General Manager/ Manager (Experienced Graduate) (Positions holding increasing responsibility)	▪ In depth knowledge of multimodal logistics and the role and resposbibility of 3PL/4PL/5PL ▪ Knowledge of taxation and documentation in different states and countries ▪ Ability to undertake fleet management, scheduling, routing and optimisation ▪ Knowledge and skill of GPS, LMS, WMS and other IT tools ▪ Skill to interact with customs, warehousing agencies, ports, air freight etc ▪ Costing and pricing of logistics service ▪ Manpower management ▪ Good communication skills	▪ Knowlege of optimising logistics cost ▪ Optimising logistics network ▪ In sufficient knowledge of taxation procedures, and docuemtation procedures
Supervisor (Any Graduate/ Diploma)	▪ Monitoring and evaluation of inbound and outbound movement of goods ▪ Route planning and scheduling ▪ Monitoring of material handling practices ▪ Optimisation of truck utilisation time by managing, upload, and download of goods and routing ▪ Knowledge of interstate and inter country transportation and taxation laws ▪ Knowledge in preparing documentation required for movement of goods ▪ Ability to track and trace documents and logistics in movement	▪ Limited knowledge of interstate and inter country transportation and taxation laws ▪ Time management ▪ Route optimisation of trucks and vehicles

Role, educational qualification	Expected competency	Skill gaps
	▪ Understanding the over all supply chain concepts and the cost implications ▪ Inventory managment ▪ Documentation & Communication Skills	
Truck Driver (Driver -10th Pass + Valid Driving Licence for the category of vehicle	▪ Knowledge of maps, routes and safe driving procedures ▪ Skilled driving ability ▪ Basic knowledge and skill in vehicle repair and maintenance ▪ Knowledge of interstate documentation procedures ▪ Basic reading and writing knowledge to read signages, documentation, taxes etc ▪ Knowledge of safety management of type of goods carried ▪ Good physical health to endure long hours of driving ▪ Basic communication skills ▪ Basic first aid knowledge and knowledge of personal hygeine	▪ Knowledge of documentation and interstate taxation ▪ Inadequate knowledge of first aid and hygiene management ▪ Ignorance to safe driving practices ▪ In sufficient knowledge of hazardous material handling practices ▪ Low motivational levels
Helper (Any school education)	▪ Basic driving skills ▪ Basic vehicle management and maintenance skills ▪ Knowledge of safety signs ▪ Fire fighting skills ▪ Material handling skils ▪ Knowledge of safety management of type of goods carried	▪ Inadequate knowledge of first aid and hygiene management ▪ Ignorance to safe driving practices ▪ In sufficient knowledge of hazardous material handling practices ▪ Low motivational levels

Role, educational qualification	Expected competency	Skill gaps
	▪ Good physical health to endure long hours of driving ▪ Basic communication skills ▪ Basic first aid knowledge and knowledge of personal hygeine	

Table 68: Skill gaps in 3PL & Warehouse Management Sector in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Warehouse Manager / Warehouse Supervisor/Executive (Graduate) (Varying degrees of the same skill)	▪ Management of warehouse and its operations ▪ Guide the employees in warehouse storage ▪ Knowledge of material handling equipments ▪ Preventive maintenance of material handling equipments ▪ Knowledge of cold storage norms ▪ Management of warehouse suitable for operation and cold storage at the right temperature, humidity and lighting ▪ Accounting knowledge ▪ Knowledge of legal, billing, landing and other documentation associated with logistics ▪ Knowledge of softwares used for	▪ Restrictions in managing warehouse as per norms ▪ Limited knowledge in legal norms and requirements ▪ Limited preventive maintenance of warehouse equipments

Role, educational qualification	Expected competency	Skill gaps
	warehousing	
Import Export Manager / Supervisor (Graduate) (Varying degrees of the same skill)	▪ Knowledge of Logistics mode and warehousing activities ▪ Knowledge of inter country, inter state taxation laws, lead time, waiting time, and documentation ▪ Knowledge and skill in optimising logistics and warehouse cost ▪ Ability to negotiate with clients, customers, customs, government officials, Warehousing agents, brokers, bond agents ▪ Inter departmental co ordination skill ▪ Good written and oral communication skills	▪ Inability to co ordinate different departments ▪ Logistics and warehousing cost optimisation ▪ Negotiation skills
Warehouse Executive (Graduate)	▪ Knowledge of inter state and inter country taxes and documentation ▪ Being versatile with computers and the software used for logistics and warehouse management ▪ Ability to co ordinate finance, material and information flow ▪ Ability to provide schedule, routing and storage instructions ▪ Ability to interact with multiple departments and agencies for 3PL, logistics and warehouse operations ▪ Good written and oral communication	▪ Inadequate interdepartmental co ordination skills ▪ Inadequate route optimisation skills ▪ Inadequate communication skills

Role, educational qualification	Expected competency	Skill gaps
	skills	
Warehouse /Stores Operator (Any ITI/Diploma/ Unskilled)	▪ Knowledge and skill in using fork lifts, cranes and other lifting equipments ▪ Knowledge of the various areas in a warehouse ▪ Ability to load and unload goods ▪ Ability to count goods loaded and unloaded and check for discrepancies ▪ Ability to do physical work ▪ Accounting goods	▪ Limted knowledge in checking and inspecting goods ▪ Limited knowledge in accounting goods

5.14. Media and Entertainment

Media and entertainment sector comprises of print media, films, television, radio, animation, out of home advertising, internet advertising, radio and music industry.

Fim industry on an average provides 20 per cent of the employment in the media and entertainment industry in the country, the Karnataka film industry is one of the well established and oldest in the country. The Kannada film industry produces more than 100 films every year and these are screend in 600+ theatres across the state. This sector provides employment in film conception, film production, post production, distribution and collection activities.

Karnataka consumes most of the major English print media of the country including The Hindu, The Times of India, Business Line, Indian Express, Deccan Chronicle, DNA India, India Today, The Economist etc. This apart there is a deep penetration of Kannada print media including, Kannada Prabha, Prajavani, Vijaya Karnataka, Varthabharathi, Sanjeevani, Kranti Kannada Daily, Udayavani etc. The sector provides employment in news reporting, photography, content creation, news editing, news printing, packaging, and distribution of news print.

The Television sector of Karnataka has the presense of all major national English and Hindi news and entertainment channels including Sony group, Star group, National Geographic, Zee group etc. This apart the Kannada television setor is a vibrant community with more than 20 channels dedicated to the language including, Asianet Suvarna, Chintu TV, DD Chandana, ETV Kannada, Janashri news, Kasthuri TV, Public TV, Raj Music Kannada, Samaya TV, TV9 Kannada, Suriyan TV and Udaya channels. Employment in television segment involved profiles in content generation, shooting, direction, editing, post processing, animation, distribution and transmission.

The opening up of the FM radio industry in 2000, saw the entry of private radio industry in Karnataka, it houses all prominent national radio channels including Radio City, Radio Indigo, Big FM, Radio One, South Asia FM, Radio Mirchi, Fever FM, Gyan Vani, All India Radio and other online radio stations. The industry provides employment as content producers, news editors, radio jockeys, copy writers, news reporters, news readers, advertising sales, technical personnel in base station and other stations.

The animation and gaming industry has emerged as a major industry with the boost in IT/ITES services in the country. The major animation and design studios in Bangalore are, Marvel Studios, Walt Disney, Spectauclar CG, Admire works, VALVO, Arena Multimedia, Xentrix Studios, Zynga, ZVKY etc. The employment opportunities in animation and gaming industry includes, script writing, story boarding, modelling, rigging, animators, compositors and programmers.

The key skill gaps in the Film Productoin and Television Sector is similar and they are,

Table 69: Skill gaps in Film Production and Television Sector in Bangalore Urban District

Role, educational qualification	Expected competency	Skill gaps
Producer (Graduate/ Diploma / Several Non Graduates in field also)	▪ Thorough knowledge of the components of film production and TV programme production ▪ Knowledge of the evolving taste and inclinations of the people ▪ Thorough understanding of the industry	▪ Knowledge of emerging trends and societial requirements ▪ Production co ordination ▪ Time management ▪ Cost and Finance management

Role, educational qualification	Expected competency	Skill gaps
	and the various sections which work together ▪ Team management ▪ Negotiation skills ▪ Budgeting skills ▪ Marketing and Distribution skills ▪ Financing skills	
Director (Graduate/ Several Non Graduates in field also)	▪ Ability to conceive an idea and develop into a story ▪ Identification of apt crew and cast for the production ▪ Identification of location and background for every scene ▪ Work on post production and fine tune the film ▪ People management and co-ordination	▪ Creativity skill ▪ Application of modern methods of film post production ▪ Inability to understand changing values and requirements of the society
Writer (Graduate/ Diploma / Several Non Graduates in field also)	▪ Creative writing skills ▪ Originality in writing skills ▪ Story telling skills ▪ Ability to bring in the societial requirements, changes and evolutions in the story	▪ Originality of work
Script Writer (Graduate/ Diploma / Several Non Graduates in field also)	▪ Ability to take a story and evolve it into production material ▪ Ability to visualise a film/ TV piece out of a story ▪ Ability to use story board software ▪ Ability to keep the story interesting and gripping	▪ Originality of work ▪ Usage of story boarding tools

Role, educational qualification	Expected competency	Skill gaps
	▪ Ability to bring in the societial requirements, changes and evolutions in the story	
Assistant Director (Graduate/ Diploma / Several Non Graduates in field also)	▪ Ability to co-ordinate work from different departments and enable shooting ▪ Time management ▪ Resource management ▪ Logistics of shooting management ▪ Ability to undertake works assigned by the Director ▪ Good communication skills ▪ Skill sets of a Director on a limited scale	▪ Men, Material co-ordination skills ▪ Planning, time management and resource management techniques
Art Director (Graduate/ Diploma / Several Non Graduates in field also)	▪ Visualise the art requirements for the scene being enacted ▪ Prepare the props, sets and environment as per the secene requirement ▪ Deep understanding and working knowledge in graphics, art, craft and animation ▪ Ability to blend lighting, makeup, scene, shooting to produce the best possible outcome ▪ Good communication skills ▪ Good leadership and co ordination skills	▪ Inadequate knowledge of arts ▪ Insufficint knowledge of latest animation techniques
Cinematographer (Graduate/ Diploma / Several Non Graduates in field also)	▪ Photography and videography skills ▪ Knowledge and skill of lighting ▪ Ability to supervise lab work ▪ Ability to enhance the visual appeal of the scene	▪ Knowledge of camera, latest technology, visualising the scene etc.

Role, educational qualification	Expected competency	Skill gaps
	▪ People management skills ▪ Skills with using variety of cameras	
Sound Engineer/Editor (Graduate/ Diploma)	▪ A deep understanding of sounds and their application in visual media ▪ Knowledge and skill in recording various sounds ▪ Modulation of sound as per the scene and mood of the scene ▪ Knowledge and skill in working with the tools used for sound engineering ▪ Mixing of sounds to create engineering sounds ▪ Recording technology	▪ Creative knowledge of sound and sound mixing
Editor / Sub Editor (Graduate/ Diploma)	▪ Ability to understand the movie/scene and the outcome which is expected out of the visual ▪ Ability to remove scenes which do not add value to the film/production ▪ Ability to synchronise the film such that it remains interesting and appealing ▪ Synchronisation of visual and aural scenes	▪ Inability to maintain the flow of the piece ▪ Inadequte technical knowledge
Music Director (Graduate/ Diploma / Several Non Graduates in field also)	▪ Ability to compose music as the scene of the film/TV production demands ▪ Ability to use variety of instruments ▪ Creativitiy ▪ Ability to combine different music instruments to produce the right sound required	▪ Natural art profession, skill development not necessary

Role, educational qualification	Expected competency	Skill gaps
Set Builder (Graduate/ Diploma / Several Non Graduates in field also)	▪ Ability to visualise the scene and create the necessary art forms ▪ Ability to covert the requirements of art director into visual forms ▪ Ability and creativity to work with multiple materials ▪ People management skills	▪ Ability to work with multiple materials
Cameraman (Graduate/ Diploma / Several Non Graduates in field also)	▪ Photography and videography skills ▪ Knowledge of camera angles, stills, lighting etc ▪ Knowledge and skill in operating multiple camera formats ▪ Capability to innovate with different cameras and shots ▪ Ability to visualise the scene and do the shooting as per that	▪ Skill with camera ▪ Scene lighting
Costume Designer (Graduate/ Diploma / Several Non Graduates in field also)	▪ Ability to understand the scene, situation, actor in place and design the costume as per that ▪ Ability to work with multiple textures, colours and clothing materials ▪ Stitching and embroidery skills ▪ Knowledge of pattern development, fashion, textile and drafting the model ▪ Enhance character as per the visual and as per reflection of the society	▪ Ability mix and match colours ▪ Ability to bring out the character through costumes
Make up Person (Graduate/ Diploma / Several	▪ Skill in improving the looks of the actor ▪ Ability to hide any imperfections in the skill	▪ Ability to do advanced makeup for complex characters like old age, scars, tissue morphing etc

Role, educational qualification	Expected competency	Skill gaps
Non Graduates in field also)	▪ Abilty to create visual elements like scars, burns, marks etc ▪ Knowledge of different make up and grooming techniques	
Choreographer (Graduate/ Diploma / Several Non Graduates in field also)	▪ Ability to compose dance moves as per the music, song and theme of the music ▪ Ability to teach the dance moves to multiple people ▪ Ability to bring out expressions during dancing ▪ Ability to constantly innovate	▪ Ability to constantly innovate
Stunt Co ordinator (Graduate/ Diploma / Several Non Graduates in field also)	▪ Ability to choreograph the stunt scenes as per the requirement ▪ Bring in creativity in designing the stunts ▪ Usage of different props, water, fire, ariel movments during the scene ▪ Safety and security during stunts	▪ Ability to bring in creativity during the stunts
Distributor (Graduate/ Diploma/ Several Non Graduates in field also)	▪ Ability to pick the right movie which the public would want to watch ▪ Marketing and sales skills ▪ Financial ability ▪ Negotiation skills ▪ Good communication skills	▪ Inability to pick the right movie ▪ Inability to co ordinate cinema owners
Cinema Manager (Graduate/ Diploma)	▪ Marketing and sales of cinema ▪ Understanding the requirements of the society and public ▪ Identify loop holes in the cinema and trouble shoot ▪ Enact marketing initiatives like music	▪ Inadequate industry knowledge and personal interaction skills ▪ Inadequate managerial skills

Role, educational qualification	Expected competency	Skill gaps
	launch, movie lauch ▪ Negotiate with print, advertising, online, radio media for promotion ▪ Strong communication skills	

Table 70: Skill gaps in Animation and Game Development Sector in Bangalore Urban District

Role, educational qualification	Expected competency	Skill gaps
Script Write (Graduate/ Several Non Graduates but certificate holders in field also)	▪ Creative writing skills ▪ Originality in writing skills ▪ Story telling skills ▪ Ability to bring in the societial requirements, changes and evolutions in the story	▪ Innovative story telling ability
Story Boarder (Graduate/ Several Non Graduates but certificate holders in field also)	▪ Ability to take a story and evolve it into production material ▪ Drawing and designing skills ▪ Ability to visualise the scene with music, dialogue, costume and background. ▪ Ability to use story board software ▪ Ability to keep the story interesting and gripping ▪ Ability to bring in the societial requirements, changes and evolutions in the story	▪ Inadequate drawing skills ▪ Inadequate ability to bring out the emotion of the story
Modeller (Graduate/	▪ Ability to convert concept into a model ▪ Create physical models	▪ Knowledge of colours, lighting and cinematography

Role, educational qualification	Expected competency	Skill gaps
Several Non Graduates but certificate holders in field also)	▪ Design the model using IT tools ▪ Knowledge of colours, lighting and their composition ▪ Cinematography skills ▪ Ability use multiple desining tools like 3DS Max, Maya etc	▪ In sufficient modelling tool knowledge ▪ Erroneous understanding that knowing the software tool can create modellors
Rigger (Graduate/ Several Non Graduates but certificate holders in field also)	▪ Ability to create facial animation ▪ Produce animator friendly rigs ▪ Develop realistic looking rigs ▪ Work with modelling softwares ▪ Ability to work with Mel/Python scripts	▪ Detailing skills ▪ Lighting and animation skills
Animators (Graduate/ Several Non Graduates but certificate holders in field also)	▪ Ability to manoeuvre the animation on screen ▪ Manage lighting and cinematography ▪ Bring out the emotion from the character ▪ Familiarity with post production work ▪ Lighting, cinematography and camera knowledge	▪ In sufficient lighting, cinematography, emotion development skills
Compositors (Graduate/ Several Non Graduates but certificate holders in field also)	▪ Ability to blend computer generated image with live footage ▪ Ability to provide special effects like surrounding, explosion etc ▪ Knowledge of related software	▪ Inadequate knowledge of tools used for composition ▪ Inadquate visualisation skills

Role, educational qualification	Expected competency	Skill gaps
Game Designers (Graduate/ Several Non Graduates but certificate holders in field also)	▪ Ability to conceive the game, it rules, its set up, the environment and the participants ▪ Design the characters and their capabilities ▪ Creative capabilities ▪ Game set up design	▪ Knowledge of softwares used for animation and design
Programmers (Graduate/ Several Non Graduates but certificate holders in field also)	▪ Software engineering skills ▪ Behavioural Modelling ▪ Graphics programming ▪ Network programming ▪ I/O programming	▪ Inadequate aesthetic sense ▪ Inadequate knowledge of gaming

Table 71: Skill gaps in Radio Sector in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Radio Jockeys (Graduate/ Diploma/ Several Non Graduates but naturally skilled personnel in field also)	▪ Enthusiastic and high energy interactive skills ▪ Good command over the primary communication knowledge ▪ Ability to interact with a large audience with varied background ▪ Ability to be creative with language and usage of words and creating styles ▪ Ability to comprehend various issues and	▪ Insufficient soft skills ▪ Insufficient creativity with language and format

Role, educational qualification	Expected competency	Skill gaps
	provide their views	
Producers (Graduate/ Diploma/ Several Non Graduates but naturally skilled personnel in field also)	▪ Ability to conceive radio segments ▪ Ability to co-ordinate the requirements for producing the radio segment ▪ Knowledge of the culture of the public and the changing requirements of the society ▪ Ability to coordinate with multiple resources and realise the product ▪ Ability to finance the project ▪ Ability to market and sell the radio segment	▪ Knowledge and pulse of public/society ▪ Team work and resource management
Copy writers (Graduate/ Diploma/ Several Non Graduates but naturally skilled personnel in field also)	▪ In depth knowledge of the primary working language ▪ Formal and informal writing and listening skills ▪ Ability to convert ideas to dialogues/references ▪ Team work capability with producer, radio jockey and others	▪ Insufficient knowledge of the language ▪ Lack of creatitvity
News Reader (Graduate/ Diploma/ Several Non Graduates but naturally skilled personnel in field also)	▪ Excellent command on the primary language and diction ▪ Ability to change the modulation, accent and pronounciation ▪ Knowledge of current affairs national and international ▪ Knowledge to interact with public figures and public	▪ Command over language ▪ Creative interactive ability

Role, educational qualification	Expected competency	Skill gaps
News Reporter (Graduate/ Diploma/ Several Non Graduates but naturally skilled personnel in field also)	▪ Ability to collect news ▪ Report news in the prescribed format ▪ Followup with the information and verify the veracity of the information and claim ▪ Ability to interact with multiple people and generate information ▪ Ability to manage a good information network ▪ Strong command over language	▪ Deciding the reporting angle of the story ▪ In depth language skills ▪ Information sourcing
News Editor (Graduate/ Diploma/ Several Non Graduates but naturally skilled personnel in field also)	▪ Strong writing and editing skills ▪ Understanding of the point of reporting and assess the same ▪ Understand the content of the writing and assess the emotional turnout because of it ▪ Ability to covert a story into an interesting reporting material ▪ Understanding of the social and societial needs ▪ Deep understanding of the segment of specialisation eg politics, sports, etc	▪ Creative skills

Table 72: Skill gaps in News Print Sector in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
News Editor (Graduate/ Diploma/	▪ Strong writing and editing skills ▪ Understanding of the point of reporting and assess the same	▪ Creative skills

Role, educational qualification	Expected competency	Skill gaps
Several Non Graduates but naturally skilled personnel in field also)	▪ Understand the content of the writing and assess the emotional turnout because of it ▪ Ability to covert a story into an interesting reporting material ▪ Understanding of the social and societial needs ▪ Deep understanding of the segment of specialisation eg politics, sports, etc ▪ Co-ordination with different departments for printing the segment	
News Reporter (Graduate/ Diploma/ Several Non Graduates but naturally skilled personnel in field also)	▪ Ability to collect news ▪ Report news in the prescribed format ▪ Followup with the information and verify the veracity of the information and claim ▪ Ability to interact with multiple people and generate information ▪ Ability to manage a good information network ▪ Strong command over language	▪ Deciding the reporting angle of the story ▪ In depth language skills ▪ Information sourcing
News Print Supervisor/ Manager (Graduate/ Diploma)	▪ Ability to convert news segments into printable format ▪ Manage the workers in the factory ▪ Inventory management and resource management ▪ Good communication skills ▪ Time management to meet the daily delivery schedule	▪ People management skills ▪ Time managment

Role, educational qualification	Expected competency	Skill gaps
Computer Designer (Degree/ Diploma/ Certificate holder)	▪ Layout drafting and designing ▪ Designing news headlines and incorporating pictures ▪ Layout variety of news, advertisements etc ▪ Knowledge of softwares and tools used for the same ▪ Time managment	▪ Innovative layout designing capability
Factory Worker (Diploma/ITI)	▪ Day to day Operation of printing machine ▪ Input and Output management ▪ Basic maintenance of the printing machines	▪ Trouble shooting of printing machines

5.15. Un Organised Sector

Bangalore Urban and Rural districts are the economic nerve centres of the State and hence provide tremendous potential for the Un-organised Sector. The total employment in the unorganised sector is estimated to be 420 million (92 per cent) out of the 450 million workforce of 2008 in India. Almost every sector including textiles & clothing, manufacturing, agriculture, food processing, it, pharmaceuticals, construction, hospitality etc provide un-organised employment and this sector supports the smooth functioning of the organised sector. The un-orgnaised sector could be either in the form of self employment (Eg. pressing clothes, laundry, electrician, domestic worker etc) or in the form of employment with an organisation (Eg. helper, assistant etc). The significant employment generators out of the above for Bangalore Urban and Rural districts are,

1. Building, Construction and Real estate
2. Textile and Clothing
3. Transporatation Logistics and Warehousing
4. Furniture and Furnishings
5. Domestic Workers

6. Beauticians
7. Facility Managment
8. Security Guard

Table 73: Skill gaps in Un-Organised Employment of Building, Construction and Real Estate in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Skilled workmen (Plumber, Electrician, Mason, Bar Bender, Carpenter, Painter – Formally educated/ Experienced)	▪ Knowledge and skill in their specific field of specialisation (Eg, Mason should be skilled in cement mixture norms, levelling, concreting, etc Plumber should have knowledge of plumbing equipments, drawings, piping etc) ▪ Working as a team and co-ordination ▪ Communication skills ▪ Safety and quality norms ▪ Basic knowledge of general construction techniques ▪ Ability to use material handling equipments ▪ Time management	▪ Inadequate knowledge in their specific area of skill ▪ Time management and target management ▪ Co-ordination skills with other skilled teams
Un skilled Worker (Helpers)	▪ Executing the excavation, carrying of load, cutting, mixing concrete/cement mixture, packing etc ▪ Ability to perform manual labour intensive work ▪ Comprehend instructions and act accordingly ▪ Understand safety norms and act	▪ Limited safety orientation ▪ Work place discipline management ▪ High attrition

Role, educational qualification	Expected competency	Skill gaps
	accordingly ▪ Ability to take instructions from skilled workers and other supervisors ▪ Work place management and cleanliness	

Table 74: Skill gaps in Un-Organised Employment of Apparel Manufacturing Sector in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Silk weavers	▪ Operating of looms ▪ Maintenance of loom ▪ Deducting weaving defects ▪ Ability to find out the reason for loom stoppage and rectifying ▪ Knowledge to offer different products ▪ Marketing skills ▪ Quality checking ▪ Packaging	▪ Ability to transform from traditional looms to automated looms ▪ Limited understanding of the 52 steps in silk weaving ▪ Limited formal training apart from the employed company ▪ Training is required on usage of computers in designing ▪ Ability to create diversified products – new varieties, silk by jute / silk by cotton products ▪ Export market awareness ▪ Dying techniques ▪ Processing techniques in terms of finishing and packaging ▪ Embroidery training
Operators /	▪ Proficiency in tailoring / stitching is	▪ Limited supply of tailoring

Role, educational qualification	Expected competency	Skill gaps
tailors (illiterate to 10th pass)	required for stitching garments with different specifications. ▪ Good machine control – knowledge of threading of sewing machine, stitching on different shapes, seaming garment components together in various fabrics to specified quality standard ▪ Knowledge of machine maintenance procedures ▪ Knowledge of pattern making, grading and draping ▪ Ability to understand instructions properly and stitch the garments based on them. ▪ Ability to work in teams / inter-personal skills. ▪ Soft skills	students from government facilities ▪ There are only 42 seats for dress making and 21 seats for fashion designing in Bangalore ITIs ▪ Limited knowledge of operating machines ▪ Inadequate knowledge of basic machine maintenance ▪ Quality inspection knowledge ▪ High attrition of tailors for minimal wage hike
Helpers (illiterate to 10th pass)	▪ Ability to cut the cloth based on specifications. ▪ Ability to button the stitched garments. ▪ Ability to put labels on the stitched garments. ▪ Ability to iron the ready garments properly. ▪ Ability to iron the garments ▪ Ability to pack the garments in bundles	▪ Basic skills required for this profile, for which no / minimal training required. Mostly provided easily on the job.

Table 75: Skill gaps in Un-Organised Employment of Furniture and Furnishing Sector in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Carpenter (Un skilled/ Diploma/ ITI)	▪ Knowledge of wood types and their properties ▪ Wood working knowledge ▪ Knowledge of dimensions and tools associated with them ▪ Knowledge and skill in different variety of cuts, joints, sanding, polishing, varnishing etc ▪ Knowledge of paints, varnishes and application techniques ▪ Knowledge of different wood working machinery and their operation	▪ Operation of all types of wood working machine tools ▪ Knowledge of variety of wood and their properties ▪ Advanced skill in different wood working techniques
Metal Worker (Un Skilled/ Diploma/ ITI)	▪ Skill in metal cutting, drilling, joining, welding, butting techniques etc ▪ Skill in understanding designs and dimensions ▪ Skill in identifying the steps involved in manufacture and producte the same ▪ Knowledge and skill in paints and their applications ▪ Knowledge of various machine tools involved in manufacture of furnitures ▪ Physical stamina ▪ Glass cutting and polishing	▪ Knowledge of metal working techniques ▪ Punctuality and safety management
Helpers (illiterate to	▪ Ability to cut the wood based on instruction	▪ Basic skills required for this profile, for which no / minimal

Role, educational qualification	Expected competency	Skill gaps
10th pass)	▪ Ability to polish using sand paper ▪ Ability balance wood / steel/ other material during cutting and machining process ▪ Ability to clean the work place ▪ Ability to identify raw material and arrange semi finished and finished goods ▪ Ability to loading and unload goods	training required. Mostly provided easily on the job.

Table 76: Skill gaps in Un-Organised Employment of Domestic Workers Sector in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Food Preparation / Kitchen work	▪ Ability to maintain safety and hygiene while performing kitchen duties ▪ Knowledge of kitchen equipments such as cooker, microwave oven,fridge, etc. ▪ Ability to avoid wastage ▪ Ability to follow instructions ▪ Ability to managing multiple kitchen functions ▪ Ability to assist in managing ▪ Basic ability to read and write – so as to read the labels on boxes, prepare a list of items to be procured by the employers, etc.	▪ Inadequate ability to perform multiple functions ▪ Inadequate knowledge of kitchen machines / equipment ▪ Inadequate ability to follow basic safety and hygiene practices ▪ Inadequate ability to prepare different cuisines ▪ Inadequate basic reading / writing knowledge ▪ Inadequate ability to prepare food with different amounts of spices

Role, educational qualification	Expected competency	Skill gaps
Cleaning	▪ Ability to assist in housekeeping functions ▪ Knowledge of using and to maintain safety while using cleaning equipment's such as acid, vacuum cleaners, etc. ▪ Ability to pay attention to details – e.g. cleaning the corners of floors,cleaning under cupboards, etc. ▪ Ability to follow instructions ▪ Knowledge of which detergents to use for which kinds of clothes ▪ Knowledge of how to dry different types of clothes – e.g. In the sun / in the shade, inside-out, etc. ▪ Ability to be careful while dusting delicate items / showpieces ▪ Ability to place utensils properly after cleaning, such that they dry	▪ Inadequate knowledge of cleaning specific types of utensils / crockery – e.g. glassware, non-stick cookware, etc ▪ In adequate ability to handle fragile items with care ▪ Inadequate ability to place things back in the proper places / in the correct orientation after cleaning / dusting ▪ Inadequate ability to use the right soap / right quantity of soap for cleaning ▪ Inadequate ability to wash different types of clothes separately, as required ▪ Inadequate ability to ensure thorough fast cleaning of utensils – for e.g. all cleaning material is not cleaned off well and some remains on the utensils
Child Care and Elderly Care	▪ Ability to undertake child care and manage elderly people ▪ Ability to read simple instructions ▪ Ability to be vigilant ▪ Ability to understand the needs of babies /	▪ Inadequate knowledge and ability to manage child care and take care of elderly people ▪ Inadequate empathy towards children and elderly people

Role, educational qualification	Expected competency	Skill gaps
	elderly people ▪ Ability to ensure proper safety measures ▪ Ability to teach children ▪ Ability to play with children ▪ Ability to understand food habits of children and elderly people ▪ Ability to administer proper medication to children and elderly people ▪ Ability to understand cultural differences while dealing with elderly people	▪ Inadequate ability to bond with the child ▪ Inadequate consciousness of time
Outside Work (work requiring interface with persons/parties outside of the household)	▪ Ability to undertake basic courier, banking and purchase work ▪ Ability to read and write English/ Hindi/Kannada ▪ Ability to perform simple calculations ▪ Ability to use basic communication tools such as telephones	▪ Inadequate knowledge and competency to undertake outside work ▪ Lack of knowledge of English and Hindi

Table 77: Skill gaps in Un-Organised Employment of Beauticians Sector in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Hair Stylist	▪ Ability to administer variety of hairstyles ▪ Ability to keep the work place clean and sanitise tools, such as scissors and combs ▪ Ability to analyse hair and physical features of clients and suggest hair styles	▪ Insufficient knowledge on latest techniques and styles ▪ Inadequate creativity ▪ Inadequate knowledge in using modern tools for hair styling

Role, educational qualification	Expected competency	Skill gaps
	▪ Ability to shampoo, rinse, condition and dry hair and scalp with water ▪ Ability to undertake a range of basic hair styles for both, men and women, using clippers, scissors, etc. ▪ Ability to use trimmers and razors without injuring the client's face ▪ Ability to undertake hair massage ▪ Ability to select hair colours ▪ Ability to bleach, dye, or tint hair using applicator or brush ▪ Ability to change the structure of hair to gain alternative look, such as perming, straightening, etc ▪ Ability to undertake treatment of scalp ▪ Knowledge of chemicals used and their effects ▪ Ability to change the appearance as desired by the client through a combination of hair colouring, hair cut and hair texture methods ▪ Knowledge of trends and fashion ▪ Ability to demonstrate and sell hair care products and cosmetics ▪ Ability to develop new styles and techniques ▪ Adequate communication skills to understand customer requirements and	▪ Insufficient knowledge of safety methods and procedures ▪ Inadequate ability to analyse and help the customer in selecting suitable hair style, leading to the tendency to suggest basic hair styles such as like U cut, straight cut or step cut ▪ Inadequate communication skills

Role, educational qualification	Expected competency	Skill gaps
	discuss options with the client	
Beautician	▪ Ability to be well-groomed and have a sense of hygiene and cleanliness ▪ Basic knowledge of chemistry and the human body ▪ Ability to undertake eyelash and eyebrow colouring and shaping (threading) ▪ Ability to undertake manicure and pedicure, without hurting the hands and legs while using the blade ▪ Ability to undertake cosmetic make-up including tanning treatments, face and body painting, 'mehandhi' / 'henna' skin decoration ▪ Ability to undertake temporary hair removal by waxing face, legs, arms, etc. ▪ Ability to undertake facials involving cleansing, massaging, black/white head removal and toning the skin ▪ Stamina to remain standing during most part of the day ▪ Knowledge of and ability to undertake first aid, if required	▪ Inadequate communication skills ▪ Insufficient analytical skills to understand the skin type and giving suggestions accordingly ▪ Inadequate ability to undertake different types of makeup – e.g. natural makeup, evening makeup, bridal makeup etc. ▪ Inadequate ability to understand the chemical combinations that are being used and its reactions ▪ Insufficient knowledge of first aid
Reflexologist	▪ Ability to undertake massaging ▪ Ability to apply the right quantity of oil to create the required amount of friction and pressure	▪ Inadequate scientific knowledge of reflexology ▪ Self trained experts in the

Role, educational qualification	Expected competency	Skill gaps
	▪ Knowledge of amount of pressure that needs to be applied at pressure points	market
Counsellors	▪ Ability to give suggestions to customers on options ▪ Ability to ensure quality standards for services ▪ Ability to undertake evaluation of customer satisfaction ▪ Ability to undertake supervision of hair stylists, beauticians, etc.	▪ In adequate knowledge of variety of treatment ▪ Inability to assess the biological nature of the client resulting in advicing the wrong care
Common skill requirements	▪ Safety consciousness and knowledge of safe working practices ▪ Ability to undertake care of equipment and tools ▪ Punctuality, discipline and honesty ▪ Ability to comply with required quality specifications ▪ Ability to maintain respect for rules and regulations ▪ Ability to maintain concern for health and hygiene ▪ Ability to maintain cordial relationships and cooperation with co-workers and team ▪ Ability to maintain a positive attitude and behaviour ▪ Responsibility and accountability ▪ Adequate communication skills ▪ Concern for environment and waste disposal ▪ Ability for planning, organizing and coordinating ▪ Ability to think creatively, solve problems and make decisions ▪ Leadership and negotiation skills ▪ Ability to bear stress	

Table 78: Skill gaps in Un-Organised Employment of Facility Management Sector in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Experienced personnel	▪ General administration and logistics, after the facility has been occupied, including house keeping, security, front office, power back up, etc ▪ Ability to conduct regular preventive maintenance and required breakdown maintenance of civil, electrical and mechanical installations ▪ Maintaining a schedule for Preventive Maintenance ▪ Knowledge and proficiency in handling maintenance of services like plumbing, elevators, auditorium services, fire fighting and associated services ▪ Manage monthly payment of utilities ▪ Ensuring availability of utilities such as water, electricity, etc ▪ Ability to negotiate with and manage vendors and contractors, including ensuring their payments ▪ Ability to have an orientation towards customer service	▪ Inadequate customer orientation and interaction skills ▪ Inadequate understanding of AMC ▪ Inadequate documentation skills ▪ Insufficient of managing people involved in delivering services ▪ Inadequate experience in building maintenance, equipment maintenance (such as electrical, etc.) ▪ Inadequate understanding of energy audits, energy efficiency, and compliance.
Entry Level personnel	▪ Ability to undertake operations and maintenance activities ▪ Coordination with multiple agencies and vendors ▪ Ability to mobilise resources as and when	▪ Inadequate orientation towards customer service ▪ Inadequate ability to multitask and coordinate with multiple agencies and vendors

Role, educational qualification	Expected competency	Skill gaps
	required ▪ Ability to handle complaints from inhabitants and ensure timely resolution ▪ Ability to keep track of complaints received ▪ Ability to have an orientation towards customer service	▪ Inadequate understanding of energy audits, energy efficiency, and compliance.

Table 79: Skill gaps in Un-Organised Employment of Security Sector in Bangalore Urban & Bangalore Rural Districts

Role, educational qualification	Expected competency	Skill gaps
Security Guards -	▪ Knowledge of disaster management protocols ▪ Knowledge and regular working relationship with nearby police station, fire station, hospital, clinic and other essential service ▪ Knowledge of different security gadgets/mechanisms ▪ Sensitisation about threat potential from different quarters in different situations ▪ Knowledge of fundamentals of security skills/practices – e.g. access control/frisking, anti-sabotage checking, cordoning and sealing, surveillance, body search, premises search and area search, etc.	▪ Lack of knowledge of disaster management protocols ▪ Lack of customer service orientation and being arrogant ▪ Maintenance of records ▪ Lack of knowledge of basic civil and criminal laws ▪ Being physically fit

Role, educational qualification	Expected competency	Skill gaps
	▪ Ability to keep records and scrutinise documents ▪ Knowledge of basic criminal and civil laws ▪ Ability to undertake queue management ▪ Ability to handle industrial unrest ▪ Being physically fit ▪ Ability to undertake parking and traffic regulatory arrangements – e.g. for mega-events/conferences ▪ Ability to undertake un-armed combat ▪ Ability to manage aggression ▪ Ability to undertake care of equipment and tools – e.g. gun, lathi, etc. ▪ Punctuality, discipline and honesty ▪ Concern for quality of service and respect for rules and regulations ▪ Orientation towards customer service ▪ Adequate communication skills ▪ Ability to coordinate with local administration including law and order agencies ▪ Safety consciousness and the ability to adhere to safe working practices ▪ Ability to multitask – e.g. be vigilant even while speaking on the phone to residents ▪ Ability to use of computers/electronic appliances in security arrangements	

5.16. Agriculture/Horticulture

Bangalore Rural district's economy is comprised of 56 per cent contribution from agriculture and 58 per cent are cultivators (37 per cent) and agricultural labourers (21 per cent). Ragi, maize, pulses, fruits, vegetables, and mulberry are the major crops which are grown in the the district of Banglore Rural. Bangalore rural is also found to be suitable for vineyards and for wineries.

Table 80 Distribution of Major Crops Cropped in Hectares

Type	Ragi	Maize	Pulses	Oil Seeds	Fruits	Vegetables	Mulberry
Devanahalli	6,643	852	1,434	359	2,174	888	3,349
Doddaballapura	11,624	9,159	2,747	980	3,510	1,618	544
Hoskote	11,227	171	1,810	2,566	4,091	3,894	2,572
Nelamangala	12,259	753	2,895	351	1,694	597	44
Total	**41,753**	**10,935**	**8,886**	**4,256**	**11,469**	**6,997**	**6,509**

(Source: District at a Glance 2009-10, Bangalore Rural District)

The major food crops of the district are, ragi, maize, gram, tur, groundnut, sun flower etc and the vegetables are potato, tomato, chillies, brinjal, beans and cabbage. Bangalore Rural also grows flowers including rose, marigold, jasmine and aster, the major fruits are mango, grapes, banana and gauva

The University of Agricultural Sciences is located in Doddaballapur Bangalore Rural District is the guiding body for all agricultural training and extension activities. Given the potential for agriculture and availability of a reknowned institute, there is scope for upskilling of the farmers to attain more productivity.

Table 81: Skill gaps in horticulture in Bangalore Rural district

Role, educational qualification	Expected competency	Skill gaps
Farmer (illiterate / school drop-out)	▪ Knowledge about the growing pattern of different crops ▪ Knowledge of different seasons in which different crops should be harvested and planted ▪ Knowledge about high quality seeds ▪ Knowledge about pest control, which includes	▪ Lack of knowledge about high quality seeds ▪ Lack understanding of cultural practices like crop rotation, inter cropping, double cropping etc. ▪ Lack of knowledge on new

Role, educational qualification	Expected competency	Skill gaps
	management of weeds, insects / mites, and diseases ▪ Good understanding of cultural practices which include crop rotation, culling, cover crops, intercropping, double cropping, composting etc. ▪ Understanding of international standards to ensure best quality and higher production ▪ Awareness on appropriate methods and time of harvesting ▪ Prevention of microbial contamination of fresh produce ▪ Understanding of sanitization of vegetables and fruits by dripping and flowers by spraying ▪ Understanding of best practices of sorting, grading and packaging ▪ Ensuring worker hygiene and sanitation practices	techniques in agriculture ▪ Lack understanding of best practices of sorting, grading and packaging ▪ Lack of understanding of organic farming ▪ Lack of understanding of correct dosage of pesticides to protect fertility of the soil ▪ Lack of knowledge on productive cultivation in poly houses ▪ Lack of precision farming techniques and tissue culture

6. Recommendations

Bangalore Urban and Rural districts are nexus of economic activity for the state of Karnataka. They have the maximum number of industries spread across Auto Components, BFSI, Building Construction and Real estate, Pharma, Education and Skill development, Electronics and IT Hardware, Furniture and Furnishing, Food processing, Healthcare, IT/ITES, Media and Entertainment, Organised Retail, Textiles-Clothing, Transportation and Logistics, and Hospitality in Tourism exists in the districts, in addition there is upskilling potential for agriculture in Bangalore Rural district.

Majority of the population in Bangalore Urban district (90.2 per cent) live in urban areas and the urbanisation in Bangalore Rural district is on the increase owing to the contiguous presense with Bangalore Urban district, promotion of industrial areas and SEZs in the district, creation of BIAL, and the expansion of better road network into the district. Industrialists do not view Bangalore Rural as a separate district but only a logical geographic extension of Bangalore, with the surge in real estate prices in Bangalore Urban district, Bangalore Rural is emerging as a leading destination for investment. Bangalore Rural District has notched investments worth Rs 72,631 Crore in 96 projects against Rs 79,681 Crore in 86 projects by Bangalore Urban district in the recently concuded GIM 2012.

Students in Bangalore Urban and Bangalore Rural are open to travel to either districts for quality education, except for admission in government ITIs, where only the district's students can apply for the ITI located in a particular district, every other college, training institute has students across the State, infact Bangalore attracts students from across the country because of the quality education and the employment scenario it offers. The recommendations for both Bangalore Urban and Rural districts have been given here in common.

There is tremendous potential for specialty skilling, new skilling and upskilling in the districts because,

- Bangalore attracts new industry and many existing industries have intention of expansion as the economy grows, which calls for new skilling initiatives
- Bangalore districts act as the melting pot for evolution of technology and introduction of new processes hence there an opportunity for specialty skilling and up skilling

Both the private industry and Government can participate in skill development initiatives of the following industries Auto Components, BFSI, Building Construction and Real estate, Pharma, Education and Skill development, Electronics and IT Hardware, Furniture and Furnishing, Food processing, Healthcare, IT/ITES, Media and Entertainment, Organised Retail, Textiles- Clothing, Transportation and Logistics, and Hospitality in Tourism exists in the districts, in addition there is upskilling potential for agriculture in Bangalore Rural district, in different scope. The detailed recommendation for the private and government is detailed in this section and the summary of the same is presented in the table below,

Table 82: Key recommendations for Bangalore Urban and Rural Districts – Summary

Sector	For private players	For Government players	For Industry
Auto components / Aerospace Components /General Manufacturing	▪ CAD/CAM CNC ▪ Tool Design, Jigs and Fixtures ▪ FMEA ▪ Welding, Grinding ▪ Safety Engineering ▪ JIT, Kanban, 5S and other quality management techniques ▪ Spares management ▪ Mechanic Motor Vehicle ▪ Composite materials/ special materials handling and processing ▪ Tie up with ITIs for minor manufacturing works	▪ Government initiatives to be undertaken by Directorate of Technical Education and Directorate of Employment and Training ▪ Increase in capacity of existing ITI/Diploma centres ▪ Modular employment skills development in like CAD/CAM, CNC, tool room training, Machine maintenance, specific welding, quality improvement etc ▪ Establish modern district laboratories on PPP mode for shared usage of resources ▪ Encourage industry participation in course content and revision	▪ Industrial associations such as Peenya Industrial Association, Doddaballapura Industrial Association, Dabospet Industrial Estate, KSSIDC Industrial Association are engaged in training of minimally skilled, semi skilled and skilled employees. ▪ Modular employment/skill development courses as mentioned for private players can be continued upon in a phased manner
Textile and clothing	➢ Computer based designing course	▪ Government initiatives to be undertaken by	➢ Apparel park industrial

Sector	For private players	For Government players	For Industry
	➢ Sewing machine operators ➢ Quality inspection ➢ Laundry techniques ➢ Embroidery courses ➢ Making different varieties of end products	Directorate of Technical Education and Directorate of Employment and Training ➢ Establishment of model weaving setup to train aspiring entrepreneurs and employees ➢ Promotion of cluster training programmes ➢ Establishment of training centre in each manufacturing cluster	association can conduct training of its constitutent company employees in courses mentioned for private players ➢ These trainings are being provided by the industry when they join and as and when it is necessary, this can be formalised by the industry as an annual skill development initiative.
Food processing	➢ Modular employment/up skilling courses in Food Safety including ▪ HACCP overview ▪ Quality control and Quality assurance ▪ Distribution and logistics ▪ Packaging and Finishing ▪ Sanitation management ▪ Food allergies	▪ Government initiatives to be undertaken by Directorate of Technical Education and Directorate of Employment and Training ▪ The initiatives can be focused in the Bangalore Rural district	▪ Food processing industries are currently providing the above training on a regular basis for their employees, and this an ongoing process, anything additional is not

Sector	For private players	For Government players	For Industry
	▪ Microbial growth ▪ Fermentation ▪ Warehouse management ▪ Fork lift safety and operation ▪ Chemical safety ▪ Fire prevention and protection	as Food Processing industries are concentrated there ▪ Establishment of international quality food testing laboratory to train candidates ▪ Subsidise the upskilling of private companies employees through suitable programs listed aside	required.
BFSI	The private training industry is well spread but they lack imparting of employability skills, this can be augmented by, ▪ Developing industry tailored courses ▪ Train students on competitive products and analysis of competitive products ▪ Product structuring and product comptetitiveness ▪ Practicaly train students on sales – This is what the industry emphasises to a greater degree	▪ Regulation and quality management of Government and private training institutes	➢ All banks, and NBFCs have structured training programmes for their new recruits and for their employees ➢ New recruits are trained for a period ranging from one week to one month on topics involving the core business of the organisation which will include all of some of the following,

Sector	For private players	For Government players	For Industry
	▪ Credit evaluation techniques for different products ▪ Laws and regulations governing the industry ▪ Financial analysis		▪ Retail Banking ▪ Branch operations ▪ Loan procedures ▪ RBI guidelines ▪ Documentation management ▪ Wealth management ▪ Capital markets ▪ Commodity trading ▪ KYC norms, etc ➢ The training capacity varies between 5 candiates to 100 candidates for large institutional banks ➢ This initiative will be continued by the industry
Building, Construction and Real Estate	Conducting Modular up skilling courses for supervisor and above in, ▪ Surveying ▪ Project management techniques	▪ Government initiatives to be undertaken by Directorate of Technical Education and Directorate of Employment and	➢ Industry is providing modular training courses in all the above mentioned topics when new recruits

Sector	For private players	For Government players	For Industry
	▪ Cost estimation and cost overrun control ▪ Softwares like Primavera etc. for the construction industry ▪ Inventory management ▪ Topics in geology, hydrology, hydraulics, electrical etc ▪ Safety management ▪ Labour laws and employee management ▪ Conflict management ▪ Training of Junior Site Supervisors and Skilled workmen in masonry, plumbing, electrician, bar bender, glazing worker and painter category ▪ Training of un skilled helper category with assistance from the government	Training ▪ Capacity and quality development of ITI Civil courses ▪ Establishment of construction academy in lines with National Academy of Construction ▪ Subsidising the training programme of un skilled helper category by providing trainer, material and course (instead of cash subsidy)	are inducted. ➢ This can be continued by the industry with more emphasis on the following topics for skilled emoployees ▪ Safety management ▪ Labour laws and employee management ▪ Conflict management
Pharmaceutical Industry	Providing skill training on the advanced modular courses for graduate/diploma students aspiring to get in the profiles of supervisor and factory operator	▪ Government initiatives to be undertaken by Directorate of Technical Education and Directorate of Employment and	▪ Industry is providing all the above mentioned training on a regular basis as is a requirement for

Sector	For private players	For Government players	For Industry
	category ▪ Chemical Synthesis and Fermentation process ▪ Process industry basics ▪ Instrumentation in pharma/chemical industry ▪ Intellectual Property Rights and its implications ▪ Cleanliness and hygiene management and corresponding standards like GMP ▪ Safety standards ▪ Material handling and fork lift/crane operation For the Sales and Marketing category, ▪ Sales and Marketing process ▪ B2B/ Institutional sales ▪ Personal sales ▪ English communication skills	Training ▪ Encourage syllabus at graduate and diploma level which prepares students for chemical/ pharmaceutical/ process industry ▪ Diploma and ITI students in the Mechanical, Fitter, Mechanic Machine Maintenance, Chemical technology should be taught the following apart from them normal stream of study, ▪ Material handling and fork lift/crane usage ▪ Industrial safety standards ▪ Cleanliness and sanitation management ▪ Sales and Marketing basics	quality ceritification, and hence will be continued in future.

Sector	For private players	For Government players	For Industry
Healthcare Industry	Setting up of up-skilling training centres under the supervision and approval of regulatory structures in force in the country, Specialist course for Nurses in ▪ ICU/ICCU management ▪ Disaster management ▪ Skilled Birth Attendance ▪ Geriatric care ▪ Advanced Medical Equipments training ▪ Trauma care ▪ Paediatric care ▪ Oncology care ▪ Surgery assistance ▪ Post surgical care Other general courses for nurses are, ▪ Basics of hospital management ▪ Infection control management ▪ Injury management ▪ CPR/ Neonatal CPR Specialist course for lab technicians	▪ The government should encourage syllabus upgradation to meet the technology changes. ▪ The government can promote additional colleges under private and PPP mode for training and graduating more paramedical personnel ▪ Effective quality control and regulation of medical/paramedical education in the State by proactive implementation of the norms laid by the regulators	▪ Hospitals can provide specialised training in the following topics on a regular basis, ▪ Specialised training for nurses in the mentioned topics as mentioned for private ▪ NABL certification for lab employees ▪ Practical modern imaging techniques – MRI, CT Scan, Fiduciary markers, Nuclear medicine, Thermography, Tomography ▪ For Minimaly skilled employees the hospitals can provide training in – Cleanliness and sanitation management, cross infection, patient handling,

Sector	For private players	For Government players	For Industry
	▪ Advanced training in Cytology, Histopathology, Serology etc ▪ Lab management ▪ NABL certification of laboratories Specialist course for radiographers ▪ Practical modern imaging techniques – MRI, CT Scan, Fiduciary markers, Nuclear medicine, Thermography, Tomography		crowd handling, intramural transport, personal safety, quality concepts and similar
Electronics and IT hardware	Setting up of up-skilling training centres for the Graduate, Diploma, and ITI students to develop their skills in, ▪ IT hardware and assembly ▪ Electronics hardware and assembly ▪ Tablet PC maintenance ▪ Mobile electronics trouble shooting and maintenance ▪ Micro electronics ▪ VLSI design and trouble shooting	▪ Government initiatives to be undertaken by Directorate of Technical Education and Directorate of Employment and Training ▪ Encourage employment oriented training in the above subjects along with the graduate/diploma/ITI syllabus, by subsidizing the training cost and	▪ The electronics and hardware maintenance industry is very small and fragmented, and hence it is difficult to provide industry wide training. ▪ Large infrastructure maintenance companies have their own

Sector	For private players	For Government players	For Industry
	▪ IT Networking ▪ Quality control concepts ▪ IT Security ▪ IT Administration Courses to be provided in conjunction with an international certified programme wherever possible like CISCO certification for networking, Red Hat certification for open source, ITIL certification for hardware management etc.	certification cost for eligible candidates ▪ Introduce these courses on PPP basis in its colleges, polytechnics and ITIs	scheduled training programmes and this would be continued.
IT/ITES	➢ Revamping existing and setting up new skilling centres in IT which focuses on, ▪ Analytical ability ▪ Problem solving ability ▪ In depth coding/technology skill ▪ Documentation skills ➢ Industry institute joint course setting and testing of skill rather theory For e.g. CISCO networking certification is practical	▪ The trainings mentioned above for IT/ITES is best delivered by the private players as they are in constant touch with the evolving requirements of the industry and have the flexibility to change the course content and syllabus ▪ The government can offer these trainings to its students on PPP	▪ All IT/ITES companies have a structured training programme ranging from 15 days to 45 days for new recruits. The batch size of the training varies from 15-150 at a time depending on the size of the company and the number of

Sector	For private players	For Government players	For Industry
	problem solving oriented not theory oriented ➢ Encourage captive training and placement of students ➢ Essential skills like time management, attendance, target achievement capability, work focus should be tested and psychometrically evaluated as a part of the course Similarly for ITES voice BPO sector the focus on training should be on ▪ Listening capability ▪ Language capability ▪ Accent capability ▪ Quick thinking and reactive capability ▪ Qualitative and Quantitative problem solving capability ➢ These skills should be certified in the lines TOEFL/IELTS where the focus is on attaining the qualitative grammatical knowledge, practical usage of words, and orientation	mode at a subsidized rate	employees recruited. All the above topics and technical topics are covered during the training programme ▪ For experienced personnel, period training is being conducted on a range of technical topics. ▪ These training programmes would be continued in future and there is no requirement for additional training

Sector	For private players	For Government players	For Industry
	to Western accent ➢ For ITES non voice BPO/KPO sector the focus on training should be on, ➢ Problem solving analytical skills in their area of specialisation		
Organised Retail	➢ Providing basic and advanced retailing skills on ▪ Stores management ▪ Retail sales ▪ Warehouse management ▪ Merchandising ▪ Quality control ▪ Commotion and crowd control ▪ Up selling and cross selling ➢ Providing modular up skilling training programs in ▪ Warehouse Management System ▪ Logistics Management System ▪ Billing System ▪ Accounting and Documentation ▪ Inventory management ▪ Shelf life management ▪ Promotion management ▪ Customer Behavioural	▪ The trainings mentioned above for IT/ITES is best delivered by the private players as they are in constant touch with the evolving requirements of the industry and have the flexibility to change the course content and syllabus ▪ The government can offer these trainings to its students on PPP mode at a subsidized rate	▪ Industry provides the above training for all new recruits and experienced personnel from time to time hance there is no requirement for additional training

Sector	For private players	For Government players	For Industry
	Analysis ▪ Statistical analysis of sales, merchandising and promotions ▪ CRM tools ➢ Industry institute joint course setting and testing of skill rather ➢ Encourage captive training and placement of students ➢ Essential skills like time management, attendance, target achievement capability, work focus should be tested and psychometrically evaluated as a part of the course		
Hospitality Industry	➢ NSDC can partner with private institutes to improve the quality of training by, ▪ Establishing standard training programme ▪ Improving the quality of training by including the industry in training curriculum ▪ Establish communication labs, language labs, and soft skill lab for skill	▪ The trainings mentioned above for IT/ITES is best delivered by the private players as they are in constant touch with the evolving requirements of the industry and have the flexibility to change the course content and syllabus ▪ The government can offer these trainings to	▪ Hospitality industry is training intensive as they are intensively in touch with the customers; the industry is well evolved in its training modules and programmes.

Sector	For private players	For Government players	For Industry
	augmentation ▪ Encouraging multi cuisine expertise through food fairs and competitions ▪ *Providing skill objective skill certification apart from course Pass/Fail/Marks obtained certificate* ➢ Providing modular up skilling training programs in ▪ Cold chain management ▪ Accounting and Documentation ▪ Inventory management ▪ Customer Behavioural Analysis ▪ CRM tools ▪ Beverage mixing ▪ Specialty cusines ▪ Disaster management ▪ First aid ▪ Protocol management ▪ Advanced cleaning and sanitation techniques ➢ Industry institute joint course setting and testing of skill rather ➢ Encourage captive training and placement of students ➢ Essential skills like time	its students on PPP mode at a subsidized rate ▪ Department of Tourism, Directorate of Technical Education and Directorate of Employment and Training can jointly work together in delivering this initiatives	

Sector	For private players	For Government players	For Industry
	management, attendance, target achievement capability, work focus should be tested and psychometrically evaluated as a part of the course		
Furniture Industry	➢ NSDC can partner with private institutes and ITIs to provide certificate training in carpentry and wood working ➢ Thrust should be given on international design orientation ➢ Entrepreneurship development cell for furniture design and manufacture ➢ Furniture sourcing network for organised retailers from artisans and small scale industry can be promoted by industry cluster	➢ Government initiatives to be undertaken by Directorate of Technical Education and Directorate of Employment and Training ➢ ITI courses in carpentry should be promoted ➢ Similar to government tool room for metal working, a tool room for carpentry could be setup ➢ Furniture making techniques should be given thrust in ITI welding, sheet metal working and fitting courses	➢ Furniture manufacturing is a highly fragmented small scale industry, hence there is little scope for industry to provide training. On the job training is the usually practiced format in this industry as it is skill based and this will continue.
Logistics and Warehousing	➢ NSDC can partner with private institutes and ITIs to provide certificate courses in	➢ Government can consider initiation of logistics and warehouse management as a	➢ All logistics and warehousing agencies provide training for their

Sector	For private players	For Government players	For Industry
	▪ Logistics management ▪ Warehouse management ▪ Inventory management ▪ Commercial vehicle maintenance ▪ Material handling techniques ▪ Hazardous material management ▪ First aid ▪ Cold storage management ➢ Advanced modular courses in logistics and warehouse management which can be provided are, ▪ Documentation in logistics and warehousing ▪ Legal requirements in logistics and warehousing ▪ Routing and fleet optimisation ▪ Inventory optimisation techniques ▪ Costing and finance in logistics and warehousing ▪ 3PL, 4PL and 5PL management ▪ Hazardous material management ▪ Logistics Management	diploma course	new recruits in their own mode of operations and their systems ➢ Advanced topics as mentioned above are done periodically too ➢ Emphasis could be laid on the following topics during the training programme, ▪ Documentation in logistics and warehousing ▪ Legal requirements in logistics and warehousing ▪ Costing and finance in logistics and warehousing ▪ Hazardous material management ▪ First aid

Sector	For private players	For Government players	For Industry
	System training ▪ Warehouse Management System training		
Un-Organised Sector	Institutes can provide the following trainings, ▪ Building, Construction and Real Estate • Skills in Masonry, Bar Bending, Plumbing • Concrete mixing • Lifting and moving stones, sand, cement etc • Physical health management • Safety management • Work place character • Timeliness and attendance ▪ Silk Weaving • Operation and Maintenance of loom • Quality control • Identifying good quality silk	It is best that the private industry trains people in the un-organised sector, and the government can sponsor the above training programmes and subsidise the cost of training of un-organised sector as they would not be able to bear the cost themselves	Unorganised sector is highly fragmented and most employment is done on a one on one engagement with the employer, hence the respective industry should take initiative in training them. Currently on the job training is the most preferred mode of training for the sector and this would continue.

Sector	For private players	For Government players	For Industry
	• Trouble shooting problems in looms • Material handling and packaging ▪ Tailors • Tailoring skills • Embroidery skills • Needle usage skills • Basic machine maintenance • Pattern making, grading and draping • Quality control • Clothes cutting • Material management • Labelling and packing • Ironing and pressing • Laundry ▪ Carpenter • Wood working • Identifying types of wood and their properties • Wood machining • Dimensioning and		

Sector	For private players	For Government players	For Industry
	tools usage • Joints production • Sanding and polishing • Varnishing and painting • Material handling ▪ Metal worker • Metal cutting, drilling, joining, welding • Designing metal • Painting metal • Dimensioning and tools usage • Material storage and handling • Machine maintenance • Glass cutting and polishing ▪ Household Helper • Food preparation – different cuisines • Basic language skills – Hindi and English • Reading and writing		

Sector	For private players	For Government players	For Industry
	• Answering telephones • Courtesy and respect • Ethical working • Using kitchen appliances • Cleaning and Washing with different chemicals • Feeding children and aged persons • Providing medication • Basic hospice care • Purchase goods from shop • Do simple mathematical calculations ▪ Beautician – Hair stylist • Hair styling methods • Using hair styling tools • Hair washing and shampooing • Hair Colouring and Dyeing		

Sector	For private players	For Government players	For Industry
	• Hair massaging • Hair removal techniques • First aid skills ▪ Beautician – Body care • Eye brow, eye lash, manicure and pedicure management • Techniques and technologies used • Hair removal • Cosmetics applying • Mehendi/ Henna application • Facial application • Massaging • Understanding of the chemicals used in beauty products and their effects		
Agriculture	➢ NSDC can partner with the University of Agricultural Sciences and interested private institutes to provide skilling courses in, ▪ Crop planning and management ▪ Seed preparation	➢ Government initiatives to be undertaken by University of Agricultural Science and Gandhi Krishi Vigyam Kendra ➢ The government can sponsor the above	➢ Farming is a fragmented activity, hence there is little scope for the farmers to organise training programmes for themselves, hence

Sector	For private players	For Government players	For Industry
	▪ Precision farming ▪ Pest and week control ▪ Agricultural mechanisation ▪ Yield management ▪ Inter cropping techniques ▪ Crop intensification techniques ▪ Fertigation ▪ Drip irrigation ▪ Green house horticulture ▪ Seri culture ▪ Floriculture ▪ Sorting, grading and packing ▪ Marketing and Sales of agricultural produce ➢ Training has to be conducted in the form of extension activities and demonstration farming	training programmes and subsidise the cost of training of farmers as they would not be able to bear the cost themselves ➢ The initiatives can be focused in the Bangalore Rural district as agriculture is concentrated there	it has to be done by the Private/KVK/Government

6.1. Auto Components and Aerospace Components

Bangalore urban district with its clustered SSIs in various industrial estates including Peenya, Bommsandra, Jigani, Electronics city etc. has the technical strength and experience in the auto components and service industry. These auto anciliary industries supports the automotive OEMs and auto manufacturers such as Volvo, Honda, Mahindra Reva, TVS Delhi, Toyota Kirloskar, Tata Marcopolo, located in the districts of Bangalore Rural, Mysore, Ramnagara, Kolar and Dharwad. In addition to this, they also provide their services to the auto companies located out of Chennai including Hyundai, Ford, Mahindra, Hindutan, Nissan, BMW etc. These auto anciliary industries apart from servicing the auto

industry are also working with Aerospace industry, general manufacturing, commercial goods, machine tools, electrical industry etc.

Bangalore also has a thriving two (100+) and four wheeler (60+) dealership and service market which offer rich employment opportunities for aspiring candidates.

Bangalore Urban District acts as the testing pad for launching any new product/service in the industry owing to the size and quality of business. The Government and private ITI offer multiple courses related to the fields, but there is still a need to up skill, and introduce new skills in the market owing to the innovative nature of the industry in Bangalore.

Private Player

- Setting up of specialist training centres for the following advanced courses which are much in need among the auto industry, aerospace industry, and general light and heavy engineering industry,
  - CAD/CAM
  - CNC machining
  - Tool Design, Jigs and Fixture design
  - Quality inspection
  - Composite materials/special materials handing and machining
  - Failure Mode Evaluation Analysis
  - Mechanic Motor Vehicle course
  - Machine Tool Maintenance
  - Welding techniques
  - Safety engineering
  - JIT, Kanban, 5S and other quality management techniques
  - Spares management
- In addition to these specialty courses the auto anciliary manufacturing industry should engage in strengthening the existing practical experience set up in the government and private ITIs. The private ITIs especially heavily lack machine tools, and equipment required for training the students; this would result in availability of better trained students for the industry.
- The industry can work with the ITIs by offering low tech jobs to the ITIs for manufacturing, this would result in the students gaining experience, ITIs earning some money which can be used to

ramp up their infrastructure, low cost manufacturing for industry and the increases the confidence of the industry on the ITI

Government

- Government initiatives to be undertaken by Directorate of Technical Education and Directorate of Employment and Training
- Increasing the capacity of existing ITI/Diploma seats
- Improving the quality of education courses taught in ITI/Diploma
- Focus on modular employment courses like CAD/CAM, CNC, tool room training, Machine maintenance, specific welding, quality improvement etc
- Setting up of District/taluka level high-tech laboratories on PPP to ensure quality education for all
- Establishment of an LMIS for ITI and other branch students to track the career growth and employment
- Encourage industry participation in course content and revision
- Impart life education on communication, quality management, work life balance, work place ethics, time management etc.

Industry

Industrial associations such as Peenya Industrial Association, Doddaballapura Industrial Association, Dabospet Industrial Estate, KSSIDC Industrial Association are engaged in training of minimally skilled, semi skilled and skilled employees. This can be continued upon in a phased manner in all the modular courses mentioned for private players.

6.2. Textile and Clothing

Apparel manufacturing and silk weaving industry is clustered around Bangalore Urban and Rural districts in the areas of Peenya, Bommasandra, Bommanahalli, Yeshwantpur and Rajaji Industrial Estate and Town. As per the District at a glance, data there are 499 textile units offering 16,631 employment opportunities in the district. The government ITIs offers only 42 tailoring seats and 21 fashion designing seats in Bangalore Urban District; private apparel manufacturers bring their employees from neighbouring district and train them as per their need, there is limited training for apparel industry among the private institutes. Majority of the workforce in the textile and clothing segment is engaged in apparel manufacture, IMaCS's recommendations to improve the skill level of these workers are,

Private Player

- Setting up training centres through innovative training delivery models, which don't burden the students with the training fees. The areas of training that can be considered are:
    - Computer based designing course
    - Sewing machine operators
    - Quality inspection
    - Laundry techniques
    - Embroidery courses
    - Making different varieties of end products

Recomendations for courses in silk weaving include,

- Weaving machine usage and maintenance training
- Dyeing techniques
- Raw silk preparation and processing
- Marketing courses on how to access the open market and negotiate on prices both for raw material procurement and for sale of finished materials

Government

- Government initiatives to be undertaken by Directorate of Technical Education and Directorate of Employment and Training
    - Establishment of model weaving setup to train aspiring entrepreneurs and employees
    - Promotion of cluster training programmes
    - Establishment of training centre in each manufacturing cluster

Industry

- Apparel park industrial association can conduct training of its constitutent company employees in
    - Computer based designing course
    - Sewing machine operators
    - Quality inspection
    - Laundry techniques
    - Making different varieties of end products
- These trainings are being provided by the industry when they join and as and when it is necessary, this can be formalised by the industry as an annual skill development initiative.

6.3. Food Processing

Food processing industry in Bangalore Urban and Rural District is dominated by organised players including Cadbury, Parle, Wrigleys, Britannia, Fairy Food products, Avesthagen, Vishal Natural Foods, Creamline dairy, Karuturi Global, Indo Nissin Foods, Koleman India, Thekitchen4u, Delight cafe, Hot Beanz, PepsiCo, Chordia, Meatzza, Bakemans, Ambika Foods, MTR foods, Naturo Foods and Fruit Products Pvt Ltd etc. This apart there are multiple breweries and wineries in the districts, the prominent ones being Khoday India, United Breweries, Gemini Distilleries, Grover Vineyards, Kinvah, Heritage Winery, Amrut Distilleries, Premier Distilleries, Mysore Distilleries etc. Banglaore Rural and Urban districts also host multiple food flavours and fragrances including Sonarome, Givaudan India Pvt Ltd, Aromatic India, etc

The organised food processing industry is highly mechanised owing to the various global healthcare and food processing norms including KOSHER, HALAL, HCAAP, ISO 9000 series, OSHAS etc. This mechanisation has and industrial norms have resulted in reduced the number of employment in the sector.

Most of the food processing industries are concentrated in Bangalore Rural district, hence the initiative can be focussed there.

Private Players

The industry can promote the skill development in the sector by providing modular training in food processing related topics, these shall improve the productivity and employability of the employees,

- Food Safety
- HACCP overview
- Quality control and Quality assurance
- Distribution and logistics
- Packaging and Finishing
- Sanitation management
- Food allergies
- Microbial growth
- Fermentation
- Warehouse management
- Fork lift safety and operation
- Chemical safety
- Fire prevention and protection

Government

The government can support the food processing industry inidiatives by,

- Subsidising eligible and underpriviledged candidate's skill development
- Establishing international standard food testing laboratories where candidates can get trained and this can act as a revenue generation avenue to the government as well

Industry

Food processing industries are currently providing the above training on a regular basis for their employees, and this is an ongoing process, anything additional is not required.

6.4. Banking, Financial Services and Mutual Fund

The BFSI sector includes services in Retail banking, Commercial Banking, Non Banking Financial Corporations, Wealth Managment and Capital advisors and Insurance sector. The primary training and development in this sector is carried out by private industry. There are a multitude of private institutions which provide 1-6 months short term courses as well as 6-24 months certification courses, there are institutions which deliver these courses and act as captive training centres for institutional clients. Based on our interaction with the industry, there are multiple private training institutes and colleges which offer training and education in this sector, but the quality of students from these institutes need has a wide scope for improvement; also there is limited scope for the Government to participate as this is a well established sector. The recommendations to strengthen the courses in the private sector are

Private Player

- Develop industry tailored courses
- Train students on competitive products and analysis of competitive products
- Product structuring and product comptetitiveness
- Practicaly train students on sales – This is what the industry emphasises to a greater degree
- Credit evaluation techniques for different products
- Laws and regulations governing the industry
- Financial analysis

The Government has limited role in this sector as this is well established by the private sector operators, the Government can take proactive steps to govern the quality of the training institutions, so that the students are not led by false claims.

Industry

- All banks, and NBFCs have structured training programmes for their new recruits and for their employees
- New recruits are trained for a period ranging from one week to one month on topics involving the core business of the organisation which will include all of some of the following,
    - Retail Banking
    - Branch operations
    - Loan procedures
    - RBI guidelines
    - Documentation management
    - Wealth management
    - Capital markets
    - Commodity trading
    - KYC norms, etc
- The training capacity varies between 5 candiates to 100 candidates for large institutional banks
- This initiative will be continued by the industry

6.5. Building, Construction, and Real Estate

Bangalore added 11.35 million sq ft of office space in 2011; on an average 30 per cent of office space is taken up by IT/ITES industry, 14 per cent by BFSI and 12 per cent by professional services firm, the remaining were occupied by consumer goods, Industrial goods, electronics and communication, media and telecom industry across the country.

In the residential segment Bangalore added six+ million sq ft of real estate in the year 2011. Constuction industry as a thumb rule invests 50 mandays of Engineering work, 30 mandays of Managerial work, 200 mandays of Supervisory work, 600 mandays of Skilled work, and 1100

mandays of Unskilled work for every crore of rupee invested in constructing Commercial and Residential buildings.

While formal education is required for supervisors and above category in construction industry, the skilled manpower is generated either out of experience or through limited training avenues available in the country/state; the unskilled worker category does not receive any formal training and capacity building.

The recommendations to improve the skill status of construction industry for the private and Government are,

Private Player

- Setting up of up skilling training centres for the following advanced modular courses for the supervisor and above category
    - Surveying
    - Project management techniques
    - Cost estimation and cost overrun control
    - Softwares like Primavera etc for the construction industry
    - Inventory management
    - Topics in geology, hydrology, hydraulics, electrical etc
    - Safety management
    - Labour laws and employee management
    - Conflict management
- Industry interaction brought out huge requirement for Junior site supervisors, these are ITI/specialist course trained personnel; private players can consider setting up training institutes to train ITI educated youth on this skills
- There is tremendous scope in training skilled work men category involved in the following trades, masonry, plumbing, electrician, manson, bar bender, painter, glazing operator,
    - Un skilled personnel can be provided 3-12 months of modular training in these topics and render them as skilled personnel
- There is no formal stream of education for the unskilled helper segment of the construction sector, this segment is also highly volatile and tends to move from one

employer to another for marginal increment in salary. The willingness to undergo training is limited with this segment and they prefer to learn their job as they work, employers should provide subsidised training to this segment in the following topics,

- Safety management
- Personal health management
- Work place cleanliness
- Adherence to instructions/commands
- Basics of construction technologies
- Escalation of problems

Government

- Government initiatives to be undertaken by Directorate of Technical Education and Directorate of Employment and Training
- The government should increase its seating capacity in the government ITI providing Civil education, in conjunction with it the quality of courses should also be developed
- In lines with the National Academy of Construction in Hyderabad, the Government of Karnataka can establish a construction academy which will act as a parent body to train and employ eligible candidates in various trades of civil construction
- The government can subsidise the training programme of unskilled helpers by the employers by providing men, material and course for the training programme (instead of providing cash subsidy)

Industry

- Industry is providing modular training courses in all the above mentioned topics when new recruits are inducted. The batch size varies from five to fifty depending of the size of the industry and they extend a duration of one week to one month.
- This can be continued by the industry with more emphasis on the following topics for skilled emoployees
  - Safety management
  - Labour laws and employee management
  - Conflict management

6.6. Chemicals and pharmaceutical Sector

As discussed in the report, Bangalore is the national capital for Bio Technology and Pharaceutical industry, the state has 195 Biotech companies which is 60 per cent of all India presence; over 50 per cent of the Biotech revenues is generated in Bangalore. Karnataka ranks 10th in the number of pharma manufacturing companies and constitutes 40 per cent of the pharma production in the country, and accounts for eight per cent of the total pharma revenue of the country (the state hosts 221 Formulation unis, 74 bulk drug units).

Maximum employment in the pharmaceutical sector is observed in the pharmaceutical production category and in the sales men category. Science graduates and Diploma candidates are employed as factory workers. The remaining posts in Pharmaceutical and Biotech industry need higher levels of science education and require experience in the industry, hence it is not required to formally train them.

The recommendations to improve the skill status of pharmaceutical industry for the private and Government are,

Private Player

- Setting up of skilling training centres for the following advanced modular courses for graduate/diploma students aspiring to get in the profiles of supervisor and factory operator category
    - Chemical Synthesis and Fermentation process
    - Process industry basics
    - Instrumentation in pharma/chemical industry
    - Intellectual Property Rights and its implications
    - Cleanliness and hygiene management and corresponding standards like GMP
    - Safety standards
    - Material handling and fork lift/crane operation
    - Sales and Marketing process
    - B2B/ Institutional sales
    - Personal sales
    - English communication skills

Government

- Government initiatives to be undertaken by Directorate of Technical Education and Directorate of Employment and Training
  - The government should encourage syllabus at graduate and diploma level which prepares students for chemical/ pharmaceutical/ process industry
  - Diploma and ITI students in the Mechanical, Fitter, Mechanic Machine Maintenance, Chemical technology should be taught the following apart from them normal stream of study,
    - Material handling and fork lift/crane usage
    - Industrial safety standards
    - Cleanliness and sanitation management
    - Sales and Marketing basics

Industry

Industry is providing all the above mentioned training on a regular basis as is a requirement for quality ceritification, and hence will be continued in future.

6.7. Healthcare Sector

Bangalore Districts can be aptly called as the healthcare capital of South India; it houses world's largest number of systems of medicines approved by WHO in one location. GIM 2012 has assured investment to the tune of Rs 2900+ Crore in the Bangalore Urban and Rural districts. The major private medical hospitals in Bangalore are, Manipal hospital, Appollo hospital, Wockhardt hospital, Narayana Hrudayalaya, Dr Agarwal Eye Clinic, Columbia Asia Hospital, MS Ramiah Hospital, Mallaya Hospital, Lakeside Medical Centre and Hospital, St Johns Medical College and hospital etc.

With the emergence of medical tourism and increasing investment in healthcare industry there will be requirement of specialty trained nurses, lab technicians, radiographers for the industry. Also Medical Council of India (MCI) has mandated compulsory skill lab training for all students clearing MBBS degree, this is one area private industry could look at training and development initiatives.

The recommendations to improve the skill status of healthcare sector for the private and Government are,

Private Player

- Setting up of up-skilling training centres under the supervision and approval of MCI/ Nursing Council of India/ Indian Pharmacist Association/ All India Medical Laboratory Technologists Association (AIMLTA)/ Indian Radiological Association and other related organisation the following advanced courses for graduate/diploma nurses/ lab technician/ radiographer, aspiring to specialise in certain areas of medical care,

  Specialist course for Nurses in

  - ICU/ICCU management
  - Disaster management
  - Skilled Birth Attendance
  - Geriatric care
  - Advanced Medical Equipments training
  - Trauma care
  - Paediatric care
  - Oncology care
  - Surgery assistance
  - Post surgical care

    Other general courses for nurses are,
  - Basics of hospital management
  - Infection control management
  - Injury management
  - CPR/ Neonatal CPR

  Specialist course for lab technicians

- Advanced training in Cytology, Histopathology, Serology etc
- Lab management
- NABL certification of laboratories
- Specialist course for radiographers
- Practical modern imaging techniques – MRI, CT Scan, Fiduciary markers, Nuclear medicine, Thermography, Tomography

Government

- The government should encourage syllabus at graduate and diploma level which prepares students for healthcare industry
- The government can promote additional colleges under private and PPP mode for training and graduating more paramedical personnel
- Effective quality control and regulation of medical/paramedical education in the State by proactive implementation of the norms laid by the regulators

Industry

- Hospitals can provide specialised training in the following topics on a regular basis,
  - Specialised training for nurses in the mentioned topics as above
  - NABL certification for lab employees
  - Practical modern imaging techniques – MRI, CT Scan, Fiduciary markers, Nuclear medicine, Thermography, Tomography
  - For Minimaly skilled employees the hospitals can provide training in – Cleanliness and sanitation management, cross infection, patient handling, crowd handling, intramural transport, personal safety, quality concepts and similar

6.8. Electronics and IT Hardware

Electronics industry in Bangalore is limited to IT based electronics and hardware, most of the companies which have agreed to start their operations in during GIM 2010 and GIM 2012 also have committed for investment in IT hardware electronics and maintenance. The employment in Electronics and IT hardware will be in hardware production/assembly and hardware maintenance. Apart from the formal industry employment in IT asset management, an informal computer and laptop maintenance and repair industry is operational across the Bangalore districts. The major skilled employment in electronics and IT hardware industry is as follows,

Graduate, Diploma, and ITI students specialising in computer science, IT hardware management, Network management, Electrical and Electronics will be the target segment for training and skill development in this sector.

The recommendations to improve the skill status of Electronics and IT hardware industry for the private and Government are,

Private Player

- Setting up of up-skilling training centres for the Graduate, Diploma, and ITI students to develop their skills in,
  - IT hardware and assembly
  - Electronics hardware and assembly
  - Tablet PC maintenance
  - Mobile electronics trouble shooting and maintenance
  - Micro electronics
  - VLSI design and trouble shooting
  - IT Networking
  - Quality control concepts
  - IT Security
  - IT Administration
- These courses should be provided in conjunction with an international certified programme wherever possible like CISCO certification for networking, Red Hat certification for open source, ITIL certification for hardware management etc.

Government

- Government initiatives to be undertaken by Directorate of Technical Education and Directorate of Employment and Training
- The Government shall encourage employment oriented training in the above subjects along with the graduate/diploma/ITI syllabus, by subsidizing the training cost and certification cost for eligible candidates
- The Government can introduce these courses on PPP basis in its colleges, polytechnics and ITIs

Industry

The electronics and hardware maintenance industry is very small and fragmented, and hence it is difficult to provide industry wide training. Large infrastructure maintenance companies have their own scheduled training programmes and this would be continued.

6.9. IT/ITES

Titled as the Silicon Valley of India, Bangalore Urban district is the country's leading IT exporter, employing nearly 8+ Lakh people (35 per cent of the IT/ITES workforce of the country). Bangalore is home to nearly 2156 IT/ITES companies and is the fourth largest technology cluster in the world.

Apart from colleges offering graduate and post graduate degree and polytechnics offering diplomas in computer science and IT, there are a number of private organisations like NIIT, JetKing, Aptech, etc which provide certificate course in specific region/category/language of IT. The requirement of the industry is skilled and productivity ready candidates who do not need any additional training at the company.

The recommendations to improve the skill status of IT/ITES industry for the private and Government are,

Private Player

- Revamping existing and setting up new skilling centres in IT which focuses on,
    - Analytical ability
    - Problem solving ability
    - In depth coding/technology skill
    - Documentation skills
    - This skill development should be done in conjunction with the industry by jointly setting up courses and testing the students on the above skills and not on theoretical knowledge of programming. For e.g. CISCO networking certification is practical problem solving oriented not theory oriented
    - Industry should be encouraged to collaborate with training institutes in training candidates and undertaking captive placements
    - Other essential skills like time management, attendance, target achievement capability, work focus should be tested and psychometrically evaluated as a part of the course
- Similarly for ITES voice BPO sector the focus on training should be on
    - Listening capability
    - Language capability

- Accent capability
- Quick thinking and reactive capability
- Qualitative and Quantitative problem solving capability
- These skills should be certified in the lines of international exams like Test of English as Foreign Language (TOEFL), International English Language Testing System (IELTS) where the focus is on attaining the qualitative grammatical knowledge, practical usage of words, and orientation to Western accent

➢ For ITES non voice BPO/KPO sector the focus on training should be on,

- Problem solving analytical skills in their area of specialisation

Government

➢ The trainings mentioned above for IT/ITES is best delivered by the private players as they are in constant touch with the evolving requirements of the industry and have the flexibility to change the course content and syllabus

➢ The Government can offer these trainings to its students on PPP mode at a subsidized rate

Industry

- All IT/ITES companies have a structured training programme ranging from 15 days to 45 days for new recruits. The batch size of the training varies from 15-150 at a time depending on the size of the company and the number of employees recruited. All the above topics and technical topics are covered during the training programme
- For experienced personnel, period training is being conducted on a range of technical topics.
- These training programmes would be continued in future and there is no requirement for additional training

6.10. Organised Retail

As of November 2011, Bangalore had 23 operational malls with 6.105 million sq feet* occupation between them, this retail space is expected to increase to 19.1 million sq feet by 2015. The industry which currently employs 20000+ people is expected to add another 50000 personnel with the increased capacity of organised retail. The major retailers with presence in Bangalore are, Big Bazaar, Star Bazaar, Bangalore Central, Garuda Mall, Mantri Square, The Forum, Phoenix Market

City, Total Mall, Cosmos Mall, Orion Mall, Gopalan Mall, Royal Meenakshi Mall, Inorbit Mall, etc.

(*Retails space for malls above one lakh sq.ft)

Skills in retail are not provided by degree and diploma courses, students join companies and get trained on the job and through company training. Recently multiple private training institutes like Triumph India, Sparkle Training Academy, India Skills, Landmark Institute of Skills Training, etc have emerged providing retail specific certificate courses. There is scope for providing new skilling, and up skilling in retail to enable vertical and horizontal career growth.

The recommendations to improve the skill status of organised retail industry for the private and Government are,

Private Player

- Providing basic and advanced retailing skills on
    - Stores management
    - Retail sales
    - Warehouse management
    - Merchandising
    - Quality control
    - Commotion and crowd control
    - Up selling and cross selling
- Providing modular up skilling training programs in
    - Warehouse Management System
    - Logistics Management System
    - Billing System
    - Accounting and Documentation
    - Inventory management
    - Shelf life management
    - Promotion management
    - Customer Behavioural Analysis
    - Statistical analysis of sales, merchandising and promotions
    - CRM tools

- This skill development should be done in conjunction with the industry by jointly setting up courses and testing the students on the above skills and not on theoretical knowledge of programming. Industry should be encouraged to collaborate with training institutes in training candidates and undertaking captive placements
- Other essential skills like time management, attendance, target achievement capability, work focus should be tested and psychometrically evaluated as a part of the course

Government

- Government initiatives to be undertaken by Directorate of Technical Education and Directorate of Employment and Training
- The trainings mentioned above for retails is best delivered by the private players as they are in constant touch with the evolving requirements of the industry and have the flexibility to change the course content and syllabus
- The government can offer these trainings to its students on PPP mode at a subsidized rate as it is being done in the Government Peenya ITI in collaboration with Bharti Wall Mart

Industry

- Industry provides the above training for all new recruits and experienced personnel from time to time hance there is no requirement for additional training

6.11. Tourism, Travel, & Hospitality

Bangalore is the gateway to tourists entering Karnataka, the number of tourists arrival in Karnataka has gone up thrice from 27.7 Million in 2004 to 84.6 Million in 2011. This apart, business travellers is also high owing to the IT/ITES, Bio Tech and manufacturing industry concentration, this provides tremendous opportunity for hospitality industry in the state. The key investment potential for Bangalore districts is in the Hospitality sector owing to the heavy influx of population for business and tourism activities.

There are more than 40 recognized hotel management institutes in Bangalore alone offering courses in hospitality and catering services, hence onward it is necessary to do an up-skilling of the courses in these institutes and promote industry ready candidates from the institutes.

The recommendations to improve the skill status of hospitality industry for the private and Government are,

Private Player

- NSDC can partner with private institutes to improve the quality of training by,
  - Establishing standard training programme
  - Improving the quality of training by including the industry in training curriculum
  - Establish communication labs, language labs, and soft skill lab for skill augmentation
  - Encouraging multi cuisine expertise through food fairs and competitions
  - Providing skill objective skill certification apart from course Pass/Fail/Marks obtained certificate
- Providing modular up skilling training programs in
  - Cold chain management
  - Accounting and Documentation
  - Inventory management
  - Customer Behavioural Analysis
  - CRM tools
  - Beverage mixing
  - Specialty cusines
  - Disaster management
  - First aid
  - Protocol management
  - Advanced cleaning and sanitation techniques
- This skill development should be done in conjunction with the industry by jointly setting up courses and testing the students on the above. Industry should be encouraged to collaborate with training institutes in training candidates and undertaking captive placements
- Other essential skills like time management, attendance, target achievement capability, work focus should be tested and psychometrically evaluated as a part of the course

Government

- The trainings mentioned above for hospitality is best delivered by the private players as they are in constant touch with the evolving requirements of the industry and have the flexibility to change the course content and syllabus
- The Government can offer these trainings to its students on PPP mode at a subsidized rate
- Department of Tourism, Directorate of Technical Education and Directorate of Employment and Training can jointly work together in delivering this initiatives

Industry

Hospitality industry is training intensive as they are intensively in touch with the customers; the industry is well evolved in its training modules and programmes.

6.12. Furniture Industry

The Furniture and Furnishing industry has seen tremendous growth in the recent days due to the increase in number of employment, IT/ITES/Manufacturing/Other industrial growth, increase in number of households. More than 70 per cent of the furniture industry in Bangalore is un-organised, Shivaji nagar and surrounding areas are some of the prominent unorganised furniture sales area in Bangalore; multiple small time manufacturing units are spread across the district from where these shops source their furnitures.

There is scope for both private and Government to provide training in the furniture segment, especially in woodwork as this is not addressed extensively by Government ITIs.

The recommendations to improve the skill status of Furniture industry for the private and Government are,

Private Player

- NSDC can partner with private institutes and ITIs to provide certificate training in carpentry and wood working
- Thrust should be given on international design orientation to produce innovative and attractive designs of woodwork/metal work

- Entrepreneurship development cell for furniture design and manufacture can be initiated as this is a low capital investment, high returns segment (though working capital requirement can be high)
- Furniture sourcing network for organised retailers from artisans and small scale industry can be promoted by industry cluster

Government

- Directorate of Technical Education and Directorate of Employment and Training can provide these interventions
- ITI courses in carpentry should be promoted
- Similar to Government tool room for metal working, a tool room for carpentry could be setup
- Furniture making techniques should be given thrust in ITI welding, sheet metal working and fitting courses

Industry

Furniture manufacturing is a highly fragmented small scale industry, hence there is little scope for industry to provide training. On the job training is the usually practiced format in this industry as it is skill based and this will continue.

6.13. Transportation, Logistics and Warehouse Management

For our study we have considered road transporatation, and warehousing as, rail transporatation is mostly with the government, bulk of air transportation operation is warehousing based. There is tremendous scope for both private and government to provide training in the logistics and warehousing segment, as the training and development is fairly at the nascent stages and is not addressed by government degree/diploma/ITI courses.

The recommendations to improve the skill status of Logistics and Warehousing industry for the private and Government are,

Private Player

- Private institutes and ITIs to provide certificate courses in
  - Logistics management
  - Warehouse management
  - Inventory management
  - Commercial vehicle maintenance
  - Material handling techniques
  - Hazardous material management
  - First aid
  - Cold storage management
- Advanced modular courses in logistics and warehouse management which can be provided are,
  - Documentation in logistics and warehousing
  - Legal requirements in logistics and warehousing
  - Routing and fleet optimisation
  - Inventory optimisation techniques
  - Costing and finance in logistics and warehousing
  - 3PL, 4PL and 5PL management
  - Hazardous material management
  - Logistics Management System training
  - Warehouse Management System training

Government

- Directorate of Technical Education and Directorate of Employment and Training can provide these interventions
- Government can consider initiation of logistics and warehouse management as a diploma course

Industry

- All logistics and warehousing agencies provide training for their new recruits in their own mode of operations and their systems
- Advanced topics as mentioned above are done periodically too
- Emphasis could be laid on the following topics during the training programme,

- Documentation in logistics and warehousing
- Legal requirements in logistics and warehousing
- Costing and finance in logistics and warehousing
- Hazardous material management

6.14. Media and Entertainment

Media and entertainment sector comprises of Print media, Films, Television, Radio, Animation, Out of Home advertising, Internet advertising, Radio and Music industry. Most of the organized employment in the Media and Entertainment industry is based on the creative talent of the person, be it news reporting, editing, radio jockey, video jockey, advertising, animation design etc. Majority of the skills of these persons have been acquired with experience, creative interest, abstract point of view, and objective cum analytical rationality/capability. These skills cannot be taught but has to be acquired, similar to a painting class where students can be taught to paint but the skill has to be built by the student through the above said methods. Hence we do not recommend any training and skilling initiatives for this segment.

For factory workers engaged in news print agency, the skill gap would be similar to any manufacturing industry and hence it is not covered. Multiple training providers serve animation and gaming industry already, hence we are not covering it too.

6.15. Un organized Sector

Bangalore Urban and Rural districts are the economic nerve centres of the State and hence provide tremendous potential for the Un-organised Sector. Almost every sector including Textiles & Clothing, Manufacturing, Agriculture, Food processing, IT, Pharmaceuticals, Construction, Hospitality etc provide un organised employment and this sector supports the smooth functioning of the organised sector. The un-orgnaised sector could be either in the form of self employment or in the form of employment with an organisation. The significant employment generators out of the above for Bangalore Urban and Rural districts are, Building, Construction and Real estate, Textile and Clothing, Transporatation Logistics and Warehousing, Furniture and Furnishings, Domestic Workers, and Beauticians.

Organised training of the un-organised sector in India is just emerging, there is potential for training un-organised sector employees through formal training courses and this has been successfully done by countries like Philippines, Thailand etc.

Modular courses can be developed for the un-organised sector and they could be placed with facility management services companies and other companies which require the same. The priority in this case should be in emphasising to the trainees that the jobs they are performing are not deplorable, and every profession/job has a dignity attached with it, and hence a professional training would enhance their skills in performing their work better and hence improve their economic situation.

The recommendations on courses to be provided in un-organised sectors recognise for Bangalore are,

Private Player

Institutes can provide the following trainings,

- Building, Construction and Real Estate
    - Skills in Masonry, Bar Bending, Plumbing
    - Concrete mixing
    - Lifting and moving stones, sand, cement etc
    - Physical health management
    - Safety management
    - Work place character
    - Timeliness and attendance
- Silk Weaving
    - Operation and Maintenance of loom
    - Quality control
    - Identifying good quality silk
    - Trouble shooting problems in looms
    - Material handling and packaging
- Tailors
    - Tailoring skills

- Embroidery skills
- Needle usage skills
- Basic machine maintenance
- Pattern making, grading and draping
- Quality control
- Clothes cutting
- Material management
- Labelling and packing
- Ironing and pressing
- Laundry

- Carpenter
  - Wood working
  - Identifying types of wood and their properties
  - Wood machining
  - Dimensioning and tools usage
  - Joints production
  - Sanding and polishing
  - Varnishing and painting
  - Material handling
- Metal worker
  - Metal cutting, drilling, joining, welding
  - Designing metal
  - Painting metal
  - Dimensioning and tools usage
  - Material storage and handling
  - Machine maintenance
  - Glass cutting and polishing
- Household Helper
  - Food preparation – different cuisines
  - Basic language skills – Hindi and English
  - Reading and writing

- Answering telephones
- Courtesy and respect
- Ethical working
- Using kitchen appliances
- Cleaning and Washing with different chemicals
- Feeding children and aged persons
- Providing medication
- Basic hospice care
- Purchase goods from shop
- Do simple mathematical calculations

- Beautician – Hair stylist
  - Hair styling methods
  - Using hair styling tools
  - Hair washing and shampooing
  - Hair Colouring and Dyeing
  - Hair massaging
  - Hair removal techniques
  - First aid skills
- Beautician – Body care
  - Eye brow, eye lash, manicure and pedicure management
  - Techniques and technologies used
  - Hair removal
  - Cosmetics applying

  - Mehendi/ Henna application
  - Facial application
  - Massaging
  - Understanding of the chemicals used in beauty products and their effects

Government

- It is best that the private industry trains people in the un-organised sector, and the Government can sponsor the above training programmes and subsidise the cost of training of un-organised sector as they would not be able to bear the cost themselves

Industry

Unorganised sector is highly fragmented and most employment is done on a one on one engagement with the employer, hence the respective industry should take initiative in training them. Currently on the job training is the most preferred mode of training for the sector and this would continue.

6.16. Agriculture

Bangalore Rural district's economy is comprised of 56 per cent contribution from agriculture and 58 per cent are cultivators (37 per cent) and agricultural labourers (21 per cent). The University of Agricultural Sciences is located in Doddaballapur Bangalore Rural District is the guiding body for all agricultural training and extension activities. Given the potential for agriculture and availability of a reknowned institute, there is scope for upskilling of the farmers to attain more productivity. The initiatives can be focused in the Bangalore Rural District, as agriculture is concentrated there

Private Player

- University of Agricultural Sciences and interested private institutes to provide skilling courses in,
    - Crop planning and management
    - Seed preparation
    - Precision farming
    - Pest and week control
    - Agricultural mechanisation
    - Yield management
    - Inter cropping techniques
    - Crop intensification techniques

- Fertigation
- Drip irrigation
- Green house horticulture
- Sericulture
- Floriculture
- Sorting, grading and packing
- Marketing and Sales of agricultural produce

- Training has to be conducted in the form of extension activities and demonstration farming

Government

The Government can sponsor the above training programmes and subsidise the cost of training of farmers as they would not be able to bear the cost themselves

6.17. Others

Bangalore Urban district is also home to many other manufacturing and engineering based industries. They have reported shortage of skilled manpower in some of the key functions like mechanics, plumbers, electricians, masons, welders, metallurgy (diploma / engineer) etc. While the ITIs and ITCs in the district are focusing on some of these skills, they are not able to produce the required number and quality of manpower required for the same. In addition, we have also found that some of the basic skills such as communication skills, English speaking skills, and soft skills are lacking in manpower across all sectors and that is another area of opportunity for private players who wish to enter the district.

3.4. BELGAUM

1. Introduction

Belgaum district in northern Karnataka is also known as the bread basket of the state due to its agriculture output. This district is the second most populous district in Karnataka. The district is spanned across an area of 13,415 square kilometres. It is bounded on the west and north by Maharashtra state, on the northeast by Bijapur District, on the east by Bagalkote District, on the southeast by Gadag District, on the south by Dharwad District and Uttara Kannada districts, and on the southwest by the state of Goa. The district of Belguam has rich cultural heritage, having been the seat of several ancient kingdoms like the Kadambas, Rashtrakutas and the Chalukyas. These dynasties have left behind several monuments and temples that attract tourists. Also, the famed Gokuk falls is present in Belgaum district.

It is sub-divided into 10 sub-districts and has 1,255 villages. The majority of the population, about 76 per cent, lives in the rural areas. About 71 per cent of the population (as of Census 2001) works in agriculture. The remaining is in household industry (less than one per cent) and other workers[8] at 28 per cent.

[8] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

Jowar, maize, wheat and paddy are the key crops grown. The district is also famous for its iron based units and foundry units. In fact, one of India's foremost foundry clusters – The Belgaum Foundry Cluster – is present here which is in the process of standardizing the entire sector. Another industry that has been prevalent for long is the textile. The district is known for the cotton units that employ women at large.

Today, Belgaum is gaining prominence for the foundry and textile units.

Table 83: Comparison of Belgaum district with Karnataka – key indicators

Indicator	Year	Belgaum	Karnataka
Area, in sq.km.	2001	13,415	191,791
Percentage share in State geographical area, %	2001	6.99%	100%
No. of sub-districts	2011	10	175
No. of inhabited villages	2001	1,255	27,481
No. of households	2001	789,164	10,401,918
Forest area as a % of total geographical area	2001	14.16%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

1.1. Demography

As per Census 2011, Belgaum district has a population of 47.78 lakh persons – about 15 per cent of the State population. About 19 per cent of the population is concentrated in the Belgavi taluka. This is followed by the Chikkodi and Gokak talukas with about 13 per cent each. While 61 per cent of the population in the district is in working-age group (15 to 64 years), about 44.5 per cent is actually working i.e. work participation rate.

The district's literacy rate is 73.94 per cent, which is slightly lower than the State average of 75.6 per cent, but close to All-India average of 74 per cent. Male literacy at 82.90 per cent is significantly higher than female literacy rate at 64.74 per cent. Of the 30 districts, Belgaum ranks ninth on Gender Development Index (GDI), with a value of 0.635.

Table 84: Key demographic indicators

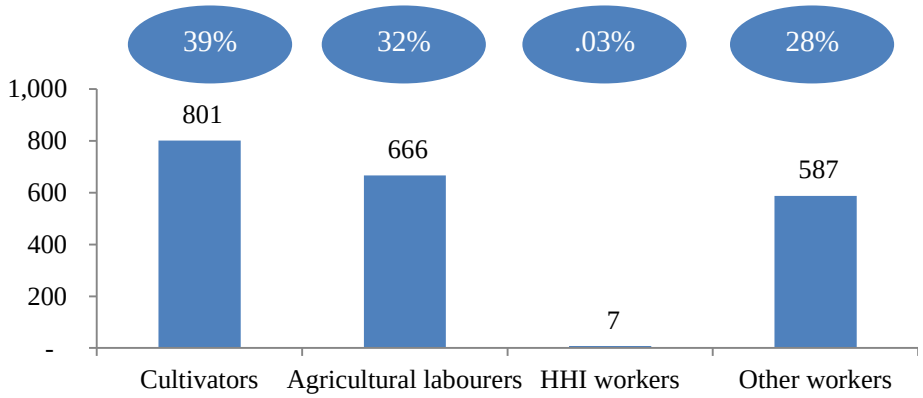
Indicator	Year	Belgaum	Karnataka
Population, No.	2011	4,778,439	61,130,704
Decadal growth rate of population, %	2001-11	15.13%	15.7%
District's share in State's population, %	2011	7.8%	100%
Urban population as a percentage of total population, %	2001	24%	34%
SC population, %	2001	10.9%	16.0%
ST population, %	2001	5.77%	7.0%
Sex ratio, No. of females per 1000 males	2011	969	968
Population density, per sq. km.	2011	356	319
Literacy rate, %	2011	73.94%	75.6%
Main workers, No.	2001	1,537,645	19,364,759
Marginal workers, No.	2001	340,129	4,170,032
Working age population* as a percentage of total population, %	2001	61%	63%
Work participation rate^, %	2001	44.5%	45%
HDI	2001	0.648	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 18.18 lakh persons. Of this, 39 per cent are cultivators, 32 per cent are agricultural labourers, less than one per cent is workers in household industry and 28 per cent are other workers.

Figure 45: Belgaum district's worker profile, as of 2011, in thousands



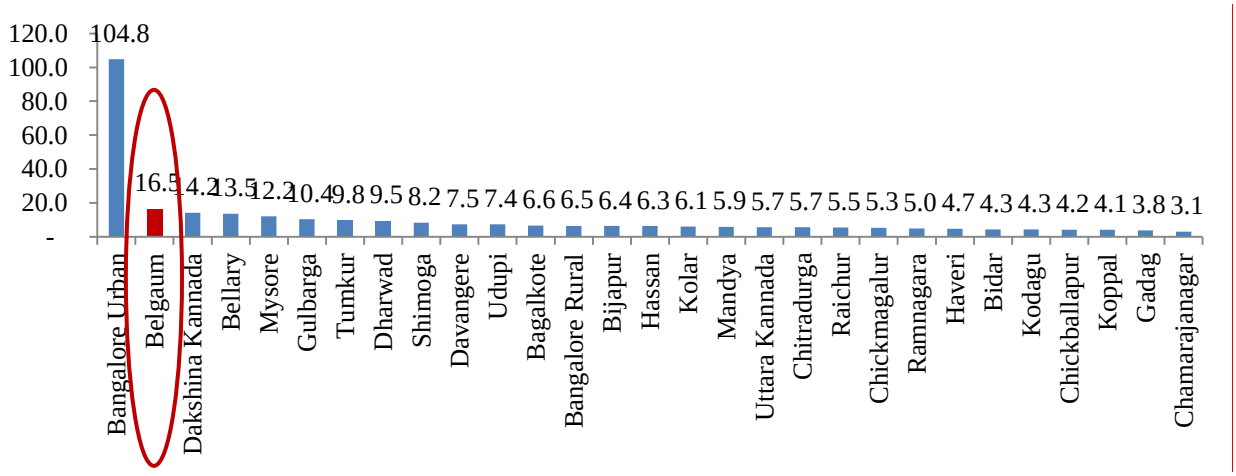
HHI: Household Industry

Source: Census 2001, Census 2011. Numbers are estimated.

1.2. Economy

As of 2008-09, Belgaum district had the second largest Gross District Domestic Product (GDDP) in Karnataka at Rs 16,495.89 crore (5.36 per cent of the Gross State Domestic Product). In terms of per capita GDDP though, it ranked 16th amongst 30 districts at Rs 35,711. This was lower than the State average of Rs 53,101.

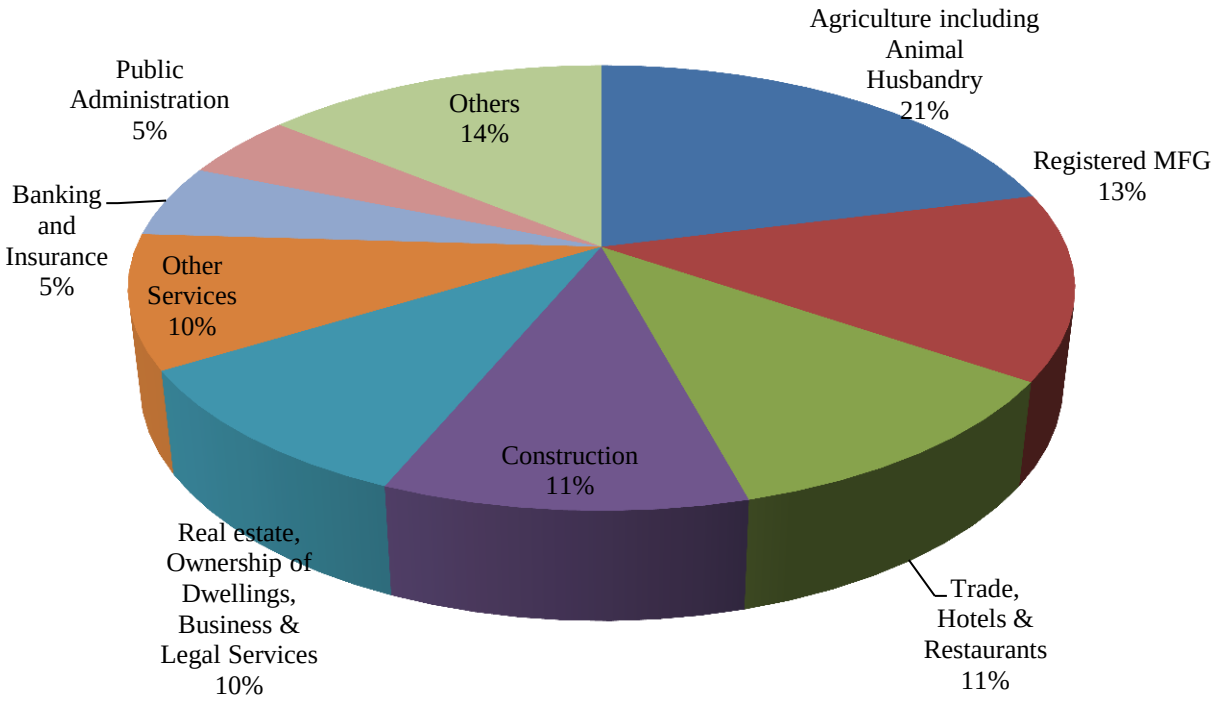
Figure 46: Gross District Domestic Product, in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 46 per cent in 2008-09. This is followed by secondary sector at 30 per cent and primary sector at 24 per cent.

Figure 47: Sector wise distribution of Belgaum's GDDP, as of 2008-09, 100% = Rs 16495.98 crore



Source: Belgaum District At a Glance 2009-10

Agriculture: Of the total area of 13,415 sq. km. in the district, about 59 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of jowar, wheat and maize under food crops. Tobacco is also grown in the district as commercial crop. For details of crops grown in Belgaum district, refer to annexures.

Industry: As of 31st December 2011, Belgaum district had 29 large and medium scale industrial units, employing about 26,000 persons. These included organizations mainly in the genre of sugar mills, foundry and iron work and textile (Refer to annexures for complete list).

Belgaum also has 33,707 Small Scale Industries (SSIs), employing about 1.38 lakh persons. As of March 2010, majority of these units were textile, job works units, food and intoxicants and tree based. Refer to annexures for details. The district has five industrial areas, totalling 739 acres of land. For details, refer to annexures.

In the GIM 2010, there were 28 MoUs signed for Belgaum district. These MoUs reflected the key sectors that flourish in the district – namely, textile, iron based foundry and sugar. For detailed status of these projects, refer to annexures.

Karnataka held its second GIM in June 2012. During this event, 65 MoUs / Expressions of Interest / Registrations of Interest happened for this district. These MoUs are mainly across the sectors of textile, hospitality and sugar. Also, some energy generation EoIs have also been signed. For details of these projects, refer to annexures.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 59 per cent of GDDP in Belgaum district. Of all the services, the key services in the district are of 'trade and hotels' at 10 per cent and 'real estate, real estate ownership of buildings' at nine per cent of GDDP.

1.3. State of education

As of March 2010, Belgaum district had 2,926 schools, with 897,607 students enrolled. There are 239 pre-university (PU) colleges with 70,192 students. There are also 1,681 general colleges, two medical colleges, 10 polytechnics (for technical education), seven engineering colleges and two dental colleges. For details of courses offered by polytechnics, refer to annexures.

Table 85: School education infrastructure in Belgaum district, as of March 2010

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Govt.	1,434	299,029	368	153,018	269	76,377
Aided	13	28,231	2	49,329	310	107,379
Unaided	250	111,585	4	39,585	276	33,074
Total	1,697	438,845	374	241,932	855	216,830

Source: Karnataka Education Department

Table 86: Higher education infrastructure in Belgaum district, as of March 2010

Colleges	No.	Students
PU Colleges	239	70,192
General	1,681	28,548
Medical	2	547
Polytechnic	10	2,710
Engineering	7	2,099
Dental	2	140

Source: Belgaum District At a Glance 2009-10

For vocational training, Belgaum district had a total of 118 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, nine were Government ITIs, eight were private aided ITIs and remaining 101 were private unaided ITIs. All the 118 ITIs together have a seating capacity of 11,529.

Table 87: Key ITI indicators in Belgaum district, as of March 2012

Indicator	Value
Total Number of ITI	118
Number of Government ITI	9
Number of Private aided ITI	8
Number of Private unaided ITI	101
Total Seating capacity	11,529
Student pass rate	80-85%
Student drop-out rate	3-5%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Belgaum district, we have found that on an average, of all the students that pass out from an ITI in each year, 75 – 80 per cent find jobs in the market. For details on courses offered by ITIs in Belgaum, refer to in annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions. The Government Departments offer courses in trades such as machinist, tool room training, vocational training, poultry farming, horticulture, tourist guide, etc.

The private training institutes are offering courses in horticulture, nursing, physiotherapy, computers, Ayurveda and air hostess training. For details of courses offered by private training institutes in Belgaum district, refer to annexures.

1.4. Youth Aspirations

In the process of identifying the growth engines for the Belgaum district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- Prefer working in the district, especially around Belagavi city, as there are plenty of opportunities
- Mumbai is the preferred destination, if they want to migrate
- Students, who are not able to get admissions in good colleges, prefer ITIs. The latter are also preferred because ITI certification helps in obtaining Government and even private jobs. The low fee is an added advantage.
- Quality of courses and teachers is average. Quality of infrastructure is below average.
- Prefer to remain unemployed rather than joining jobs with lower salaries.
- Preference for white collar jobs as compared to blue collar and manual jobs.
- Want to master communication in English
- Also, the youth expect special course for interviews – especially in the sphere of presenting the answers in a better manner and overall polish of their soft skills
- Want enhanced computer training
- Want better infrastructure, especially for CNC courses, as it will directly impact their placements

3. Developmental concerns

Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Cultural shift required:** Belgaum has always been known as a cultural center, where the working population takes the things as they come. But today, the district is at the cusp of

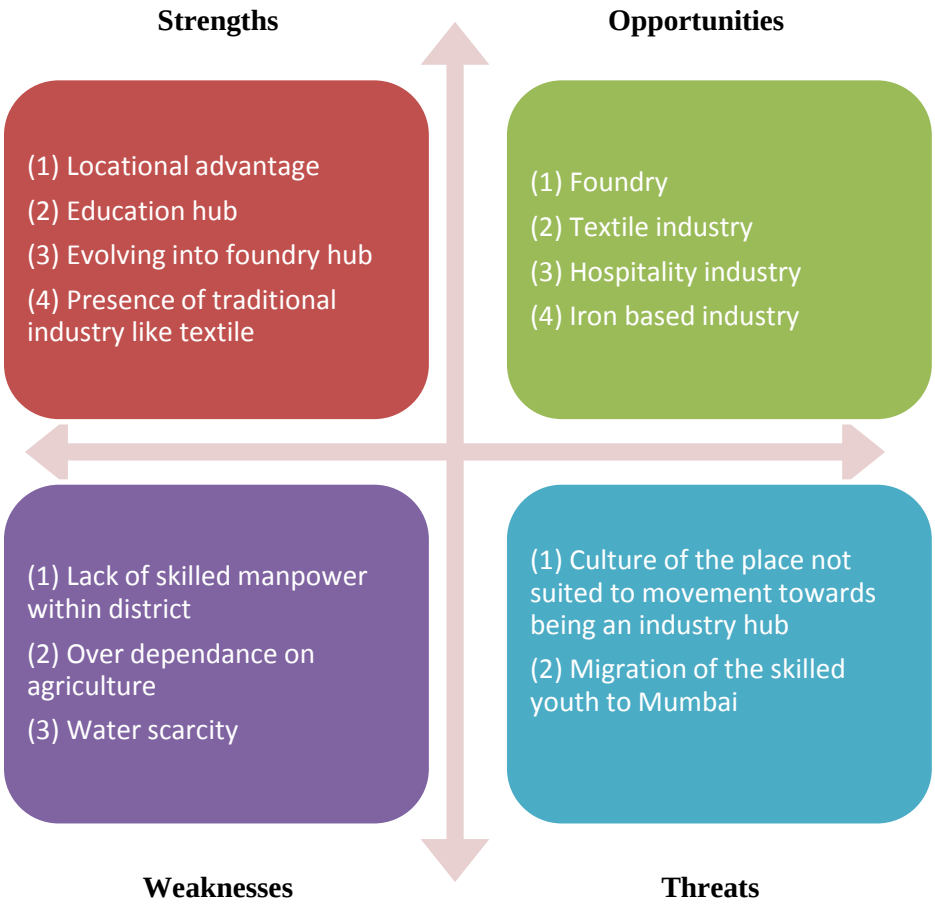
change – where it is evolving into an industry hub, especially for foundry units, iron based industries and textile. The reason is the locational benefit it reaps (centrally located between the Mumbai – Bangalore corridor), like its neighbour Dharwad district. There is need to orient the work force in the district to be prepared to work in the shop floor for long hours.

- **Water scarcity:** As is the case with most districts across Karnataka, Belgaum district also faces acute water scarcity. As the surface water has depleted, there is difficulty in irrigating the agricultural land. The current water management system employed in the district is completely dependent on monsoons. The key industries in the district like foundry and sugar, have high dependence on water.

SWOT analysis

Based on the diagnostics of the Belgaum district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 48: SWOT Analysis of Belgaum district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 4.53 lakh persons is likely to be generated in Belgaum district. Agriculture and allied activities are expected to remain the biggest employers, with Belgaum being one of the most productive districts in agriculture. As the economy grows, employment demand in supporting sectors such as

construction, transportation, healthcare and education is also expected to increase at a faster rate. However, sectors which are unique to Belgaum and where skill up-gradation will be required within Belgaum are textile and clothing, sugar processing, hospitality and foundry.

Table 88: Incremental demand in Belgaum – 2012 to 2022

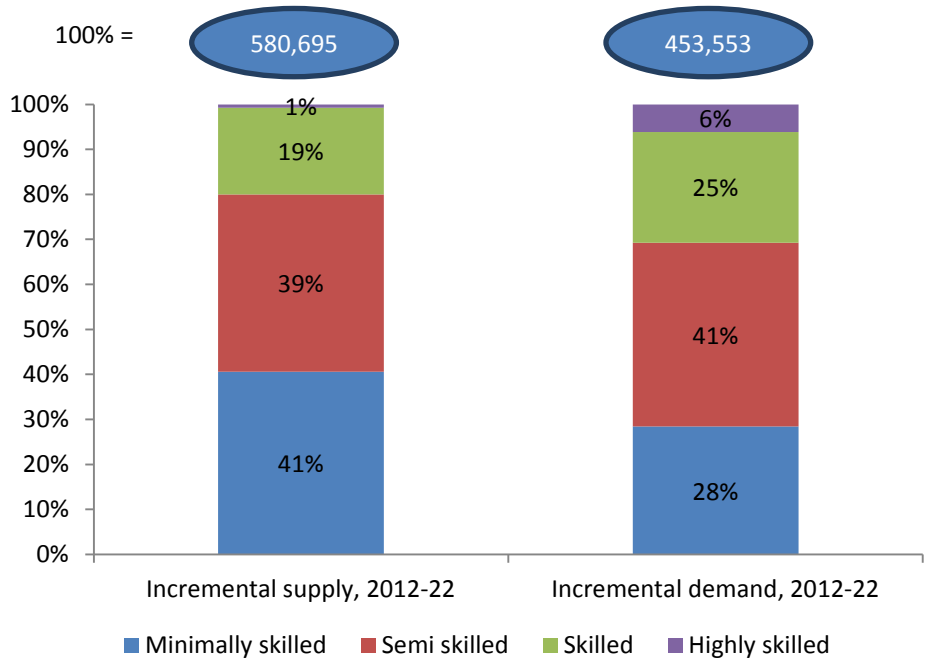
SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	154,101	128,345	19,183	3,490	3,082
Auto and Auto component	4,594	459	2,986	919	230
BFSI	16,501	-	9,901	4,950	1,650
Building, Construction industry and Real Estate	81,044	24,313	40,522	12,157	4,052
Chemicals & Pharmaceuticals	1,893	379	568	568	379
Construction Materials and Building Hardware	5,033	503	3,271	1,007	252
Education and Skill Development	21,098	-	-	18,988	2,110
Electronics and IT hardware	1,080	108	540	378	54
Food Processing	6,734	2,020	2,020	2,020	673
Furniture and Furnishings	1,113	445	445	167	56
Healthcare Services	32,632	-	3,263	22,843	6,526
IT & ITES	45,538	-	31,877	11,384	2,277
Media and Entertainment	-	-	-	-	-
Organised Retail	-	-	-	-	-
Textile and Clothing	7,785	1,557	4,671	1,168	389
Transportation, Logistics, Warehousing and Packaging	29,948	5,990	17,370	5,990	599
Tourism, Travel, Hospitality & Trade	44,199	8,840	30,055	4,420	884
Unorganised	211	42	123	42	4
Mining	48	10	29	5	5
Total	**453,553**	**173,011**	**166,825**	**90,496**	**23,222**

Source: IMaCS Analysis

The incremental supply of work-force between 2012 and 2022 is estimated at 5.80 lakh. This is higher than the demand of 4.53 lakh. This indicates why some of the skilled personnel migrate to Mumbai and Bangalore for job opportunities. Also, demand for highly skilled people is estimated to be more than the supply going forward. This requires specialist skills to be imparted. Also, there

is lesser demand for minimally skilled. So, the people have to be up-skilled to diversify their skill base to be able to find jobs, going forward.

Figure 49: Skill wise incremental demand and supply in Belgaum district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on our field surveys in Belgaum district, we have found out that sectors where skilling interventions are required are mainly agriculture and allied, textiles and clothing, sugar processing, hospitality and foundry. There is also need to skill the human resource in foundry in the latest technology. In addition, the district also has other manufacturing and engineering industries, which do not have significant employment generation potential, but are facing shortage of skilled manpower for functional skills such as fitting, electrical, welding, metallurgy, masonry etc. These trades also need to be offered to the youth.

Table 89: Sectors where interventions are required in Belgaum– comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Belgaum	Karnataka
Agriculture		
Auto and Auto component – foundry		

High Growth Sectors identified by NSDC	Belgaum	Karnataka
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 90: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Auto and auto component – foundry	√	√	√
Tourism, Travel, Hospitality & Trade	√	√	√
Food processing - sugar	√	√	
Textile and Clothing		√	√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Auto and Auto Component: Foundry

Belgaum is a leader in the foundry industrial sector – being the number one center in Karnataka and amongst the top ten in the country. Some of the units date back to four decades. Belgaum has more than 140 foundries across the district offering employment to over 12,000 people. These, on an average, produce more than one lakh tonnes of casting per annum. This casting is valued at about Rs. 500 crores. The main products that this sector manufactures are:

- Iron and steel castings
- Tractor components
- Pumps
- Motor body castings

These cater to the needs of general engineering and auto sectors. To promote this unique sector, the Belgaum foundry cluster was formed in 2004. The objectives of the cluster include the development of the requisite infrastructure required to boost the production and also capability building in human resource and technology. This sector as a whole is targeting exports worth Rs. 350 crores by 2013.

The foundry value chain is given in Figure below.

Figure 50: Value chain in foundry industry

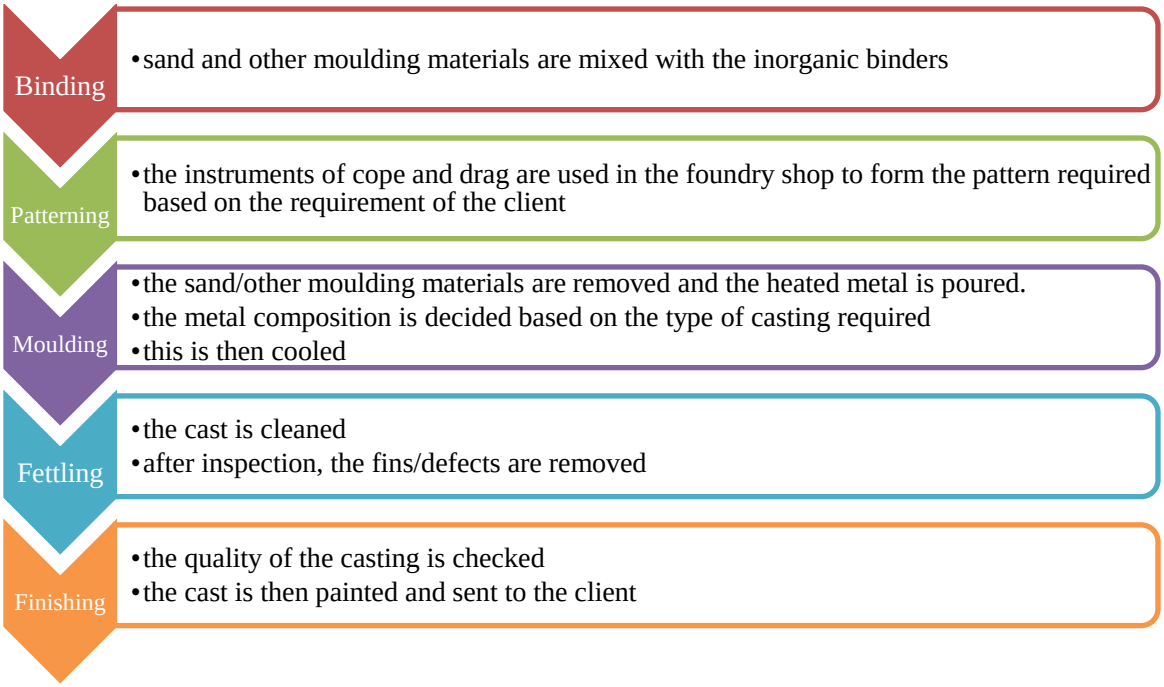


Table 91: Skill gaps foundry in Belgaum district

Role, educational qualification	Expected competency	Skill gaps
Managers (management degree holders/experienced industry leaders)	▪ Ability to manage the workforce ▪ Ability to give strategic ideas ▪ Knowledge of quality testing in foundry ▪ Ability to use modern machines like vertical machine center, spectrometer, etc ▪ Ability to guide on the process of effluent treatment ▪ Record maintenance ability ▪ Highly qualified in personnel and soft skills	▪ No skill gap observed here. Most of the managers are able to handle their responsibilities effectively. They are from all over Karnataka state
Engineers (electrical and mechanical)	▪ Knowledge of machinery and tools ▪ Ability to trouble shoot ▪ Shop floor management ▪ Knowledge of 3D modelling techniques and other relevant IT skills for the design of castings ▪ Soft skills	▪ Not able to adapt to the latest technology quickly ▪ Lack the soft skills – in terms of report writing, documentation of faults, etc ▪ Not many engineers being attracted to this as there is perception that this is not a profitable field ▪ No idea of the 3D technology
Supervisors (Diploma in electrical, mechanical, ITI	▪ Ability to supervise activities conducted in the department for which responsibility is entrusted. ▪ Ability to train the new comers	▪ Not able to adapt to the latest technology used in shop floor ▪ Not enough mechanical

Role, educational qualification	Expected competency	Skill gaps
qualified)	▪ Overseeing the safety of all workers ▪ Complete understanding of all safety regulations and ability to handle safety issues ▪ Knowledge of PRC systems ▪ Give the specifications to the operators and welders/fitters	and electrical diploma holders available
Fitters (experience based), foundry men (past experienced), turners, CNC program qualified personnel	▪ Basic ability to handle the machines ▪ Understand the basic safety aspects ▪ Work on the castings to the specifications required ▪ Have the CNC degree qualification	▪ Not able to adapt to the latest technology used in shop floor ▪ Less number of fitters, which forces the managers to recruit from outside ▪ Lack the discipline to come and put in the required hours of work ▪ Less number of CNC qualified personnel
Helpers / machinery attendants (High school pass)	▪ Ability to help operators with their day to day functions ▪ Help in cleaning the machines ▪ Help in loading and un-loading	▪ Lack the discipline to come and put in the required hours of work

Source: IMaCS Analysis

5.2. Food Processing: Sugar

The district of Belgaum is known for being the sugar capital of the state. Sugarcane, the main raw material for the industry, abundant grows in the district (191,317 hectares under cropped area).

This factor advantage has led to this industry doing well in the district for the last few decades. As of April, 2012 1,32,48,982 metric tons of cane was crushed and the output which was taken for the next level of processing is 14,97,259 metric tons. Further demarcation of the output reveals that Belgaum district alone has produced 100,200 TCD (tonne sugarcane crushed per day) of sugar, 295 MW of co-gen and 549 KLPD (kilo litres per day) of ethanol.

The district currently has 20 sugar processing units of which seven are cooperative and 13 are private sector units. In addition to this, there is a proposed capacity addition of 17,500 MT of output which will is planned to be achieved with eight proposed units.

The new sugar factories that are proposed in the district include Om Sugars of Jainapur in Chikkodi taluk, Hemras Sugars of Hudli in Belgaum taluk, Sri Basaveshwar Sugars of Baliger in Athani taluk, Soubhagyalaxmi Sugars of Hirenandi in Gokak taluk, Godavari Sugars of Koujalagi in Gokak taluk, Inamadar Sugars of Hirekop in Savadatti taluk, Beereshwar Sugars of Alagawadi in Raibag taluk, Sangameshwar Sugars of Devapurhatti in Raibag taluk and RN Bagwan Sugars of Beedi-Golihalli in Khanapur taluk.

The value chain in the sugar industry in Belgaum district is given below in Figure 51

Figure 51: Value chain in sugar in Belgaum

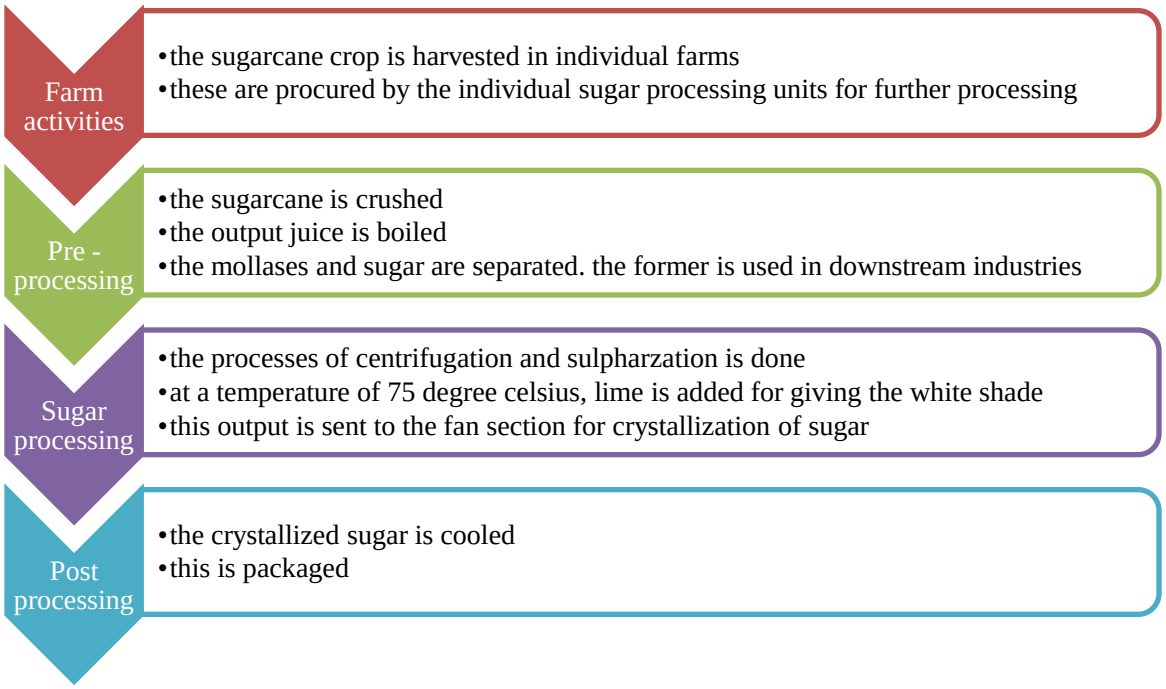


Table 92: Skill gaps in sugar industries in Belgaum district

Role, educational qualification	Expected competency	Skill gaps
Input Department / Cane Department (illiterate to ITI pass outs)	▪ Delivering weighed cane on feeder table ▪ Feeding cane to cane carrier ▪ Passing cane through cane preparatory devices such as leveller, chopper, cutter and shredder and the ability to operate all these machines ▪ Loading cane to the engineering department	▪ There is on-the-job training given for doing the basic tasks in the mills. This training lasts generally for two weeks.
Engineering Department and Processing Department (SLCC pass outs, ITI pass outs, diploma holders and a few mechanical engineers)	▪ Passing prepared cane through four mills in series where juice is extracted and the residue (bagasse) is conveyed to boilers ▪ Ability to burn the bagasse in boiler to produce super-heated steam ▪ Ability to use super-heated steam to produce electricity in high pressure turbines in power house ▪ Transfer of juice to juice sulphiter through primary juice heater which heats the juice to 70 degree Celcius. ▪ Knowledge of adding adequate quantities of sulphiter milk of lime and supler di-oxide gas so that the reaction can take place ▪ Ability to maintain the pH at 7.0 to 7.1. ▪ Knowledge of treating the juice again at 103 degree Celcius in secondary juice heaters	▪ There is no skill gap observed in Belgaum. The reason why the sugar industry is doing so well is due to the available work force who are willing to work in the mills.

Role, educational qualification	Expected competency	Skill gaps
	▪ Sending the heated juice t clarifier for settling the precipitates ▪ Ability to pump the clear juice from the clarifier to quintuple effect evaporator where 80% of water is evaporated and thick syrup is delivered to syrup sulphiter, where SO^2 gas is passed and pH is maintained at 5.0 ▪ Boiling the syrup in vacuum pans to produce sugar crystals ▪ Separation of sugar crystals and mother liquor (molasses) ▪ Ability to obtain sugar by centrifugation of massecuite, which is then dried, graded and sent to bins for bagging	

Source: IMaCS Analysis

5.3. Travel, tourism and hospitality

As mentioned before, the district of Belgaum has numerous spots which showcase the architecture of an era bygone. The main city of Belagavi, which acts as the hub for tourists, enjoys moderate and pleasant climate. In the month of March 2012, about 1.17 lakh tourists visited various spots in Belgaum. In addition to the tourism attractions, the district is gaining prominence as a business center. So, capacity building in the hospitality industry is the need of the hour. The government tourist department is currently offering training in guide skills for 15 days duration. But, overhaul of the infrastructure is required to attract more tourists – in terms of Yatri Nivas in key spots, restrooms, etc. Also, value added skills like adventure sport training, soft skills and language fluency needs to be developed.

Gokak Falls

Table 93: Tourist inflow in March 2012

Key Tourist Spot	Number of domestic tourists	Number of foreign tourists
Kamalabasti fort	1,00252	5
Yellama temple and Gokak falls	15,355	-
Chitoor fort	1,548	1

Source: Tourism department, Belgaum

Table 94: Skill gaps in hospitality industry in Belgaum district

Role, educational qualification	Expected competency	Skill gaps
Hotels and other hospitality establishments (hospitality management degree, basic degree)	▪ Managing all the facilities and the functioning of the work-force. ▪ Supervising of the work conducted by housekeeping ▪ Soft skills and interpersonal skills ▪ Ability to connect with the guest and solve their problems ▪ Knowledge of the local attractions ▪ Ability to brand their offerings ▪ Overall etiquette	▪ Less managerial staff ▪ English speaking difficulties ▪ Customer relationship management difficulties ▪ Lack of professionally trained adventure sport teachers

Role, educational qualification	Expected competency	Skill gaps
Tour operators / guides (illiterate to 10th pass, trained by Tourism department)	▪ Route planning and optimisation ▪ Ability to liaison with airline, hotels and local community ▪ Ability to manage tourist expectations ▪ Customer Relationship Management ▪ Soft skills ▪ Understanding of local and English speaking skills	▪ Lack of soft skills ▪ Lack of many professionally trained guides

Source: IMaCS Analysis

5.4. Textile

Textile is one of the oldest industries in Belgaum. The reason why textile was established in Belgaum was due to its locational advantage i.e. the fact that it was centrally located between the two centers of Bangalore and Mumbai. Today, the textile scenario is dominated by the usage of power looms. This is mainly concentrated in the areas of Vadagaon, Khasbagh and Shahpur. Textile provides employment to majority of the working population after agriculture. Though this sector is falling out of favour with the youth, there do more apparel units coming up which are export oriented due to the older generation and the women folk prefer to work in the mills as this a traditional skill they possess. At the GIM 2012, over 30 MoUs/EoIs have been signed for this industry which has a proposed investment of about Rs. 1,400 crores.

Power loom unit in Belgaum

Figure 52: Value chain in textile industry in Belgaum

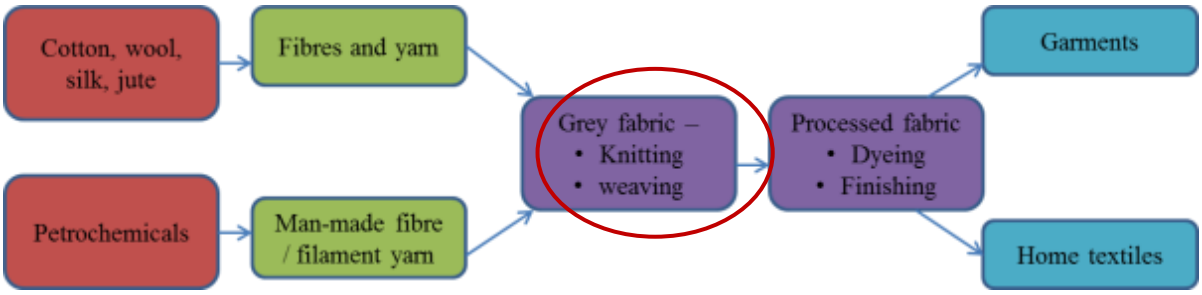


Figure 53: Value chain in garments industry – present in Belgaum district

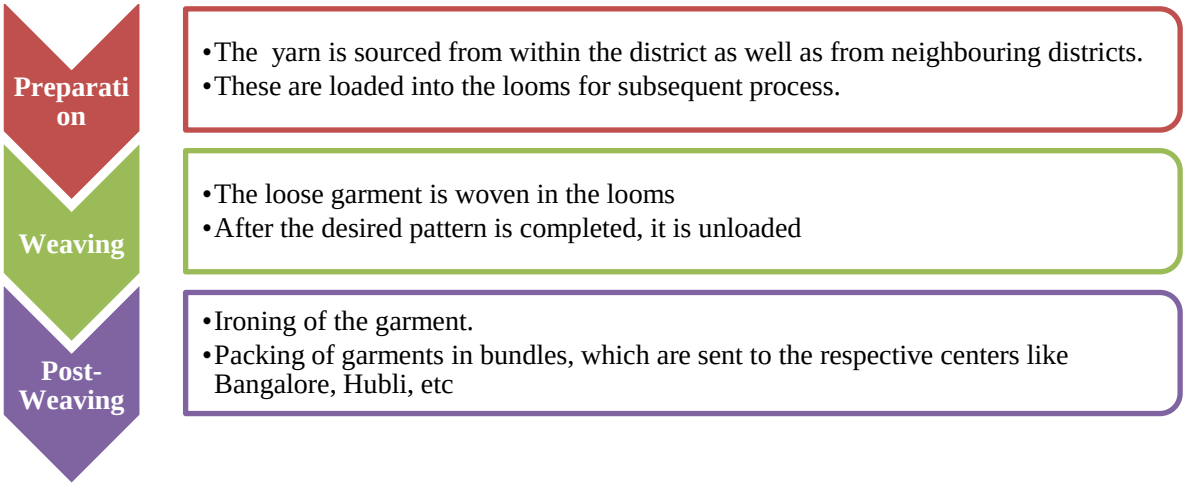


Table 95: Skill Gaps in Textile industry in Belgaum

Role, educational qualification	Expected competency	Skill gaps
Manager / supervisor / floor in-charge (Graduate)	▪ Managing all the facilities and the functioning of the work-force. ▪ Supervising of the work conducted by operators and conducting quality checks. ▪ Knowledge of pattern making. ▪ Ability to undertake inspection, production planning and control. ▪ In-depth knowledge of production processes and inspection methods. ▪ Leadership skills ▪ Soft skills and interpersonal skills	▪ No skill gaps here. There are adequate skilled managers in the district
Operators (illiterate to 10th pass, trained in tailoring from NGOs or training provided by Department of Textiles)	▪ Good machine control – knowledge of threading, weaving patterns on different shapes and following the specifications ▪ Knowledge of machine maintenance procedures ▪ Knowledge of pattern making, grading and draping ▪ Ability to work in teams / inter-personal skills. ▪ Soft skills	▪ On the job training provided for one week, on joining of job to explain requirements and basic skill-up gradation. ▪ Even those who are trained before the job have to be re-trained, especially on running of machines, as the training institutes do not have good machine infrastructure.
Quality control executive (Graduate and	▪ Ability to inspect if the garments have been weaved as per given specifications and instructions	▪ On-the job training provided as such skills are lacking in persons trained at training

Role, educational qualification	Expected competency	Skill gaps
with some experience in garment industry)	▪ Ability to check for quality adherence ▪ Ability to understand and prevent defects like size variations, loose threads, stains etc.	institutes and usually come from experience only.
Helpers (illiterate to 10th pass)	▪ Ability to cut the cloth based on specifications. ▪ Ability to button the stitched garments. ▪ Ability to put tags on the stitched garments. ▪ Ability to iron the ready garments properly. ▪ Ability to iron the garments ▪ Ability to pack the garments in bundles	▪ Basic skills required for this profile, for which no / minimal training required. Mostly provided easily on the job.

Source: IMaCS Analysis

6. Recommendations

Recommendations for Belgaum district focus on the sectors of foundry, sugar processing, textile and tourism and hospitality. Some of these sectors will have recommendations for the private sector which will directly translate to skills being developed and the others will need government intervention to facilitate improvements. Also, several skilled youth especially fitters, welders and electricians, migrate to Mumbai for job opportunities across sectors like auto, chemical, etc. These trades' seating capacity can also be increased.

Finally, since a significant chunk of employment is concentrated in agriculture, thus, major up-skilling can be done for those workers, updating them of latest techniques of farming. This will help them improve their livelihood opportunities and will increase their income levels. While the detailed recommendations follow, summary is given in the table below.

Table 96: Key recommendations for Belgaum – summary

Sector	For private players	For Government players	For industry
Sugar processing	▪ Training in modern methods of sugar processing after industry landscape changes with sufficient value added products	▪ Farm level interventions ▪ Structural changes ▪ Research investment to improve the productivity of sugar	▪ Invest in R&D to improve the productivity
Textile and Clothing	▪ Skills across the sectors of spinning, weaving and processing ▪ Skills also to make familiar with the modern designs and finishing techniques	▪ Aid in formation of SHGs which will involve more women in the sector	▪ Modernize majority of the mills ▪ Offer in-house training to make the final produce market attractive
Hospitality	▪ Skilling based on the functional roles such as hospitality establishment, tour operator and special personnel ▪ The capacity building will help in giving customer relationship	▪ Aid in provision of infrastructure in key spots in the form of Yatri Nivas, toilets, etc	▪ na

Sector	For private players	For Government players	For industry
	management skills		
Foundry	▪ Skills that will build capacity and technological ease ▪ Skilling to be based on the functional role of an entry level foundryman and experienced foundryman.	▪ The infrastructure needs to be ramped up – especially the approach roads to the foundry units need to be maintained well ▪ The water supply needs to be made better as the sector is dependent on water	▪ In-house training for safety procedures ▪ Tie-ups with international foundry units to orient the employees with latest technology used ▪ Partner select ITI to offer trade specific courses like 3D modeling

6.1. Auto and auto components - Foundry

Belgaum is the nodal district for foundry based units in Karnataka. As discussed earlier, this sector produces close to a lakh of the castings every day across its 140 foundry units. Capitalizing on the incremental demand for castings and the preference amongst the youth to be a part of this sector, foundry in Belgaum is looking at growth in the next five years. The entire value chain, starting from binding to fettling and finishing is carried out in the units in the district. The main interventions for this should work towards the following targets for the foundry sector:

- To make the foundry produce internationally competitive castings
- To hinge on latest technology developments to make the products better

- To suitably skill the human resource to achieve these targets

These skilling initiatives can be provided by NSDC/private player in the taluka headquarters across the district; with the main center at Belagavi city.

Private player

The foundry sector has already realised the importance of skilled personnel who will be instrumental in taking the sector forward. To bring to the fore the importance of training, a Sector Skills Council has been put forth by NSDC already for this sector.

This need for quality training is especially important in the Belgaum district with more than 12,000 people employed directly and more numbers employed indirectly. A Foundry Training Institute with its headquarters in Belagavi and support institutes in taluka headquarters can be set up. This can be in partnership with the Indian Institute of Foundrymen which already is into research and training of the foundry men in India. Some of the key areas where this institute can focus are:

1. Foundry technology
2. Forge technology
3. Metallurgy and minerals sciences
4. Manufacturing engineering

Comprehensive courses across these areas for the aspiring foundry personnel will equip them to work with the skills and will also be able to work with the latest technology.

Some of the specific courses according to the functional role that can be offered are:

Table 97: Training for foundry sector - Belgaum

Functional role	Training required
Entry level foundry man (Foremen, patternmakers)	1. Metal casting practices 2. Different types of designs in casts 3. Basic casting defects and how to prevent them 4. Basic techniques of core making and moulding

Functional role	Training required
	5. Basic safety procedures
Experienced foundry man (foundry engineers, supervisors, metallurgists, and quality control personnel)	1. Casting design using 3D modeling 2. Casting costing 3. Analysis & Reduction of Casting Defects 4. Chemically Bonded Molding & Core making 5. Safety procedures 6. Usage of advanced machines 7. Marketing ability 8. Soft skills

**List of courses is indicative based on industry interactions*

Industry

One of the biggest concerns in foundry is the need for comprehensive safety training. The industry can offer safety procedures training to the employees. In addition, there are requirements in knowing the latest technology. Even if the training provider gives these courses, there will be challenges in adapting with them on the shop-floor. So, practical training can be given in terms of internships. Also, foundry in Belgaum has shortage of highly experienced personnel. The industry can sponsor exchange programs for the personnel experienced to improve their know-how.

6.2. Food processing - Sugar

Belgaum district produces the maximum sugar output in the State. There are more mills coming up across the district. Though there are no specific 'skill gaps' that are observed in the mills, interventions are required at the farm level to increase the productivity. The Government can provide the impetus for this type of change.

Government

The sugar industry has existed in Belgaum for several decades. A number of farmers have aided in the industry's growth by cultivating sugarcane.

A number of significant changes have occurred in the industry in the last few years. The method of production is slowly changing from being dependent on traditional methods to usage of modern methods of cultivation. At this juncture, the government department Food Karnataka Limited, needs to aid the small growers and farmers to increase their yield. A Sugar Research Institute – S Nijalingappa Sugar Research Institute - has already been established in Belagavi which focuses on productivity and taste improvement. In addition to this, the government – the district administration - can aid along the following lines at the ***farm level***:

- Improve the road facilities for ease of transport of canes to the mills
- Sophisticated irrigation systems across the district to battle the dependence on monsoons
- Awareness on the right pesticides that can be used to reduce the loss due to pests like smut
- Loan programmes to upgrade the equipment and supplements required by the plants

In addition to the farm level interventions, some ***structural interventions*** can also be implemented that will result in the income increase for the farmers. A statutory body can be created to look out for the farmer and overall industry welfare. This can be vested with powers to regulate and control the industry, including the functions of arbitration, regulation, planning research and development and monitoring of cane and sugar quality. Also, the industry research and technical assistance is required to improve productivity and communication of industry developments at the international level can be done by this entity.

This kind of structural change revolutionized the sugar industry in Jamaica – where this type of entity changed the sugar industry from being isolated farms that supplied to mills to creation of an industry that provided livelihood to millions to sugar farmers especially women.

Industry

There is need to strengthen the research and development efforts for sugarcane cultivation as well as sugar industry. Also, stronger association of the industry with the growers will ensure that R & D efforts effectively help them by reducing cost of production of sugar and better utilization of by-products of the industry.

6.3. Travel, tourism and hospitality

The district of Belgaum has historical monuments, holy places and nature splendours due to the Sahyadri ranges. Over one lakh tourists visit the district. In addition to the tourist inflow, the district is centrally located developing industry hub. This requires sufficiently trained and skilled work force.

Private player

Throughout the tourism value chain in Belgaum, based on the functional roles, training and skilling is required. The institutes can be set up in Belagavi town and taluka headquarters.

Table 98: Training required in Travel, tourism and hospitality - Belgaum

Functional role	Training required
Tourist guide/operator	• Communication skills • Route optimization • Knowledge on the history behind various monuments and ways to communicate them bring to fore the story behind the legends • Courses to engage with the customer i.e. soft skills training
Hospitality establishments	• Basic computer courses • Communication skills • Courses to solve basic problems • Hospitality management courses for establishment managers

6.4. Textile

Textile is a traditional sector in the district. The sector has today made its transition to using power looms. Weaving takes place in the district offering an employment to many from the rural segment of the district. Going forward also, the climate is healthy for the district with over 30 MoUs/EoIs have been signed for this industry which has a proposed investment of about Rs. 1,400 crores in the GIM 2012.

The key challenge that the sector now faces is to engage the youth. The youth perceive the sector as one where the aged and under skilled work. The fact that the textile sector requires creativity and separate skills set of its own needs to be propagated. Private training centers can be established across the main centers across the district.

Private player

The skills across the sectors of spinning, weaving and processing can be built with a set of courses that target on fresh skilling and up-skilling of already skilled workers. In addition to the courses across the sectors, the ability to make designs that echo the current market trend also needs to be taught. This will also grab the attention of the youth. Different ways to add value to the woven garment like finishing, various works like appliqué, ackoba, etc. needs to be introduced.

Industry

The textile industry can intervene to make the sector an attractive proposition for the youth. Also, in terms of the mills, they can be modernized. Some of the interventions that can be undertaken by the industry in Belgaum are:

- Focus on value addition to make the garments reflect market trends
- Technology up-gradation in mills
- Awareness of international quality standards
- Interest rate should be low down in order to survive this industry

3.5. BELLARY

1. Introduction

Bellary has a total land area of approximately 8420 sq. km., which is 4.40 per cent of the total State area. It is bordered by Raichur District on the north, Koppal District on the west, Chitradurga District and Davanagere District on the south, and Anantapur District and Kurnool District of Andhra Pradesh on the east. Bellary has seven taluks namely – Bellary, Siruguppa, Hospet, Sandur, Kudligi, Hagribommarnahalli and Hadagali. Bellary has 554 villages (524 Inhabited and 30 un-inhabited).

Majority of the population (65.1 per cent) lives in rural areas. Literacy rate in rural areas is 50.3 per cent and in urban areas is 70.2 per cent. Agriculture is the main occupation, employing 66.5 per cent of the labour force (as of Census 2001). The remaining is in household industry at 2.8 per cent and other workers[9] at 30.7 per cent.

Paddy, maize and jowar are the key crops grown. Oil seeds such as groundnut and sunflower are also grown. Bellary is an industrial base for steel, cement, rice mills, readymade garments and textiles. Bellary is known as the 'steel city of south India'. Bellary is rich in mineral resources like iron ore, manganese ore, red oxide and ferrous oxide, etc. It is also known as 'Jeans capital' of

[9] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

India. Some of the famous brands such as Point Blank, Walker, Dragonfly and Podium are manufactured in Bellary district.

In addition to the industrial activities, Bellary has popular tourist destinations such as Hampi (world heritage center) and temples such as Twin temple, Hazara Ramaswamy temple and Patal Lingeswar temple.

Table 99: Comparison of Bellary district with Karnataka – key indicators

Indicator	Year	Bellary	Karnataka
Area, in sq.km.	2001	8420	191,791
Percentage share in State geographical area, %	2001	4.4	100
No. of sub-districts	2011	7	175
No. of inhabited villages	2001	524	27,481
No. of households	2001	373,034	10,401,918
Forest area as a % of total geographical area	2001	11.9%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

2.1. Demography

As per Census 2011, Bellary district has a population of 25.3 lakh persons i.e. 4.1 per cent of the State population. Majority of the population (30.8 per cent) is concentrated in Bellary sub-district, followed by Hospet sub-district at 18.5 per cent, Kudligi sub-district at 13.4 per cent and Siruguppa sub-district at 11.6 per cent. While 59.1 per cent of the population in the district is in working-age group (15 to 64 years), about 45.4 per cent is actually working i.e. work participation rate.

Table 100: Key demographic indicators

Indicator	Year	Bellary	Karnataka
Population, No.	2011	25,32,383	61,130,704
Decadal growth rate of population, %	2001-11	24.92	15.67
District's share in State's population, %	2011	4.14	100
Urban population as a percentage of total population, %	2001	34.9	34
SC population, %	2001	18%	16
ST population, %	2001	18%	7
Sex ratio, No. of females per 1000 males	2011	978	968
Population density, per sq. km.	2011	300	319

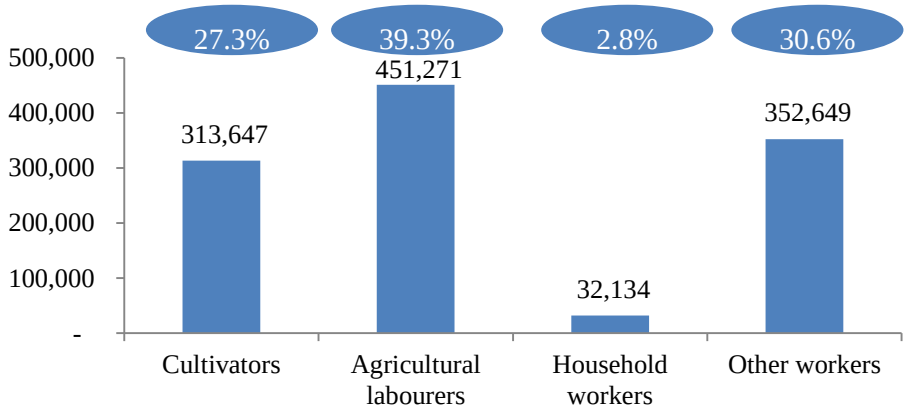
Indicator	Year	Bellary	Karnataka
Literacy rate, %	2011	57.40	75.6
Main workers, No.	2001	801,369	19,364,759
Marginal workers, No.	2001	119,452	4,170,032
Working age population* as a percentage of total population, %	2001	59.10	63
Work participation rate^	2001	45	45
HDI	2001	0.617	0.650
GDI	2001	0.606	0.637

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*
Source: Census 2001, Census 2011, Karnataka Human Development Report 2005, District at a glance 2010-11

The district's literacy rate is 57.4 per cent, which is significantly lower than the State average of 75.6 per cent and All-India average of 74 per cent. Male literacy at 69.2 per cent is significantly higher than female literacy rate at 45.3 per cent. As per 2001 report, Bellary has a Human Development Index (HDI) value of 0.617 and Gender Development Index (GDI) value of 0.606.

The district has a total workforce of about 11.50 lakh persons. Of this, 27.3 per cent are cultivators, 39.3 per cent are agricultural labourers, 2.8 per cent are workers in household industry and 30.6 per cent are other workers.

Figure 54: Bellary district's worker profile, as of 2011

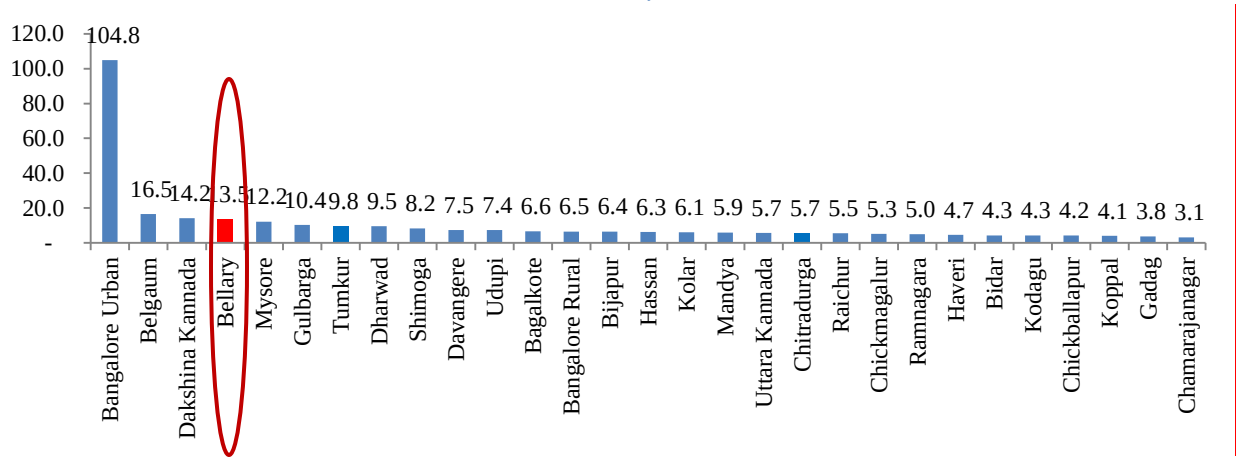


HHI: Household Industry
Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Bellary district had the fourth largest Gross District Domestic Product (GDDP at Current Prices) in Karnataka at Rs 13,539 Crore (4.40 per cent of the Gross State Domestic Product). Per capita GDDP was at Rs.60,941 which was higher than the State average of Rs 53,101.

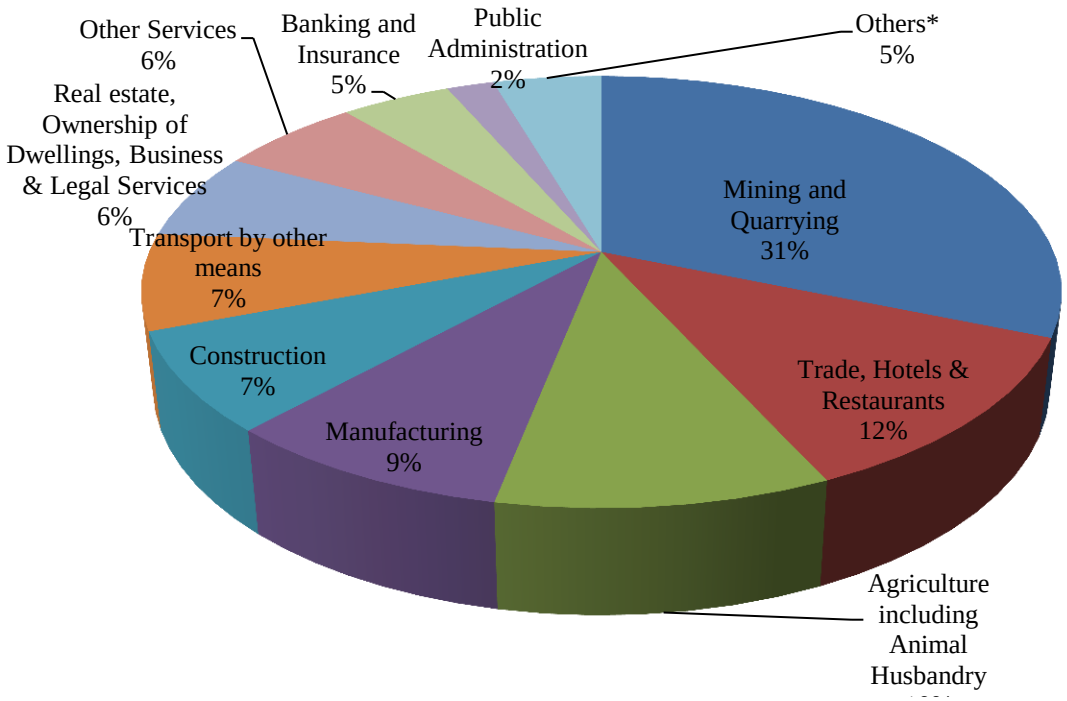
Figure 55: Gross District Domestic Product, in Rs. thousand crore, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly primary sector based, with primary sector's share at 42.9 per cent in 2008-09 driven by mining sector. This is followed by services at 39.6 per cent and secondary sector at 17.5 per cent.

Figure 56: Sector wise distribution of Bellary's GDDP, as of 2008-09, 100% =1353.99 Rs crore



**Others includes Forestry and Logging (1.4%), Electricity, Gas and Water Supply (1.4%), Communication (0.9%), Railways (0.5%), Fishing (0.3%) and Storage (0.02%)*
Source: Bellary District at a Glance 2009-10

Agriculture:

The total area under cultivation is around 5.8 lakh hectare. Area under food grain production is 72 per cent of total area under cultivation, followed by commercial and horticultural crops. The major crops are paddy, jowar and maize which make up for approximately 93 per cent of the total food grain production.

Industry:

As of 31st March 2011, Bellary district had 68 large and medium scale industrial units, employing 28,234 persons. Bellary also has 953 Small Scale Industry units (SSIs), employing 5,090 persons. Majority of these were textile industries (47 per cent) employing around 1,667 workers, followed by job works and repairs (35 per cent) employing around 1,604 workers.

GIM 2010 has attracted around 35 projects for Bellary district, which are expected to create total employment of 78,999 with a total investment of 139,576 crore. Around 60% of the expected

employment will be generated through setting up integrated steel plants. Some of the proposed major steel projects are:

- Arcelor Mittal India Ltd (6 Million Tonnes Per Annum (MTPA) Integrated Steel Plant, Pig Iron, Pallets and 750 MW Captive Power generation) with an investment of Rs.30,000 crore. This is expected to generate employment for 10,000 people.
- Bhushan Steel Ltd (6 MTPA Integrated Steel Plant with 600 MW Co gen) with an investment of Rs.27,928 crore. This is expected to generate employment for 20,000 people.

During the Global Investors Meet (GIM) held in 2012 in Bangalore, 30 projects have been proposed for Bellary district and most of them are in Iron and Steel sector. Government of Karnataka also plans for Apparel Park in 50 acres, at an estimated cost of Rs.11 crore and a Green Field Textile Park in Bellary for the development of Textile and Clothing industry.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 39.6 per cent of GDDP in Bellary district. Of all the services, the key services in the district are of trades and hotels, transportation, real estate, business and legal services and, banking and insurance. GIM 2012 has also attracted some projects in Hospitality sector for Bellary with a proposed investment of Rs.130 crore.

2.3. State of education

As of 30th September 2011, Bellary district had 702 primary schools and 444 high schools, with total enrolment of 4.2 lakh students. In addition, there are 103 PU colleges with enrolment of 26,000 students and 20 general colleges with enrolment of 9,700 students.

Table 101: School type wise enrollment numbers

	Lower Primary		Higher Primary		High School	
	No.	Students	No.	Students	No.	Students
Government	396	1,13,250	571	57,150	142	38,191
Aided	2	31,915	14	10,503	26	8,097
Unaided	103	3,886	142	4,235	83	6,670
Others	3	622	20	2,587	16	1,986
Total	**504**	**1,49,673**	**747**	**74,475**	**267**	**54,944**

Source: District Information System for Education

Table 102: Higher education infrastructure in Bellary district, as of March 2010

Colleges	No.	Students
PU Colleges	103	26,031
General	20	9,788
Medical	1	100
Polytechnic	9	2,681
Engineering	4	1,921
Dental	1	48

Source: Bellary District At a Glance 2009-10

For vocational training, Bellary district had a total of 85 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, six were Government ITIs, eight were private aided ITIs and remaining 46 were private unaided ITIs. All the 85 ITIs together have a seating capacity of 9,051.

Table 103: Key ITI indicators in Bellary district, as of March 2012

Indicator	Value
Total Number of ITI	85
Number of Government it is	6
Number of Private aided it is	8
Number of Private unaided it is	71
Total Seating capacity	9,051
Student pass rate	70% - 75%
Student drop-out rate	5% - 10%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Bellary district, we have found that on an average, of all the students that pass out from an ITI in each year, 65 to 75 per cent find jobs in the market. For details on courses offered by ITIs in Bellary, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions. While the Government Department offers courses in trades like agriculture, teacher training, personality development, horticulture, etc., the private training institutes are mainly offering computer courses, training programs for engineers in power sector, CAD training, Six sigma training, electronics training, software testing and automation testing, etc. For details of training institutes and courses offered, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Bellary district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- Students need clarity on career opportunities available to them
- Average salary expected by the students range between Rs.7,000 to Rs.8,000 per month
- Students, who are not able to get admissions in good colleges, prefer ITIs. The latter are also preferred because ITI certification helps in obtaining Government and even private jobs. The low fee is an added advantage.
- Students prefer to take up additional courses along with their current education, provided if it is offered at a lower price.
- Students are willing to move out of Bellary for higher salary.
- Training institutes in Bellary lack sophisticated machinery and infrastructure for training. Practical exposure is limited
- Quality of courses and teachers is average.
- Preference for white collar jobs as compared to blue collar and manual jobs.

3. Developmental concerns

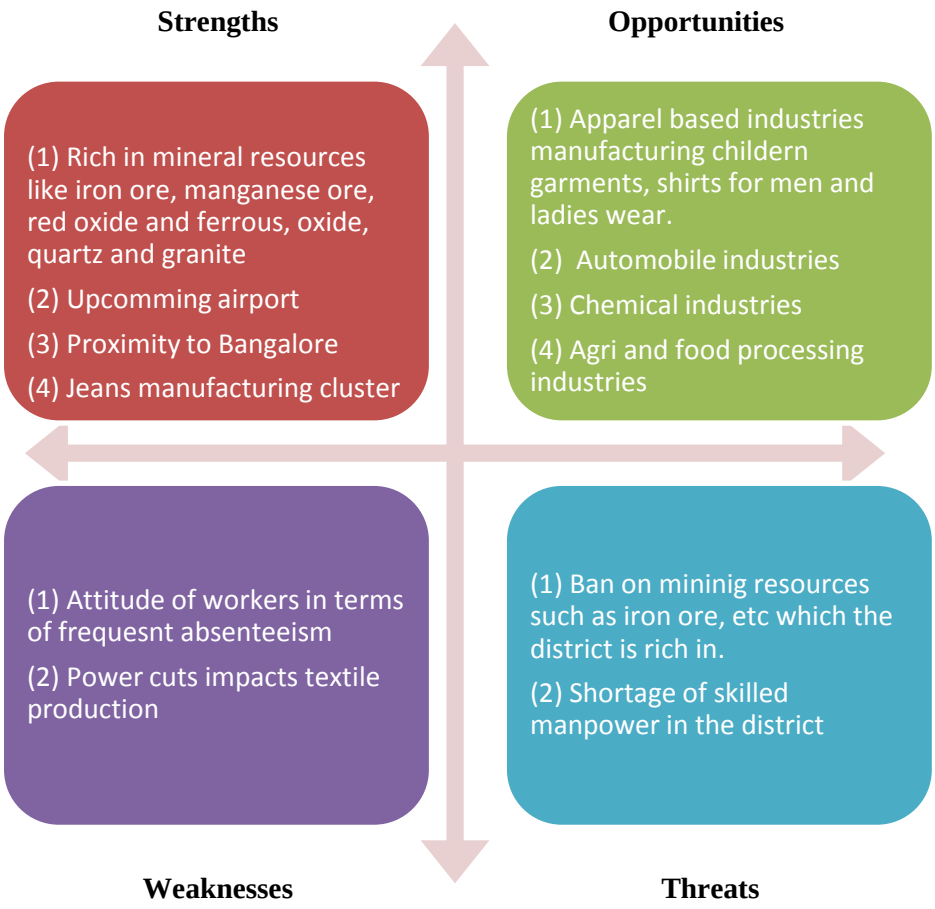
Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Ban on mining:** The district is rich in mineral resources mainly iron ore, and thus attracts mining and steel based industries. However, in 2011, the Supreme Court imposed a ban on iron ore mining in Bellary district, due to large scale environmental degradation in these areas. Further, in March 2012, the Supreme Court appointed Central Empowered Committee (CEC) recommended a 10 year prohibition in mining operations in Bellary due to illegal extraction of natural resources. Mining is not expected be allowed till the time all affected areas are properly rehabilitated. Banning of mining has made the workers of mining industry to relocate to other jobs. Thus on removal of mining, shortage of skilled labours will be encountered by the industry.
- **Shortage of skilled manpower within the district:** The district has skill shortage in textile. Some of the challenges faced by Jeans cluster in Bellary include inconsistency in quality as the garment is passing through different manufacturing houses, low productivity level due to involvement of unskilled persons in the manufacturing work.

SWOT analysis

Based on the diagnostics of the Bellary district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 57: SWOT Analysis of Bellary district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 2.63 lakh persons is likely to be generated in Bellary district.

Agriculture and allied will continue to remain the biggest employer. This will be followed by tourism and hospitality and building and construction.

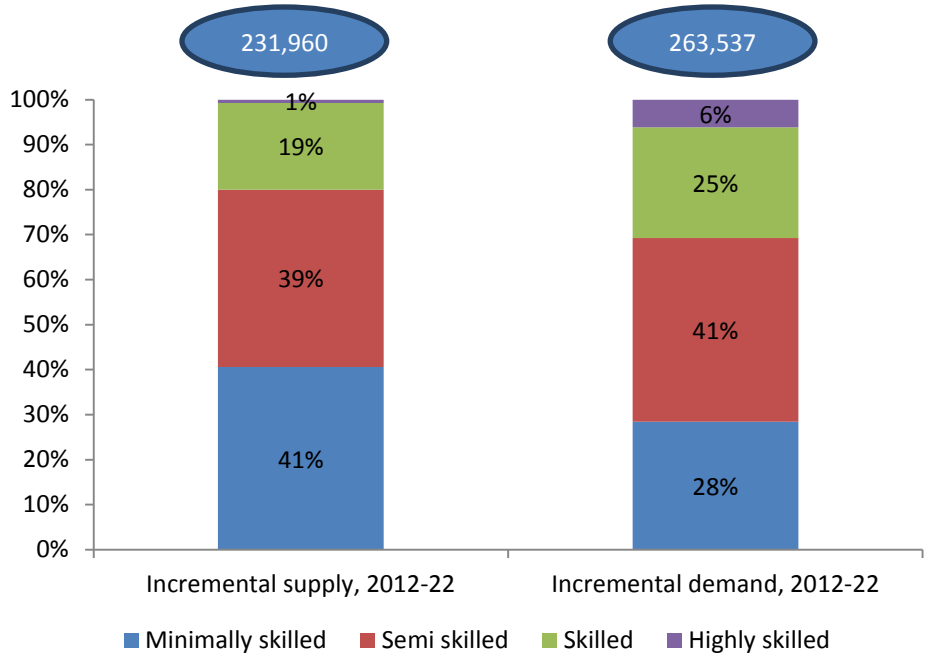
Table 104: Incremental demand in Bellary – 2012 to 2022

SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	72,961	60,767	9,083	1,653	1,459
BFSI	8,615	-	5,169	2,584	861
Building, Construction industry and Real Estate	47,213	14,164	23,606	7,082	2,361
Chemicals & Pharmaceuticals	14	3	4	4	3
Construction Materials and Building Hardware	2,932	293	1,906	586	147
Education and Skill Development	16,224	-	-	14,602	1,622
Electronics and IT hardware	-	-	-	-	-
Food Processing	-	-	-	-	-
Furniture and Furnishings	461	184	184	69	23
Healthcare Services	27,591	-	2,759	19,314	5,518
IT & ITES	-	-	-	-	-
Media and Entertainment	-	-	-	-	-
Organised Retail	-	-	-	-	-
Textile and Clothing	1,232	246	739	185	62
Transportation, Logistics, Warehousing and Packaging	37,921	7,584	21,994	7,584	758
Tourism, Travel, Hospitality & Trade	41,414	8,283	28,162	4,141	828
Unorganised	299	60	174	60	6
Mining	6,649	1,330	3,990	665	665
Total	**263,537**	**92,915**	**97,776**	**58,532**	**14,314**

Source: IMaCS Analysis. Note: Numbers for sectors will not add up to the total due to very small numbers accounted for by sectors such as auto and auto components.

The incremental supply of work-force between 2012 and 2022 is estimated at 2.32 persons. Demand supply gap exist, to meet the demand, additional workforce needs to be trained. The demand for such skilled and highly skilled workforce is majorly driven by sectors such as healthcare services, education and skill development, building, construction industry and real estate, and transportation, logistics, warehousing and packaging.

Figure 58: Skill wise incremental demand and supply in Bellary district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

As mentioned above, of the 19 high growth sectors identified by NSDC, only one, namely 'textiles and clothing, construction material and building hardware, tourism and automobile' exists in Bellary district (in addition to agriculture). Sector comparison of Bellary with Karnataka is given in Table 89 below.

Table 105: Sectors present in Bellary district – comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Bellary	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		

High Growth Sectors identified by NSDC	Bellary	Karnataka
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		
Additional sectors	**Bellary**	**Karnataka**
Mining		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 106: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Textile and clothing		√	√
Tourism, Travel, Hospitality & Trade	√		
Construction materials and building hardware	√		√
Mining	√		√

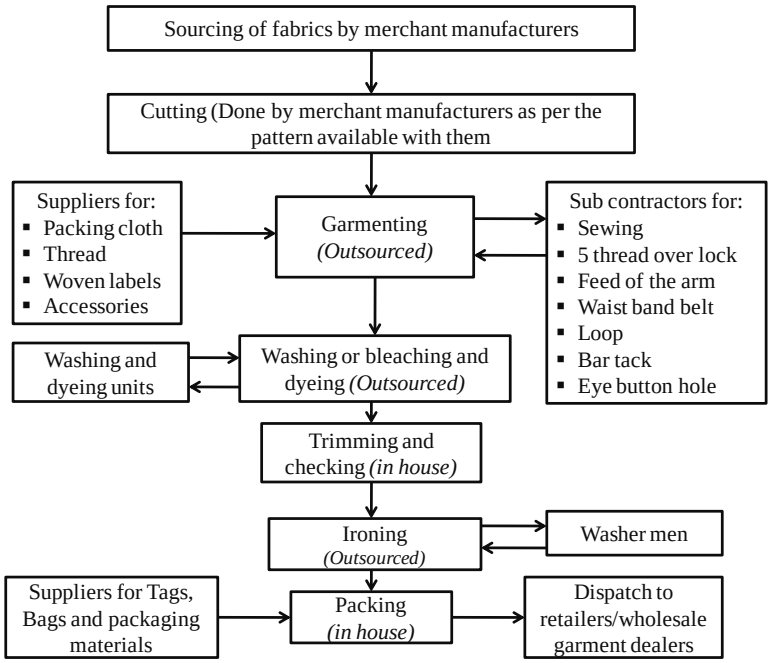
Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Textiles and clothing industry

As of March 2010, Bellary district had 449 textiles based SSIs, employing 1667 workers. Bellary is known as 'Jeans capital' of India. The cluster mainly manufactures men's casuals like jeans and formals, only a few manufactures make ladies and girls garments.

Figure 59: Value chain of textile industry in Bellary



Role of merchant manufactures:

Around 160 merchant manufacturers are estimated to be there in Bellary. Merchant manufacturers procure orders for trousers and get it manufactured through sub-contractors. They procure fabrics from fabric suppliers who in turn procure from textile mills in Mumbai, Hyderabad, and Paddi. Merchant manufactures cut the procured fabrics based on the requirement and give it to sub-contractors; very few merchant manufacturers have their own in house manufacturing facility. Stitched trousers are received and are sent for washing/bleaching and dyeing (outsourced), again received and outsourced for ironing, after trimming the threads. Finally, ironed trousers are checked and packed by the merchant manufacturers before sending it to the customers.

Major problem faced by merchant manufacturers is lack of uniformity in quality of finished products and longer production cycle, absence of system in place to track production, labour and material. Variation in quality is because of multiple processes and handling of products by different sub-contractors. Thus, proper system to monitor and control the quality of finished product is the need of the day. Diversification into different garment products for women and children based on the latest fashion will help the merchant manufacturers to increase their turnover and profitability.

Figure 60: Workers in a merchant manufacturer factory in Bellary

Table 107: Skill gaps in merchant manufacturer factory in Bellary district

Role, educational qualification	Expected competency	Skill gaps
Manager / supervisor / floor in-charge (Graduate)	▪ Managing all the facilities and the functioning of the work-force. ▪ Supervising of the work conducted by operators / tailors and conducting quality checks. ▪ Knowledge of pattern making. ▪ Ability to undertake inspection,	▪ Non availability of supervisory workers is yet another reason for merchant manufacturers to not to have inbound factory operations ▪ Lack of people management skills

Role, educational qualification	Expected competency	Skill gaps
	production planning and control. ▪ In-depth knowledge of production processes and inspection methods. ▪ Leadership skills ▪ People management skill ▪ Soft skills and interpersonal skills	▪ Inability to undertake inspection, production planning and control.
Quality control executive (Graduate and with some experience in garment industry)	▪ Ability to inspect if the garments have been stitched as per given specifications and instructions ▪ Ability to check for quality adherence ▪ Ability to understand and prevent defects like size variations, loose threads, stains etc.	▪ Lack of ability to identify defects, which usually come from experience only.
Helpers (illiterate to 10th pass)	▪ Ability to cut the cloth based on specifications. ▪ Ability to button the stitched garments. ▪ Ability to put labels on the stitched garments. ▪ Ability to iron the ready garments properly. ▪ Ability to iron the garments ▪ Ability to pack the garments in bundles	▪ Basic skills required for this profile, for which no / minimal training required. Mostly provided easily on the job.

Role of sub-contractors

Most of the sub-contractors function in their houses or in a slightly bigger area and do not have high value machines (like eye buttonholing, bar tracking, feed of arm, etc.) or able to handle cutting and trimming by themselves, due to the limitations imposed by their ability to invest such a huge amount.

Table 108: Skill gaps in sub-contractors in Bellary district

Role, educational qualification	Expected competency	Skill gaps
Tailors (illiterate to 10th pass, trained in tailoring)	▪ Proficiency in tailoring / stitching is required for stitching garments with different specifications. ▪ Good machine control – knowledge of threading of sewing machine, stitching on different shapes, seaming garment components together in various fabrics to specified quality standard ▪ Machine maintenance procedures ▪ Pattern making, grading and draping ▪ Ability to understand instructions properly and stitch the garments based on them. ▪ Ability to work in teams / inter-personal skills. ▪ Ability to deliver on time	▪ Mostly, learn tailoring as a part of family business ▪ Low productivity levels due to involvement of untrained labourers in tailoring. ▪ In case of in house production, even those who are trained before the job have to be re-trained, especially on running of machines for high productivity. ▪ Inability to keep up to the delivery schedule.

Role of washers and dyers

Washing and dyeing is also mostly outsourced by the manufacturers. There are around 45 washing and dyeing units in the cluster. Material wise requirement before finishing is given below:

- Washing and dyeing: Denim clothes require this process to bring the colour demanded by the market.
- Only washing: Cotton trousers like khakis, chinos
- No washing, no dyeing: Terry cotton, polyester/cotton/viscose blended trousers

One of the major concerns faced by industry is usage of old technology in washing and dyeing. Mostly uneducated are employed in this business and are trained on the job. There is a need for change in technology and training required for usage of new technology and awareness on quality maintenance and its impact on productivity levels and increase in income. Awareness and usage of technologies to treat the effluents is also required.

Role of washer men in ironing

They are located closer to the manufacturers to avoid transport. Many of them are using coke iron boxes, rather than electrical steam iron boxes. Change in technology is required for the betterment of the industry.

Other infrastructure related issues include frequent power cuts, building to set up factories, etc. However, some of them will get addressed once the textile park is available for operation.

5.2. Mining

Bellary district is rich in minerals like iron ore, manganese ore, red oxide and ferrous oxide, etc. In the year 2008-09, mining and quarrying alone accounts for 31 per cent of the districts GDDP at Rs.423,247 lakh. In the year 2010, Bellary produced 554212 tonnes of iron ore. Some of the major players are MSPL Limited, NMDC, etc

Open cast mining is being adopted in Bellary. Most of the mining activity happens in Bellary, Hospet and Sandur sub-districts. The main activity of mining commences with the removal of Over Burden (OB). The mining process involves drilling the top bench followed by laying of explosives in the drilled area for blasting, and removal of loosened soil using excavators. Numerous layers of benches are created till the iron ore is reached. The OB removed in the mines is transported to a dumping area, and is later used to refill the mined area. Iron ore is removed and moved to storage by using equipments such as dumper/hydra.

Extracted mines are cleaned during the beneficiation process and are classified into fines (iron ore with less than half inch) and calibrated iron ore lump (varies between half inch to two inch) which is used in blast furnace. These calibrated iron ores might be crushed into smaller size, based on the requirement.

Manual worker requirement is limited in the industry due to mechanization of process. Next level of workers i.e. Operators are required for operating machines such as excavators/dumpers (which is different from conventional drivers) /drillers / blasters. Operators are expected to have qualification of minimum matriculation/Diploma in mechanical/electrical engineering. Operators for excavators/dumpers need to have license, while blasters should have statutory qualifications defined by Director General of Mines.

Any level above Operators such as Supervisors / Foremen (Diploma in mining engineering with 1 year field experience) / Assistant Manager (with 2 year of mining experience)/Managers are required to have statutory qualification.

It is the statutory requirement for the mining owners to provide vocational training on basic safety for operations in mines, through setting up Vocational Training Centres for all the non-statutory qualifications such as excavator operators, dumper operators, drillers, etc. Certifications for these courses are provided by the Vocational Training Center itself.

Figure 61: Mining Value chain

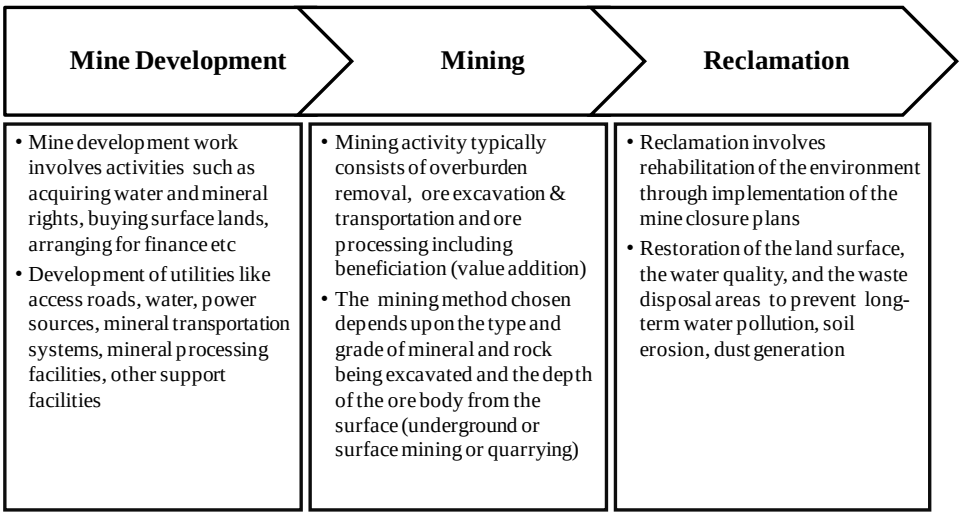


Table 109: Skill gaps in mining in Bellary district

Role, educational qualification	Expected competency	Skill gaps
Managers and Mine head (1st Class mines manager certificate from Directorate of Mine and Safety)	▪ Knowledge of regulatory and legal requirements, including corporate mining lease process ▪ Maintaining quality ▪ Quality control ▪ Latest mining technologies and advanced machines ▪ Understanding of environmental implications of the mining process and strict adherence to laws ▪ Ability to supervise operations at a mine to keep them efficient and safe ▪ Ability to monitor workers and work conditions ▪ Ability to meet production goals	No skill gap. They are required to have statutory qualification
Engineers (electrical, mechanical, auto)	▪ Knowledge of scientific methods of mining ▪ Ability to plan and direct the various engineering aspects of extracting minerals ▪ Conducting investigation of mineral deposits ▪ Preparing layout of mine development and the way minerals are to be mined ▪ Overseeing the construction of the mine and the installation of plant and equipment ▪ Ability to adhere to the mining regulations	▪ No skill gap. They are required to have statutory qualification
Supervisors (Diploma in electrical, auto, mechanical)	▪ Ability to supervise activities conducted in the department for which responsibility is entrusted. This could include crushing plant, mining, stores etc. ▪ Ability to train staff to operate the various large	▪ No skill gap. They are required to have statutory qualification

Role, educational qualification	Expected competency	Skill gaps
	and small equipment used within mining operations ▪ Overseeing the safety of all workers ▪ Complete understanding of all safety regulations and ability to handle safety issues ▪ Ability to calculate heights, depths, relative positions, property lines, and other characteristics of terrain ▪ Knowledge of computer operations for capturing the survey data ▪ Ability to interpret survey data to determine positions, shapes, and elevations of geomorphic and topographic features	
Fitters (experience based), Blasters, Excavator operators, Dumper operators (12th / Diploma/ Licence holder)	▪ Ability to operate mining machines like dumpers, loaders and excavators ▪ Ability to drill using drilling machine ▪ Blasting skills - Ability to identify the right kind of explosives to suit the mining requirements, Ability to minimize the usage of explosives ▪ Crushing skills	▪ Mining owners conduct training programs on basic safety in mining operations to meet the statutory obligation. ▪ Lack of trained machine operators ▪ Knowledge of operations of modern machinery ▪ Lack of awareness of preventive maintenance ▪ Lack of safety awareness
Safety officers	▪ Investigation of accidents in the mine including minor accidents ▪ Maintain detailed statistics about mine	▪ Inadequate knowledge on disaster management

Role, educational qualification	Expected competency	Skill gaps
	accidents ▪ Knowledge of health and safety issues and promote the same ▪ Ability to check if Regulations and Rules related to mines are being complied ▪ Knowledge on disaster management ▪ Good communication skills.	
Helpers / machinery attendants (High school pass)	▪ Ability to maintain machines ▪ Ability to help operators with their day to day functions ▪ Ability to problem-solve	▪ On the job training

Source: IMaCS Analysis

5.3. Tourism and Hospitality

Bellary has popular tourist destinations such as Hampi (world heritage center) and temples such as Twin temple, Hazara Ramaswamy temple and Patal Lingeswar temple. Trade, hotels and restaurants is the 3rd largest contributor to Bellary's GDDP, following mining and quarrying, and agriculture.

Figure 62: Value chain – Tourism Industry

Figure 63: Hampi in Bellary

Table 110: Skill gaps in tourism industry in Bellary district

Role, educational qualification	Expected competency	Skill gaps
Tourist guides (minimum 12th pass)	▪ Knowledge on tourist spots in and around Bellary ▪ Good English communication skill to interact with national and international tourist ▪ Decision making skills ▪ Ability to handle crises situation ▪ Good behaviour	▪ Communication skill ▪ Time management
Drivers (minimum secondary education)	▪ Driving skill ▪ Familiarity with routes ▪ Handling problems in vehicle such as tyre changing, minor repairs, etc ▪ Communication ability ▪ First aid and safety skills	▪ English communication skill to interact with tourist ▪ First aid and safety skills

Table 111: Skill gaps in Hospitality industry in Bellary district

Role, educational qualification	Expected competency	Skill gaps
Front office assistance (Minimum Graduation)	▪ Customer handling ▪ Call handling ▪ Check in and checkout procedures and billing ▪ Coordinating with other departments travel desk, food and beverage, etc ▪ Knowledge on various products offered by hotel to promote sales ▪ Communication skill	▪ Customer handling skills ▪ Promoting sales ▪ Communication skill
Travel desk (12th pass/Graduation)	▪ Knowledge on local sites to see ▪ Booking tickets for customers ▪ Communication skill	▪ Communication skill
Food and beverage (High school/Diploma/ Graduation)	▪ Interacting with guest ▪ Knowledge on how to make variety of cuisines ▪ Time management ▪ Handling guest in case of delay ▪ Management of food production ▪ Avoid wastages	▪ Handling customer complaints ▪ Interacting with guest ▪ Knowledge on how to make variety of cuisines
Restaurant (High school/Diploma/ Graduation)	▪ Taking orders and serving ▪ Interacting with customers, understanding their requirement ▪ Being presentable	▪ Servicing skills ▪ Guest handling skills in case of complaints ▪ Communication skill

Role, educational qualification	Expected competency	Skill gaps
	▪ Billing ▪ Coordination with other departments ▪ Making cocktails, mock tails, etc based on the customer requirement	
Housekeeping (High school/Graduation)	▪ Handling housekeeping equipment ▪ Room cleaning ▪ Keeping common area clean ▪ Collecting laundry and delivering it back ▪ Interacting with customer and handling complaints	▪ New employees need training in all the areas identified under expected competency

5.4. Construction materials and building hardware

Bellary is known as the 'steel city of south India'. Steels plants exist in Bellary due to proximity of raw materials. Currently there are around six large and medium scale iron and steel plants in Bellary, employing around 14,755 candidates. Existing major player in the industry is JSW Steels Limited.

In GIM 2010, 13 steel plants to Bellary, which is expected to create employment for 47,508 people with a total investment of 99,500 crore. Some of the mega projects are (i) Arcelor Mittal India Ltd (6 Million Tonnes Per Annum (MTPA) Integrated Steel Plant, Pig Iron, Pallets and 750 MW Captive Power generation) with an investment of Rs.30,000 crore. This is expected to generate employment for 10,000 people and, (ii) Bhushan Steel Ltd (6 MTPA Integrated Steel Plant with 600 MW Co gen) with an investment of Rs.27,928 crore. This is expected to generate employment for 20,000 people. GIM 2012 has attracted 12 players which will create an employment of 12799. These new steel plants in Bellary will generate employment opportunities are various levels like Engineers, ITIs, Diploma and Graduates.

Figure 64: Value chain – Steel Industry

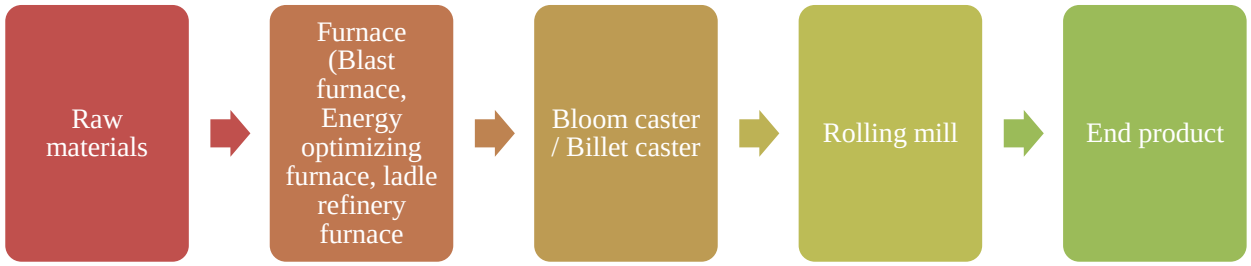


Table 112: Skill gaps in steel industry in Bellary district

Role, educational qualification	Expected competency	Skill gaps
Production Engineer / Production Manager/GM (Experienced Graduate Engineer) (Skill associated varies with levels of position)	▪ Knowledge of steel processing ▪ In depth process knowledge and process design capability. ▪ Understanding of operation of furnace, rolling mills, heat treatment and material handling ▪ Ability to schedule production sequences ▪ Quality control and inspection of raw material and finished product ▪ Ability to coordinate between different departments including purchase, quality, finance, etc ▪ Knowledge of quality systems including ISO 9001: 2008	▪ Poor Interdepartmental coordination ▪ Inadequate knowledge in costing and finance ▪ Orientation to safety standards

Role, educational qualification	Expected competency	Skill gaps
	OSHSAS ▪ Knowledge of industrial safety and standards ▪ Material management ▪ Resource management ▪ Inventory management ▪ Basic knowledge of costing and finance	
Senior technician/technicians (Diploma//ITI with experience – Mechanical/Electrical/ Metallurgy/Production/Industrial Engineering)	▪ **Furnace and allied** ▪ Knowledge and skill in operating the furnace ▪ Knowledge of instrumentation associated ▪ Basic furnace maintenance management and trouble shooting ▪ Knowledge and skill in operating the material handling ▪ Basic knowledge of material properties ▪ Skill in slag removal and disposal ▪ Physical ability to work in hot environment ▪ Orientation towards industrial safety ▪ **Rolling mill and allied** ▪ Knowledge and skill in	▪ Inadequate skill in slag removal and disposal ▪ Inadequate knowledge in trouble shooting and maintenance of the furnace ▪ Poor orientation towards industrial and work place safety ▪ Inadequate skill in quick replacement of dies

Role, educational qualification	Expected competency	Skill gaps
	continuous caster process ▪ Knowledge of material cooling process ▪ Skill in operating the caster and rolling mills ▪ Skill in setting the rolling mill and replacing dies as required ▪ Material handling ▪ Knowledge of dimensioning and tolerances and skill in using calibration equipments ▪ Orientation towards industrial safety ▪ **Heat treatment** ▪ Knowledge of heat treatment process ▪ Ability to understand the heat treatment requirements and the process documents ▪ Skill in operating heat treating furnace and cooling mechanism ▪ Material handling capability ▪ Skill in hardness, ductility and other testing requirements	▪ Inadequate skill in measurement and calibration ▪ Poor orientation towards industrial and work place safety ▪ Inadequate technical knowledge behind the process / concept of heat treatment ▪ Inadequate skill in testing the processed steel ▪ Poor orientation towards industrial and work place safety

Role, educational qualification	Expected competency	Skill gaps
Engineer – Quality Management (Graduate /Experienced Diploma)	▪ Deep understanding on the process followed in the industry ▪ Knowledge of quality systems including ISO 9001: 2008 OSHSAS, material standards including BIS, ASTM, EN ▪ Knowledge and skill in operating the quality control instruments for testing raw material, work in progress material and finished goods. ▪ Knowledge and skill in preparing statistical quality control reports and aid in improving the production and quality of the material produced ▪ Implementation knowledge in quality systems and safety management systems ▪ Ability to coordinate with production, dispatch and material departments	▪ Limited knowledge of quality systems management. ▪ Limited knowledge in statistical quality control reporting ▪ Inadequate skill in using material testing and quality control instruments ▪ Inadequate technical knowledge in international standards for steel and its specification
Engineer – Purchase (Graduate Engineer)	▪ Knowledge of and good working relationship with raw material suppliers and vendors ▪ Knowledge of material standards including BIS, ASTM,	▪ Inadequate negotiation skills ▪ Inadequate knowledge of interstate, inter country taxation and related documentation

Role, educational qualification	Expected competency	Skill gaps
	EN ▪ Technical valuation skills ▪ Negotiation skills ▪ Documentation knowledge ▪ Knowledge of interstate, inter country taxation and related documentation ▪ Inventory management and reporting skills ▪ Logistics and warehouse management ▪ Coordination between finance, production and quality control	▪ Inadequate inventory management
Helper	▪ Material handling skills ▪ Industrial safety knowledge ▪ Ability to understand and follow instructions ▪ Discipline and time management	▪ Inadequate industrial safety knowledge

Source: IMaCS Analysis

5.5. Others

In addition to the sectors mentioned above, Bellary district is also home to many manufacturing and engineering based industries. While most of them don't have any employment generation or expansion plans in the next few years, they have reported shortage of skilled manpower in some of the key functions like plumbers, electricians, masons, welders, metallurgy (diploma / engineer), chemist, vehicle mechanics, etc.

6. Recommendations

As described in the above sections, industries contributing to employment generation in Bellary district for the next five years are:

- Textile and clothing
- Mining
- Tourism and Hospitality
- Construction materials and building hardware

In addition to the above sectors, agriculture also contributes significant number to employment generation in the district. Any kind of up skilling programs related to technology, process and market linkages will assist the farmers in increasing their livelihood income.

Key recommendations given in the below table summarizes the recommendations for private players and government separately, while the details of the same have been elaborated below the table.

Table 113: Key recommendations for Bellary – Summary

Sector	Government	Private training providers	Industry
Textile and clothing	▪ Completion of apparel and textile park ▪ Reduction in power cut	▪ Training centers to provide training in the following areas: ○ Making of different garment products for women and children based on the latest fashion ○ Inventory maintenance ○ People management ○ Ability to undertake inspection, production planning and control. ○ Training for supervisory	▪ To set up more textile units ▪ Diversification into different garment products for women and children based on the latest fashion ▪ To upgrade the existing dyeing techniques

Sector	Government	Private training providers	Industry
		role ○ Sewing machine operators ○ Advanced technology in washing and dyeing training and awareness ○ Effluent treatment	
Tourism and hospitality	▪ Promotion of tourism by creating more visibility through national and international advertisements, by Department of Tourism	▪ Training centers to provide training in the following areas: ○ Tourist guides ○ Drivers ○ Front office staff ○ Front office assistants ○ Cooks ○ Waiters	▪ To set up hotels and resorts in the district ▪ Tying up with training providers for job assurance
Mining	▪ DGET to formulate training courses for mining machine operators	Training can be provided in the following areas: ▪ Blasting machine operations ▪ Handling and storage of explosives ▪ Safety skills ▪ Drilling operations and machine handling ▪ Excavator, dumper, dozer operation	▪ n/a

Sector	Government	Private training providers	Industry
Construction materials and building hardware	▪ n/a	Training can be provided in the areas such as: ▪ Safety skills ▪ Slag removal and disposal ▪ Trouble shooting ▪ Maintenance of furnace ▪ Measurement and calibration in rolling mill operation ▪ Heat treatment process ▪ Testing process ▪ Costing and finance	▪ To set more steel plants and beneficiation units

6.1. Textile and clothing

As of March 2010, Bellary district had 449 textiles based SSIs, employing 1667 workers. Bellary is known as 'Jeans capital' of India. Bellary mainly manufactures men's casuals like jeans and formals, only a few manufactures make ladies and girls garments. Some of the interventions required for the development of textile and clothing sector in Bellary are:

- Training in the relevant areas required for textile industries
- Completion of apparel and textile park

Private players

- Private training centres to be established to provide training in various areas as listed below:
  - Making of different garment products for women and children based on the latest fashion
  - Inventory maintenance
  - People management

- Ability to undertake inspection, production planning and control.
- Training for supervisory role
- Sewing machine operators
- Advanced technology in washing and dyeing training and awareness
- Effluent treatment

Government

- Reduction in power cut
- Encouragement and facilitation of movement in to new technologies for dyeing and ironing operations, effluent treatment for dyeing plants

Industry

- To set up more textile units
- Diversification into different garment products for women and children based on the latest fashion
- To upgrade the existing dyeing techniques

6.2. Tourism and hospitality

Bellary has popular tourist destinations such as Hampi (world heritage center) and temples such as Twin temple, Hazara Ramaswamy temple and Patal Lingeswar temple. Trade, hotels and restaurants is the 3rd largest contributor to Bellary's GDDP, following mining and quarrying, and agriculture. Some of the interventions required for the development of tourism and hospitality sector in Bellary are:

- Promotion of tourist spots
- Setting up training centres to offer training in the relevant areas

Private players

- Private players / NSDC to establish training centres to provide training targeting the below listed functional roles:
  - Tourist guides

- Drivers
- Front office staff
- Front office assistants
- Cooks
- Waiters

Government

- Promotion of tourism by creating more visibility through national and international advertisements, by Department of Tourism

Industry

- To set up hotels and resorts in the district
- Tying up with training providers for job assurance

6.3. Mining

Bellary district is rich in minerals like iron ore, manganese ore, red oxide and ferrous oxide, etc. In the year 2008-09, mining and quarrying alone accounts for 31 per cent of the districts GDDP at Rs.423,247 lakh. In the year 2010, Bellary produced 554212 tonnes of iron ore. Some of the major players are MSPL Limited, NMDC, etc

Private players

- Training institutes to provide training in the following areas:
  - Blasting machine operations
  - Handling and storage of explosives
  - Safety skills
  - Drilling operations and machine handling
  - Excavator, dumper, dozer operation

Government

- DGET to formulate training courses for mining machine operators

6.4. Construction materials and building hardware

Bellary is known as the 'steel city of south India'. Steels plants exist in Bellary due to proximity of raw materials. Currently there are around six large and medium scale iron and steel plants in Bellary, employing around 14,755 candidates. Existing major player in the industry is JSW Steels Limited.

In GIM 2010, 13 steel plants to Bellary, which is expected to create employment for 47,508 people with a total investment of 99,500 crore. GIM 2012 has also attracted 12 players into the industry which is expected to create employment of 12,799. These new steel plants in Bellary will generate employment opportunities are various levels like Engineers, ITIs, Diploma and Graduates.

Private players

- Training institutes to provide training in the following areas:
  - Safety skills
  - Slag removal and disposal
  - Trouble shooting
  - Maintenance of furnace
  - Measurement and calibration in rolling mill operation
  - Heat treatment process
  - Testing process
  - Costing and finance

Industry

- To set more steel plants and beneficiation units

3.6. BIDAR

1. Introduction

Bidar district is located in the north eastern corner of the state bordering with Andhra Pradesh on the east and Maharashtra in the north and west. It has a total land area of 5,448 sq. km., which is 2.8 per cent of the total State area. It is bordered on north by the Nanded district of Maharashtra, on the east by the districts Nizamabad and Medak of Andhra Pradesh, on the west by the districts Latur and Osmanabad of Maharashtra and on the south by Gulbarga district of Karnataka.

It is sub-divided into 5 sub-districts and has 599 villages. Majority of the population at 77 per cent lives in rural areas. Agriculture is the main occupation, employing 62 per cent of the labour force (as of Census 2001). The remaining is in household industry (three per cent) and other workers[10] at 35 per cent.

Jowar is the major crop grown. Pulses such as gram, tur are grown in plenty and has led to setting up of several dhal based industries in and around Bidar. Other major crops grown in the district includes oil seeds, sugarcane and sunflower. Manjra and Karanja are the important rivers in the district which aids irrigation for agriculture. Key minerals found in the district are Bauxite, Kaolin and Red ochre.

[10] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

The district lies on the border of Andhra Pradesh and the city of Bidar is only 120 kms away from Hyderabad. Many people from Bidar migrate to Hyderabad to find jobs and for a better standard of living. There is not much industrial activities compared to most others districts in the state. The district was also classified as one of the country's 250 most backward districts in 2006 by the Ministry of Panchayat Raj.

Table 114: Comparison of Bidar district with Karnataka – key indicators

Indicator	Year	Bidar	Karnataka
Area, in sq.km.	2001	5,448	191,791
Percentage share in State geographical area, %	2001	2.8%	100%
No. of sub-districts	2011	5	175
No. of inhabited villages	2001	599	27,481
No. of households	2001	252,250	10,401,918
Forest area as a % of total geographical area	2001	5.1%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Bidar district has a population of 17 lakh persons – 2.8 per cent of the State population. Majority of the population (27 per cent) is concentrated in Bidar sub-district, followed by Basavakalyan and Humnabad sub-districts at 20 per cent each, Bhalki sub-district at 17 per cent and Aurad sub-district at 16 per cent. While 57 per cent of the population in the district is in working-age group (15 to 64 years), about only 33 per cent is actually working i.e. work participation rate. Bidar district ranked last among all the districts in work participation rate.

The district's literacy rate is 71 per cent, which is lower than the State average of 75.6 per cent, and also lower to All-India average of 74 per cent. Male literacy at 79.94 per cent is significantly higher than female literacy rate at 61.66 per cent. Among all the districts in the state, Bidar ranked 22nd on Gender Development Index (GDI), with a value of 0.572.

Most of the population (77 per cent) lives in rural areas. In fact, as mentioned earlier, agriculture is also the main occupation of the people of the district, employing 62 per cent of the labour force as either

cultivators or agricultural labourers. Migration is observed in the district and this is mainly because most of the employment in agriculture which is seasonal. During off season, agricultural labours migrate to other states/other districts in search of job. According to a report developed by Institute for Human Development[11], around 14.3 per cent of the total households in the district had at least one migrant in them. Most of the migrants (around 68 per cent) travel to other states (Maharashtra and Andhra Pradesh) for work.

Table 115: Key demographic indicators

Indicator	Year	Bidar	Karnataka
Population, No.	2011	1,700,018	61,130,704
Decadal growth rate of population, %	2001-11	13.2%	15.7%
District's share in State's population, %	2011	2.8%	100%
Urban population as a percentage of total population, %	2001	23%	34%
SC population, %	2001	19.9%	16.0%
ST population, %	2001	12.1%	7.0%
Sex ratio, No. of females per 1000 males	2011	952	968
Population density, per sq. km.	2011	312	319
Literacy rate, %	2011	71%	75.6%
Main workers, No.	2001	424,985	19,364,759
Marginal workers, No.	2001	132,618	4,170,032
Working age population* as a percentage of total population, %	2001	56.7%	63%
Work participation rate^, %	2001	32.8%	45%
HDI	2001	0.599	0.65

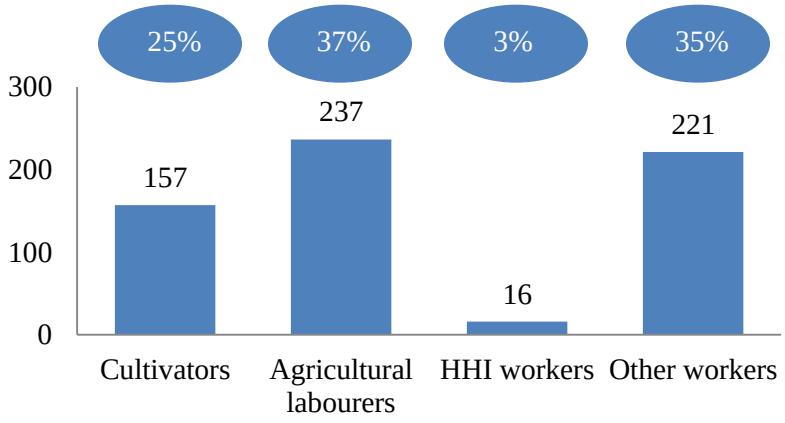
**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 6.3 lakh persons. Of this, 25 per cent are cultivators, 37 per cent are agricultural labourers, three per cent are workers in household industry and 35 per cent are other workers.

[11] Source: A baseline survey of minority concentration districts of India (Bidar) prepared by Institute of Human Development sponsored by Government of India and Indian Council of Social Science Research

Figure 65: Bidar district's worker profile, as of 2011, in thousands

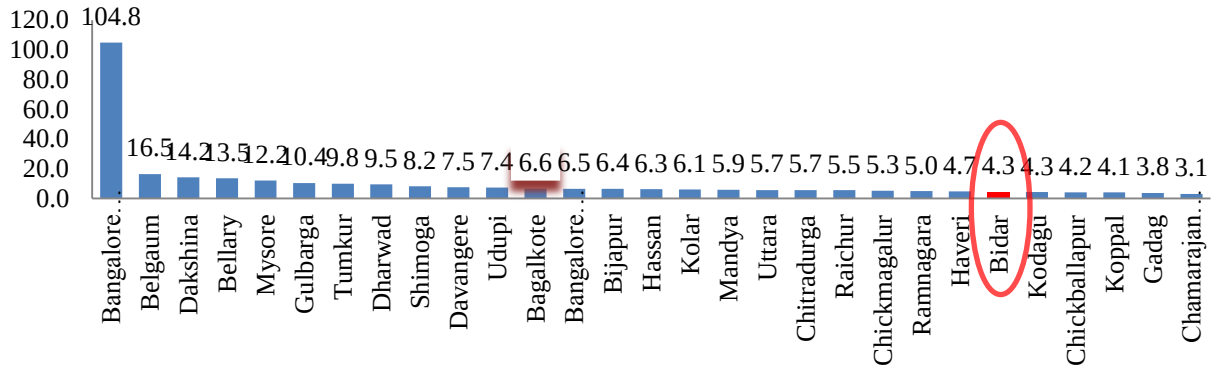


HHI: Household Industry
Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Bidar district had the 6th smallest Gross District Domestic Product (GDDP) in Karnataka at Rs 4,341.29 Crore (1.4 per cent of the Gross State Domestic Product). In terms of per capita GDDP though, it ranked last amongst all the districts at Rs 26,364. This was less than half of the State average of Rs 53,101.

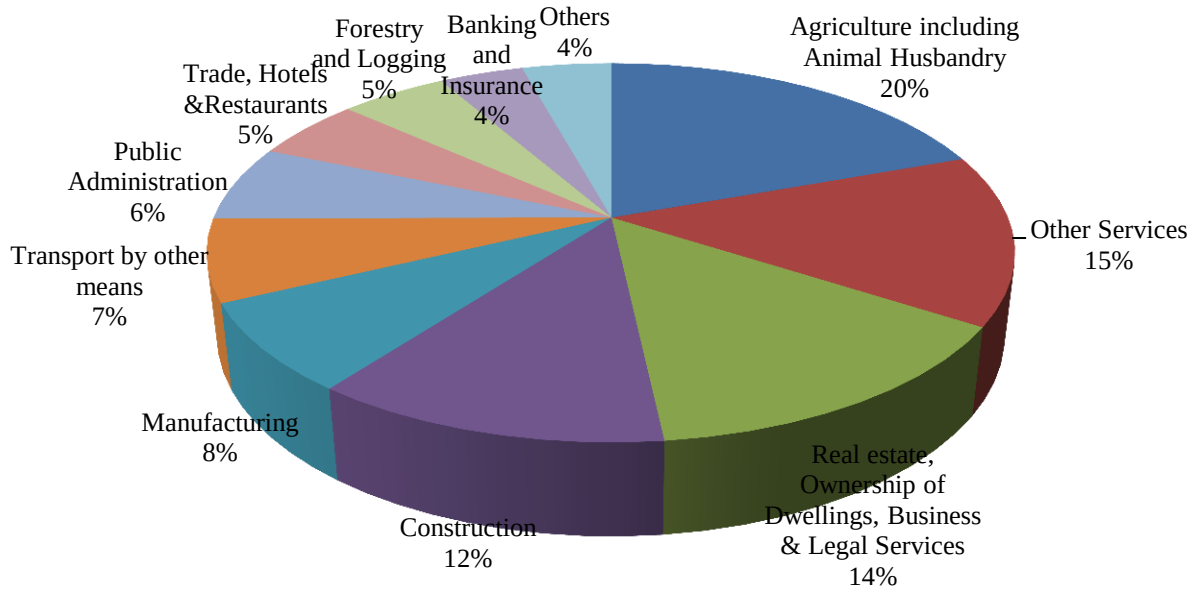
Figure 66: Gross District Domestic Product, in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 55 per cent in 2008-09. This is followed by primary sector at 25 per cent and secondary sector at 20 per cent.

Figure 67: Sector wise distribution of Bidar's GDDP, as of 2008-09, 100% = Rs 4,341.29 Crore



Source: Karnataka Directorate of Economic and Statistics

Agriculture: Bidar is mainly an agrarian economy. Of the total area of 5,448 sq. km. in the district, over 63 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of jowar and bajra under food crops, gram and tur under pulses and sugarcane under commercial crops. For details of crops grown in Bidar district, refer to annexures.

Industry: As of 31st December 2011, Bidar district had eight large and medium scale industrial units, employing 2,815 persons. These included companies such as Bidar Sahakare Sakkare Karkhane Limited, Gemini Graphics Pvt. Ltd, Carvin Chemicals and Pharmaceuticals. (Refer to annexures for complete list). End products manufactured included sugar, paper, drugs and crafts etc.

Bidar also has 284 Small Scale Industries (SSIs), employing 2,024 persons. As of March 2011, majority of these were automobiles based industries at 24 per cent, followed by textiles based industries at 15.5 per cent, food and intoxicant based industries at 9.2 per cent, mechanical engineering at 10 per cent and remaining in others. Refer to annexures for details. The number of SSIs is lower than most of other districts in the state and the industrial activity are considered to be low.

The district has six industrial areas, totalling 2,250 acres of land. Of this, 1,646 acres of land has been developed so far. For details, refer to annexures.

Bidar district has started to attract investments from industrial players. During the Global Investors Meet (GIM) held in 2010 in Karnataka, 19 Memorandums of Understanding (MoUs) amounting to Rs 1,318.94 Crore were signed for the district in the sectors such as agro and food processing, chemicals and pharmaceutical, tourism, etc. Once set up, these are estimated to employ 11,568 persons. Of 19, currently ten projects are under implementation. For detailed status of these projects, refer to annexures. In the recently conducted Global Investors Meet (GIM) 2012, 12 MoUs were signed for the Bidar district in sectors such as sugar, bulk drugs, etc. amounting to Rs. 4,109 Crore. For details of these projects, refer to annexures.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 55 per cent of GDDP in Bidar district. Of all the services, the key services in the district are of 'real estate, ownership of dwellings, business and legal services' at 14 per cent of GDDP, followed by 'transport by other means' at 7 per cent, 'public administration' at 6 per cent, trade, hotels and restaurants at 5 per cent and other services at 15 per cent.

2.3. State of education

As of September 2011, Bidar district had 2,403 schools, with 388,501 students enrolled. The drop-out rate was 5.7 per cent both for lower and higher primary schools. This is higher than the State average of 4.6 per cent for lower primary and lower than 8.1 per cent for higher primary schools.

There are 131 pre-university (PU) colleges with 19,095 students. There are also 18 general colleges, two medical college, six polytechnics (for technical education), three engineering colleges and two dental colleges. For details of courses offered by polytechnics, refer to annexures.

Table 116: School education infrastructure in Bidar district, as of September 2011

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Government	540	114,345	731	39,683	156	34,623
Aided	7	43,631	166	17,053	95	18,400
Unaided	188	70,392	291	19,415	196	24,672
Others	3	1,125	17	1,729	13	3,433
Total	**738**	**229,493**	**1,205**	**77,880**	**460**	**81,128**

Source: District Information System for Education (DISE) 2011-12

Table 117: Higher education infrastructure in Bidar district, as of March 2010

Colleges	No.	Students
PU Colleges	131	19,095
General	18	6,086
Medical	2	657
Polytechnic	6	1233
Engineering	3	1,183
Dental	2	151

Source: Bidar District At a Glance 2009-10

For vocational training, Bidar district had a total of 74 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, four were Government ITIs, six were private aided ITIs and remaining 64 were private unaided ITIs. All the 74 ITIs together have a seating capacity of 7,403.

Table 118: Key ITI indicators in Bidar district, as of March 2012

Indicator	Value
Total Number of ITIs	74
Number of Government ITIs	4
Number of Private aided ITIs	6
Number of Private unaided ITIs	64
Total Seating capacity	7,403
Student pass rate	75-80%
Student drop-out rate	10%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Bidar district, we have found that only 20 per cent of the students from ITI are able to get placement form the educational institutions. Most of the other

students migrate to place such as Hyderabad to find a job. For details on courses offered by ITIs in Bidar, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions.

The Government department offer courses in trades such as agriculture, health, education, etc. In agriculture sector, 'District Agriculture Training Centre' conducts farming programs to the farmers. Also, commodity based training program is given on crops such as tur by the state agricultural marketing board.

Rural Development & Self Employment Training Institute (RUDSETI) offers entrepreneurship development courses for rural women in various trades focusing on self employment. The institute was established by District Central Cooperative Bank, Bidar. The state run KEONICS offers computer related courses in the district.

The private training centres are offering computer courses. The courses offered by them includes Computer basics, MS office, Desktop Publishing (DTP), Tally, Programming languages (java, c), hardware courses, etc. There are few private training centres offering textile based courses such as apparel manufacturing technology, tailoring, pattern/cutting master, quality checker and garment finishing. There also few other training centres providing training on beautician, typing, etc. For details of training institutes and courses offered, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Bidar district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- Students from good colleges are able to get jobs in Hyderabad and prefer getting placed in Hyderabad only. Lure of city life and better lifestyle is high.
- Students, who are not able to get admissions in good colleges, prefer ITIs. The latter are also preferred because ITI certification helps in obtaining Government and even private jobs. The low fee is an added advantage.

- Students prefer government ITIs than private because of low fees, better infrastructure and adequate facilities
- The important criteria for choosing any trade are the job opportunities for that trade and their interest in a particular field.
- Students are able to choose their preferred course as variety of options is available in the district.
- Students believe that additional spoken English course can be added to the existing curriculum to improve their communication skills
- Training institutes in Bidar lack sophisticated machinery and equipment for training. Practical exposure is lacking.
- Quality of courses and teachers is good. Quality of infrastructure needs improvement.
- First preference is to work within Bidar district. However, they are ready to shift to any new places if they are offered a job.
- Some students along with their main course, pursue additional training courses on computer to increase their job opportunities
- Preferred sectors to work are manufacturing and IT. The students prefer a government job over a private sector jobs

3. Developmental concerns

Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Quality of education is average:** The district has not had good results in education. Bidar has secured last place in terms of pass percentage in the Secondary School Leaving Certificate (SSLC) examination for three years in a row. In 2012 results, the district has a pass percentage of 63.32 against the overall state pass percentage of 82.26. One of the reasons for the poor results is the lack of infrastructural facilities in the schools of the district. There are vacancies of teacher and these are needs to be filled. The result of education is also strongly linked to the socio-economic backwardness prevailing in the district. Children from poor families skip classes to work in fields. The pass percentage is very low in the border areas. On a brighter side, the district is showing progress in pass percentage with previous years. While it stood at 32.27 per cent in 2010, it rose to 53 per cent in 2011 and in the current year it has risen to 63.32 per cent. However, the

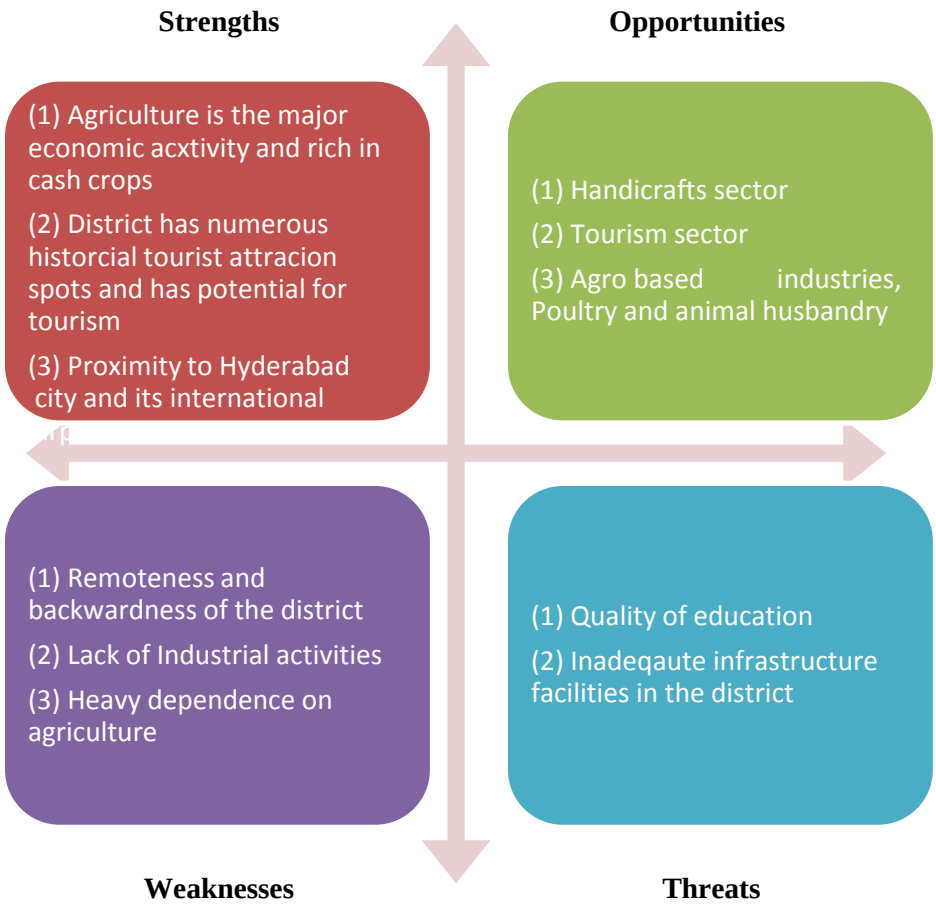
numbers are still considered to be low in comparison with the state's performance. The quality of education needs to be improved to have a skilled work force in the district.

- **Inadequate infrastructure facilities:** The district has many tourist attractive places. However, the district does not have adequate infrastructure facilities like hotels, travel operators to aid the industry's growth.

SWOT analysis

Based on the diagnostics of the Bidar district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 68: SWOT Analysis of Bidar district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 1.41 lakh persons is likely to be generated in Bidar district. Agriculture and allied activities are expected to remain the biggest employers. It will be followed by tourism and hospitality. As the economy grows, employment demand in supporting sectors such as construction, transportation, healthcare and education is also expected to increase at a faster rate. Sectors which are unique to Bidar and where skill up-gradation will be required within Bidar are agriculture and allied, handicraft and tourism industry.

Table 119: Incremental demand in Bidar – 2012 to 2022

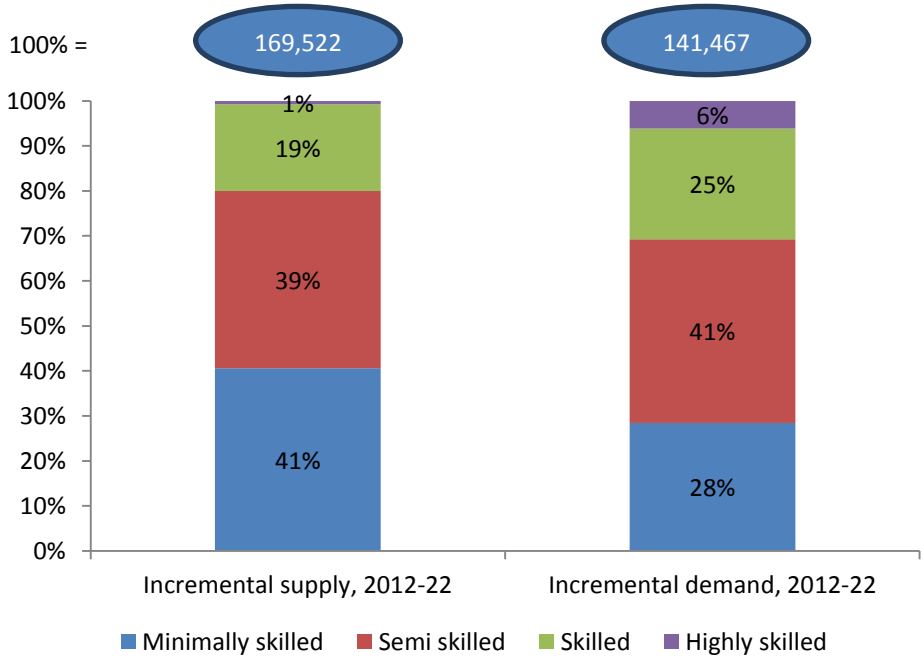
SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	41,425	34,502	5,157	938	829
BFSI	4,672	-	2,803	1,402	467
Building, Construction industry and Real Estate	24,514	7,354	12,257	3,677	1,226
Chemicals & Pharmaceuticals	403	81	121	121	81
Construction Materials and Building Hardware	1,522	152	990	304	76
Education and Skill Development	14,187	-	-	12,769	1,419
Electronics and IT hardware	-	-	-	-	-
Food Processing	305	91	91	91	30
Furniture and Furnishings	129	52	52	19	6
Healthcare Services	19,414	-	1,941	13,590	3,883
Transportation, Logistics, Warehousing and Packaging	12,591	2,518	7,303	2,518	252
Tourism, Travel, Hospitality & Trade	22,221	4,444	15,110	2,222	444
Unorganised	72	14	42	14	1
Total	**141,467**	**49,210**	**45,874**	**37,668**	**8,715**

Source: IMaCS Analysis. Note: Numbers for sectors will not add up to the total due to very small numbers accounted for by sectors such as auto and auto components.

The incremental supply of work-force between 2012 and 2022 is estimated at 1.69 lakh. This is higher than the demand, indicating that some of the workforce available in the district will not be absorbed within the district alone. Also as mentioned, migration of workforce is observed in the district. People will continue to move to cities in other states such as Maharashtra and Andhra Pradesh, where demand is higher. The district shares its boundary with these states and migration of minimally and semi-skilled

persons is a common phenomenon. Also, demand for skilled and highly skilled people is estimated to be more than the supply going forward. It becomes necessary to train the semi skilled persons to make them skilled and manage the demand and supply of skilled manpower in the district. Educational institutes such as ITI and ITC and other vocational training provider can build the skilled manpower required for the district.

Figure 69: Skill wise incremental demand and supply in Bidar district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on our field surveys in Bidar district, we have found out that sectors where skilling interventions are required are mainly 'agriculture and allied', 'tourism, travel, hospitality & trade' and handicraft sector. While new jobs are likely to be generated in agriculture allied sector, textile and clothing and tourism; interventions in handicraft sector are mainly from the skill up-gradation perspective. In addition, the district also has other manufacturing and chemical industries, which do not have significant employment generation potential, but are facing shortage of skilled manpower for functional skills such as fitter, electrical, welding, chemical processing, turning, etc.

Table 120: Sectors where interventions are required in Bidar district – comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Bidar	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 121: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Tourism		√	√
Unorganised sectors - Handicrafts	√		√
Others (Manufacturing, engineering etc.)			√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Unorganised sector - Handicraft

Bidar is one of the well known places for metal handicrafts. Bidar is the chief centre for the manufacture of a unique metal handicraft called 'Bidriware'. This is an important export handicraft of India. The origin of Bidriware is attributed to the Bahmani Sultans who ruled Bidar in the 13th to 15th century. This craft is manufactured from an alloy of zinc and copper inlaid with thin sheets of pure silver. The beauty of the craft is the striking contrast of colours, with the glossy silver inlay being set off by the matt black metal. Bidriware has a registered Geographical Indication (GI) status as well.

As said earlier, Bidar is the chief centre for Bidriware and a cluster of people are involved in making this metal ware. But in the recent years, the number of artisans in the area has come down due to low demand of the product and inability to make money out of this art. Presently, Karnataka State Handicrafts Development Corporation ltd (KSHDC) is assisting artisans in manufacturing of Bidriware because of the rich heritage of the craft. There is a Bidriware Craft Complex (BWCC) in Bidar which is operating under KSHDC. They help the artisans by providing the raw materials at a subsidised price (at 50 per cent of cost) and buy the finished metal craft from them at fair price. Then these are sold at outlets of Cauvery arts and crafts emporium (A unit of KSHDC) and some are being exported too. Some of the places of export include Middle Eastern nations, European countries and the USA. The tourists coming to India are major customers here.

Bidriware making requires absolute craftsman ship and unique skill. There is no mechanical process in making of the craft and all things are done with hands of artisans. Some of the craftsmen involved in making this craft includes moulder, designer, engraver and inlayer.

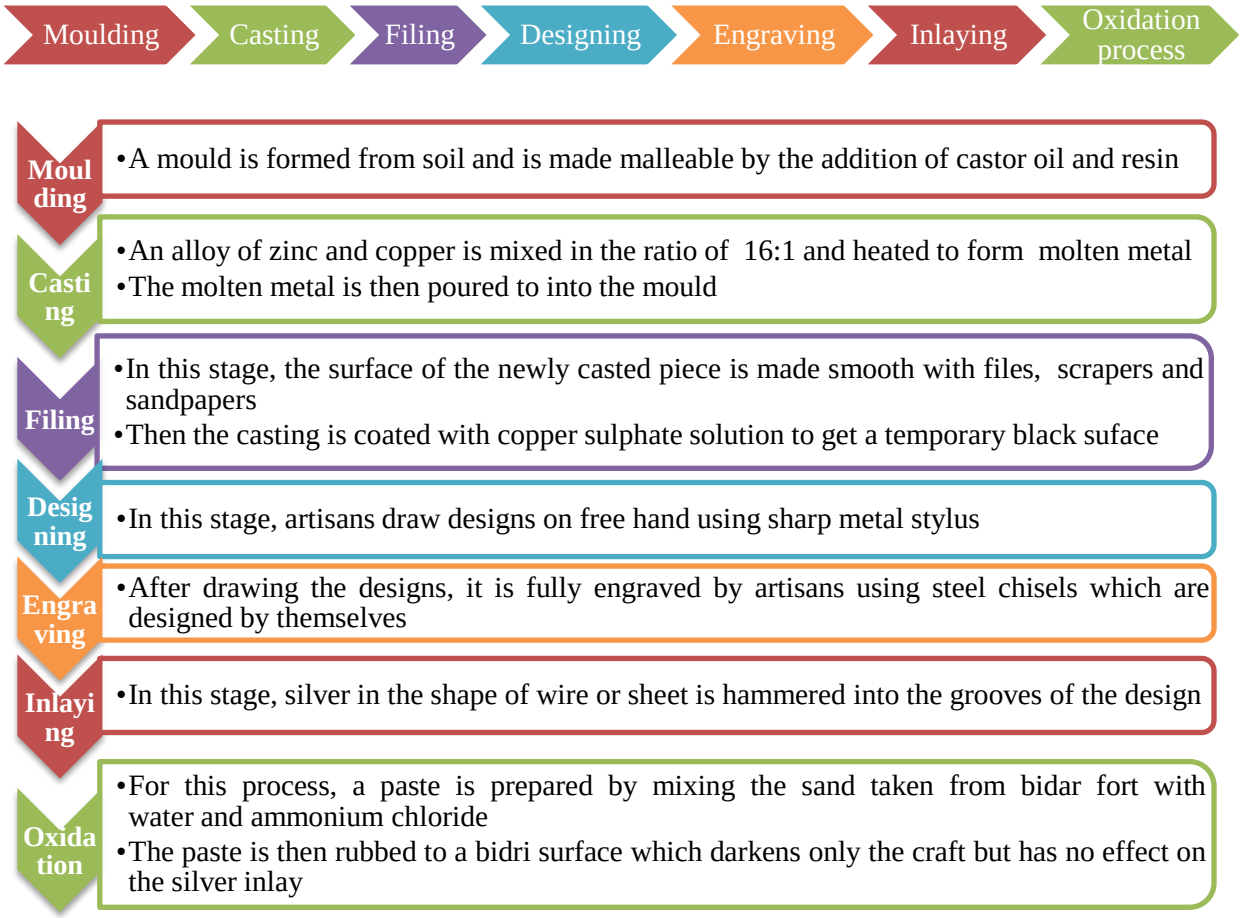
.

Bidriware

The demand of the craft has remained stable in the recent years. The raw materials involved in making of this crafts (zinc and copper) are expensive. So, the government helps the artisans by supplying them at a subsidised rate. Also, many artisans move from Bidar to Hyderabad where the market is bigger. And in the recent years, some of them have found a different profession as they are not able to make adequate profit out of it.

According to the officials of BWCC, new market needs to be penetrated. Also, they added that Bidriware is an expensive metal craft compared to other types of crafts. Also, it requires maintenance from the customers periodically to preserve it from being getting rusted and fading of colour. So, the customer prefers other less expensive art forms. And the artisans are involved in making same kind of designs which already exist. There is lack of creativity among them. Hybrid designs (mixing of other art forms with the metal craft) and new attractive designs needs to be created. They believe that training on designs and various art forms would help the artisans.

Figure 70: Process involved in making of Bidriware



Source: IMaCS analysis and Karnataka State Handicrafts Development Corporation

Engraving

Inlaying

Table 122: Skill gaps in handicraft sector in Bidar district

Role, educational qualification	Expected competency	Skill gaps
Artisans (Illiterate to 10th pass and experience in craft making)	▪ Hand control to preserve intricate designs ▪ Knowledge and use of tools and materials ▪ Ability to perform intricate work / finishing ▪ Knowledge and skills for design ▪ Ability to transfer skills to inexperienced craftsman ▪ Ability to undertake polishing / sandpaper finishing ▪ Ability to undertake chiselling and defining of lines and curves ▪ Ability to undertake finishing of faces and other minute details ▪ Ability to conceptualise and create new designs ▪ Ability to hammer out the shape from sheet metal and undertake fabrication ▪ Knowledge to mix the metal in correct proportion in forming an alloy	▪ Lack of creativity ▪ Inadequate knowledge of materials treatment ▪ Inadequate ability to undertake design and development as per market requirements ▪ Inability to come up with new designs or any process improvements

Source: IMaCS Analysis

5.2. Tourism, Travel, Hospitality & Trade

Bidar district has numerous historical monuments. Historically, Bidar district was ruled by various dynasties such as Rashtrakutas, Western Chalukyas, Bahmani, Mughals and Nizams. There were various monuments built during their period and remnants of these monuments are places of tourist attraction. Some of the well known tourist attractions in and around Bidar district are Bidar fort, Bahamani tombs, Madarasa of Mahmud Gawan, Choubara, Guru Nanak Jhira Gurudwara, Gagan Mahal, Jami Masjid,

Papnash Shiva temple, etc. A brief description on important tourist attractions in Bidar district is given below in Table 123.

Bidar fort

Mahmud Gawan Madarasa

Table 123: Important tourist attractions in Bidar district

Tourist Place	Particulars
Bidar fort	Bidar is considered as one of the most formidable forts of the country. This is the main attraction of the district and is located in the heart of Bidar town. The fort was built by Ahmed Shah Bahmani in 1428. It has five imposing entrances or Darwazas. In the center of this fort is the old city with its monuments and structures, belonging to the Bahamani era. There are important palaces within the ramparts of the fort.
Mahmud Gawan Madarasa	Madarasa of Mahmud Gawan is an Islamic seminary built in 1472 by Khwaja Mohammad Gawan, the Prime Minister during the reign of Bahamani ruler Muhammad-III. This university was once a renowned centre of learning in the Muslim world for the scholars of Persian, Arabic, philosophy, theology and mathematics. The massive three-storey building housed a mosque, a laboratory, lecture halls, quarters for the teaching faculty and a students' hostel.
Rangin Mahal	This is an exquisite palace built by Ali Shah Barid in the 16th century. The hall is decorated with original wooden columns displaying ornate brackets and beams. This palace is found inside the fort.
Chaubara	The Chaubara is a mighty 71-feet-tall tower located at the heart of Bidar town.

Tourist Place	Particulars
	Built to function as an observation post, this cylindrical structure gives a good view of the entire city from the top.
Tombs of Bahmani Rulers	The tombs of Bahmani rulers were erected from 1436 to 1535. The two most impressive are those of the ninth and tenth Bahmani rulers, Ahmad Shah I and Allauddin Shah II. The tomb of Ahmad Shah I has a dome rising over 30m high. The interior of these square tombs have beautifully coloured and gilded paintings on the ceilings.

There are various forms of tourism emerging in India such as heritage tourism m, eco tourism, wildlife tourism, adventure tourism, religious tourism, etc. Bidar would fall under the heritage tourism because of its rich history. There are number of ancient monuments and forts in Bidar district to promote tourism.

The various activity involved in tourism supply chain is explained below in Figure 71.

Figure 71: Tourism supply chain

Table 124: Skill gaps in Tourism sector in Bidar district

Role, educational qualification	Expected competency	Skill gaps
Travel Counsellors (Hr. Sec / Graduate with 0 – 3 years of experience)	▪ Ability to understand the needs of the customer and act as their travel advisor. ▪ Ability to effectively interact with customers and prospects and convert enquiries to sales. ▪ Knowledge on various travel routes both domestic and international. ▪ Ability to work in Central Registration System (CRS) for booking, cancelling, splitting, reissue of tickets etc.	▪ Lack of adequate geographical knowledge ▪ Need for better time management ▪ Lack of knowledge of client focussed/ customised products Currently, there are not many formal travel

Role, educational qualification	Expected competency	Skill gaps
	▪ Knowledge on refunding norms ▪ Knowledge on various formalities (passport, visa etc.) that the customer needs to comply with in case of outbound travels. ▪ Ability to calculate the ticket fare - should know their components (such as surcharge, service tax, etc.). ▪ Adequate knowledge of hotels available at various locations in order to execute hotel bookings.	counsellors in the district. But once the tourism sector becomes prominent, they will have a major role to play.
Driver (illiterate to 10th pass with a valid driving license)	▪ Ensuring safety of passengers ▪ Awareness on driving rules and regulations ▪ Familiarity with routes ▪ Ability to communicate and being sensitive to tourists ▪ Awareness on various hotels and other locations in the travel route. ▪ Knowledge of first aid ▪ Knowledge of English ▪ Understanding the traveller's requirements in terms of location preferences and acting accordingly.	

Source: IMaCS Analysis

5.3. Others

In addition to the sectors mentioned above, Bidar district is also home to some manufacturing and chemical based industries. There are some chemical plants that are planning to set up a unit in Bidar district but are still in preliminary stage. They are yet to identify land and obtain license, etc. While most

of the current players in the industry don't have any employment generation or expansion plans in the next few years, they have reported shortage of skilled manpower in some of the key functions like fitter, electrical, welding, chemical processing, turning, etc.

6. Recommendations

Recommendations for Bidar district focus on Handicrafts and tourism industries. These industries have employment generation potential and are also facing skill gap in their respective industries. Some of these sectors have recommendations for private players where training needs to be given to upgrade the skills required and the others will need government interventions where improvement in facilities is required or training by private players is not viable. There are also recommendations provided for the sectors which have future potential and opportunities in the district under the head 'others'.

Bijapur district has a significant percentage of employment is concentrated in agriculture, thus, major up-skilling can be done for those workers, updating them of latest techniques of farming. This will help them improve their livelihood opportunities and will increase their income levels. While the detailed recommendations follow, summary is given in the table below

Table 125: Key recommendations for Bidar - Summary

Sector	For Government players	For private players	For Industry
Unorganised sector – Handicrafts	▪ The state Handicraft Development Corporation can train artisans on skill up gradation ▪ Promote the handicraft products	▪ Training can be provided to artisans on a revenue sharing model ▪ Training on various art forms and hybrid designs	▪ n/a
Tourism, Travel, Hospitality & Trade	▪ Promote tourism industry by improving the infrastructure	▪ Training on communication and language	▪ Build resorts and amenities in the districts through PPP model and

Sector	For Government players	For private players	For Industry
	facilities ▪ Capacity building through Department of Tourism		improve the infrastructure ▪ Set up hotels, restaurants, etc. which can generate employment
Agriculture and allied activities	▪ Opportunities in agro and food processing sector and train farmers in that sector ▪ Can assist in opening dairy processing units and poultry farming	▪ n/a	▪ Setting up of industries such as dhal mills, dairy processing units and poultry farming
Others (Chemical based industries)	▪ n/a	▪ Training on chemical related trades based on chemical and bulk drug industries upcoming in the district	▪ Adopt best practices followed in the industry to ensure safety of workers ▪ 'In-house' training program to upgrade skills and job specific training

6.1. Unorganised sector - Handicrafts

Bidar is one of the well-known places for metal handicrafts. Bidar is the chief centre for the manufacture of a unique metal handicraft called 'Bidriware'. This is an important export handicraft of India. This craft is manufactured from an alloy of zinc and copper inlaid with thin sheets of pure silver. Bidriware has a

registered Geographical Indication (GI) status as well. In the recent years, the number of artisans involved in this art has come down. They seek alternate profession or move to Hyderabad where the market is bigger. The demand for the goods has remained stable in the years. As this is an unorganised sector, Government can intervene and aid the sector.

Government

Government is already taking measures to help this sector. Karnataka State Handicrafts Development Corporation Ltd (KSHDC) is assisting artisans in manufacturing of Bidriware because of the rich heritage of the craft. There is a Bidriware Craft Complex (BWCC) in Bidar which is operating under KSHDC. They help the artisans by providing the raw materials at a subsidised price (at 50 per cent of cost) and buy the finished metal craft from them at fair price. Then these are sold at outlets of Cauvery Arts and Crafts Emporium (A unit of KSHDC) and some are being exported too.

Government can play a major role in increasing the market for these products. New markets can be identified and penetrated. The sector is also facing competition from various other art forms. Crafts made of wood, plaster of paris and others are the chief competitors. They are less expensive and easy to maintain compared to Bidriware. So, people have started to buy those products. Therefore, innovation in bidriware is required to compete in the market. As this art requires absolute craftsmanship and unique skill, training can be provided to enhance the skill needed for the art. KSHDC can offer skill up gradation training for artisans.

The Department can also help to increase the sales of this craft by conducting sales exhibitions and selling them at discount rates. The products can be made to display at various cultural fest and other functions organised by the Government. Foreign tourists are one of the major customers of this craft. Showrooms can be opened where tourist numbers are high. Promotional activities can be undertaken to reach the customers. Online shopping is popular now and Bidriware is currently sold in this platform as well. However, the scope in this channel is high and can be expanded. Government can conduct awareness programs on the various distribution channels available to sell this craft and utilise them effectively by artisans.

Private players

Private players can also engage in providing training to the artisans and upgrade their skills. But these artisans are generally from economically backward families and may not be able to afford to pay training fees. However, one way of training is possible by them. They can train these craftsmen free of cost but will be able to sell the products that are made by them during the training period. It can be a source of revenue for the training provider. The excess revenue over training expenses can be shared with the artisans and it can act as a motivating factor for them to involve in such training programs. The training program can focus on areas such as:

- Improving the creativity of artisans
- Various art forms
- Hybrid designs (mixing other art forms with metal ware)
- New attractive designs

6.2. Tourism, Travel, Hospitality & Trade

Bidar district has numerous historical monuments. Some of the well-known tourist attractions in and around Bidar district are Bidar fort, Bahamani tombs, Madarasa of Mahmud Gawan, Choubara, Guru Nanak Jhira Gurudwara, Gagan Mahal, Jami Masjid, Papnash Shiva temple, etc. Heritage tourism can be promoted in this region. The district headquarter Bidar is close to Hyderabad (about 120 kms) where international airport and other infrastructure facilities are available. Tourists usually set their base in Hyderabad and visit these places. Tourism industry requires trained and skilled workforce.

Private players

Throughout the tourism value chain in Bidar district, based on the functional roles, training and skilling is required. Bidar also falls under the North Karnataka tourism circuit. There is scope for capacity building in this sector. A training institute can be set up in Bidar to train on various job roles required for tourism industry.

Table 126: Training required in Travel, tourism and hospitality - Bidar

Functional role	Training required
Tourist guide/operator	• Communication skills and Language based training • Courses to engage with the customer i.e. soft skills training

Functional role	Training required
	• Knowledge about history and historical monuments in the regions • Knowledge about handicrafts of the region (Bidriware) • Emergency needs such as first aid • Geographical knowledge about the region and travel routes

Government

Government can aid tourism industry by improving the infrastructure facilities in the district. It can improve the infrastructure by linking all the tourist attractions through roads and the tourists can visit all these places without hassles. Also, basic amenities like restaurants, restrooms, etc needs to be built up in the tourist attractive places. Karnataka State Tourism Development Corporation (KSTDC) has already taken initiatives in improving the facilities in tourist attractions like building hotels and basic amenities through Public Private Partnership (PPP) model. Similar developmental measures can be taken by the department in Bidar as well. The Hyderabad Karnataka Area Development Board (HKADB) is also working on improving the tourism sector in the district. The board has taken measures to boost tourism along the Gulbarga-Bidar-Bijapur circuit.

Department of tourism is involved in capacity building for this sector. It can scale up the by conducting more batches of training for tourist guide and other roles according to the demand in the district. It can also involve in promoting the tourism industry for the district with the help of state government. There are few annual promotional events conducted at these historical attractions (eg. Bidar Utsav – 2011 in Bidar fort conducted by District Council of Culture). These needed to be promoted well to reach more audience and get more visitors for the district.

Industry

There are opportunities for setting up of tourism based industries in the district such as hotels, restaurants, travel operators, etc. Few industries have expressed their interest in setting up a tourism related industry in the district during the Global Investors Meet (GIM) held on 2010 and 2012. These industries may tie up with the training providers (government and private) and source the manpower required for them. Such tie ups can also ensure need based training is provided and industry requirements are met. Industries may also involve in building the required infrastructure for tourism in

the district. KSTDC have taken the initiative of building resorts and other amenities in the tourist places through PPP model in select tourist places. Through such schemes, private industry players can participate to develop the infrastructure in tourist places which could lead to employment generation in the sector.

6.3. Agriculture and allied activities

Bidar is mainly an agrarian economy. Of the total area of 5,448 sq. km. in the district, over 63 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of jowar and bajra under food crops, gram and tur under pulses and sugarcane under commercial crops. Other allied activities include milk processing and poultry farming. There are good potential for these activities in the district and Government can intervene and take measures to improve the sectors.

Government

Government can aid in agriculture and allied sectors. The district is basically an agrarian economy. Government (Department of Agriculture) can train people on agro and food based industry. There are some agro based industries in the district such as dhal mills and few food processing units and some are upcoming in the district. Training on food processing products such as pickles, fried gram, papad making and other food related products can be offered. Government can also create awareness about the benefits of the food processing among farmers and help them in marketing the products. Training can be focused on:

- Various food processing products through locally available raw materials like gram, tur, etc.
- Ingredients to be used for final product
- Safety and hygienic practices
- Packing of products
- Storage of products

Animal Husbandry and Milk Processing (Dairy) are other allied sectors were government can intervene. These are important sectors in the district which supplements family income and generates additional employment for weaker section of the society. Dairy processing has a good potential in the district. The district has the 'Deoni' breed of Cows, known for high yield of milk. Milk is produced in abundance in the district (three lakh litres per day) and is sent to Gulbarga for further processing. Dairy units can be set up in the district with the help of government. Value addition process can be taught to farmers through

training. Poultry Units can also be developed in the district. The districts' annual meat production is 1016 tonnes and annual egg production is 143 lakhs[12]. Farmers can be assisted in setting up of broiler farming units and poultry units. Farmers generally lack the awareness about value addition and marketing knowledge in this sector. Short term training in these areas can be provided by the government to improve the employment in these sectors.

Industry

As mentioned above, the district has a good potential for setting up units based on agriculture and allied activities. The industries can set up new units based on the availability of raw material in the district. They can set up mini dhal mills and food processing units as the crop (gram, tur, etc.) is available in abundance in the district. There is also opportunity in milk processing units and poultry farming. Manpower for these units is available locally. They can also take the help of Government (availing loan, etc.) in setting up of these units which can generate local employment in the district.

6.4. Others

Many industries have started to invest in the district. In GIM 2010 and 2012, many industries have expressed their interest to start up a unit in the district. The sectors focused for the districts include agro and food processing, bulk drugs and chemicals, tourism and hospitality and sugar based industries. There will be requirement of skilled manpower for these industries once these are set up in the district and start functioning. So, capacity building in terms of manpower will be essential in future when these industries start operating. There is also migration of work force to nearby regions. There are auto manufacturing and auto ancillaries units in the border region (Andhra Pradesh – Karnataka). These units are part of Andhra Pradesh state. Some of the people from Bidar travel to work in these units. Capacity building can be done for these sectors as well. Private players can intervene in some sectors where skill based training can be provided and Government can intervene in the sectors by facilitating infrastructure improvement, capacity building through training wherever is not viable for private players.

[12] Source: Karnataka Global Agribusiness & Food Processing Summit '11

Private players

Private players can aid in capacity building for the upcoming industries in the district. There are many chemicals and bulk drugs based industries that have expressed their interest in commencing the operations in the district. This industry would require skilful employees from chemical background. Students from B.Sc and M.Sc in chemistry are preferred for technical roles in the industry. Also, the industry requires fitter and electrician trade students from ITI background. Therefore ITIs can provide training on these areas to suit the requirement for the industry. The training can be focused on:

- Knowledge of chemicals used in the industry
- Process knowledge for various products
- Mixing of chemicals at the desired proportion for the output
- Handling of hazardous chemicals
- Fitter and electrician trade required for the industry
- Safety procedures to be followed in the chemical plant

Industry

There are few chemical and drug based industries currently operating in Bidar district. These industries follow few 'In-house training' programs for the workers and employees in the unit. This training program is structured in a way that an unskilled worker is trained and made to a skilled worker in a reasonable period of time. These workers (usually with an education of 10^{th} std) join as helpers to the senior worker and he trains them on various aspects of the work involved in the unit. The new workers (without prior experience in the industry) are not allowed to handle chemicals during the initial period of training/working. They are taught about the hazardousness of these chemicals and way to handle them. Safety measure training is provided to all the employees periodically. Usage of personal protection care equipments such as gloves, masks, etc. are also told to them. These are some of the best practices followed by some players in the industry. These kind of measures and training program needs to be followed across the industry players which can ensure safety of employees as well as effective production.

3.7. BIJAPUR

1. Introduction

Bijapur district is in the northern part of Karnataka and the city of Bijapur is located 520 km away from the State capital, Bangalore. It has a total land area of 10,536 sq. km., which is 5.49 per cent of the total State area. It is bordered on north by the Solapur district of Maharashtra, on the east by the districts of Gulbarga, Raichur and Yadgir, on the south by Bagalkot district, on the west by Belgaum district and on the north-west by Sangli district of Maharashtra.

It is sub-divided into 5 sub-districts and has 660 villages. Majority of the population at 78.1 per cent lives in rural areas. Agriculture is the main occupation, employing 70 per cent of the labour force (as of Census 2001). The remaining is in household industry (three per cent) and other workers[13] at 27 per cent.

Jowar, maize and wheat are the key crops grown. Gram is the major pulses grown in the district. Sugarcane is the major commercial crop grown and has led to setting up of large and medium scale sugar mills in the district. Also, horticulture crops such as pomegranate, grapes, lemon are grown in

[13] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

plenty. Agriculture is the important sector and the major contributor to the district's economy. The district has around 75 per cent of its total land as cultivated area.

The district is predominantly agricultural based and there are no large industries sparing few sugar based industries. Also, the district faces migration of manpower to nearby states such as Maharashtra and to other nearby district of Karnataka due to the drought conditions prevailing in the district.

Table 127: Comparison of Bijapur district with Karnataka – key indicators

Indicator	Year	Bijapur	Karnataka
Area, in sq.km.	2001	10,536	191,791
Percentage share in State geographical area, %	2001	5.49%	100%
No. of sub-districts	2011	5	175
No. of inhabited villages	2001	660	27,481
No. of households	2001	317,379	10,401,918
Forest area as a % of total geographical area	2001	0.19%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Bijapur district has a population of 21.7 lakh persons – 3.6 per cent of the State population. Majority of the population (31 per cent) is concentrated in Bijapur sub-district, followed by Indi sub-district at 20 per cent, Sindagi sub-district by 18 per cent and Basavana Bagewadi and Muddebihal sub-districts at 17 and 14 per cent respectively. While 58 per cent of the population in the district is in working-age group (15 to 64 years), about 40 per cent is actually working i.e. work participation rate.

The district's literacy rate is 67.2 per cent, which is lower than the State average of 75.6 per cent, and lower than All-India average of 74 per cent. Male literacy at 77.41 per cent is significantly higher than female literacy rate at 56.54 per cent. Of the 30 districts, Bijapur ranks 21st on Gender Development Index (GDI), with a value of 0.573.

Most of the population (78 per cent) lives in rural areas. In fact, as mentioned earlier, agriculture is also the main occupation of the people of the district, employing 70 per cent of the labour force as either cultivators or agricultural labourers.

Table 128: Key demographic indicators

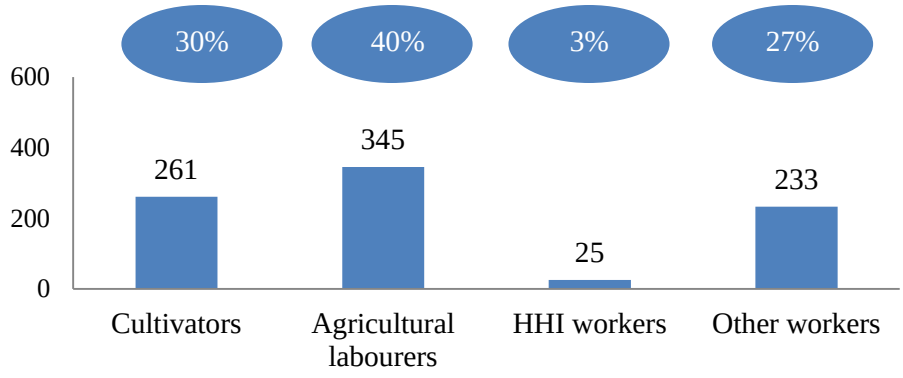
Indicator	Year	Bijapur	Karnataka
Population, No.	2011	2,175,102	61,130,704
Decadal growth rate of population, %	2001-11	20.4%	15.7%
District's share in State's population, %	2011	3.6%	100%
Urban population as a percentage of total population, %	2001	21.9%	34%
SC population, %	2001	18.5%	16.0%
ST population, %	2001	1.7%	7.0%
Sex ratio, No. of females per 1000 males	2011	954	968
Population density, per sq. km.	2011	207	319
Literacy rate, %	2011	67.2%	75.6%
Main workers, No.	2001	551,972	19,364,759
Marginal workers, No.	2001	166,241	4,170,032
Working age population* as a percentage of total population, %	2001	58.1%	63%
Work participation rate^, %	2001	39.7%	45%
HDI	2001	0.59	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 7.18 lakh persons. Of this, 30 per cent are cultivators, 40 per cent are agricultural labourers, three per cent are workers in household industry and 27 per cent are other workers.

Figure 72: Bijapur district's worker profile, as of 2011, in thousands



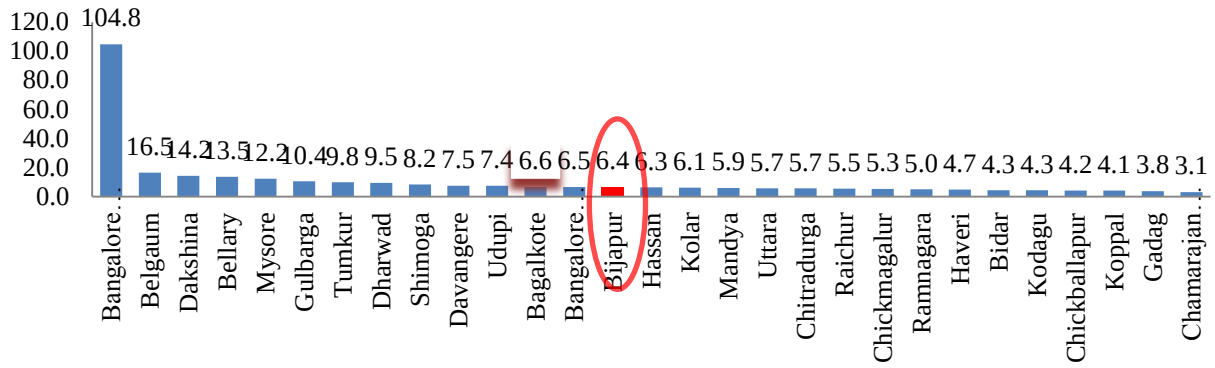
HHI: Household Industry

Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Bijapur district had the 14th largest Gross District Domestic Product (GDDP) in Karnataka at Rs 6,417.72 crore (2.1 per cent of the Gross State Domestic Product). In terms of per capita GDDP though, it ranked 22nd amongst 30 districts at Rs 32,405. This was lower than the State average of Rs 53,101.

Figure 73: Gross District Domestic Product, in Rs. thousand crores, as of 2008-09

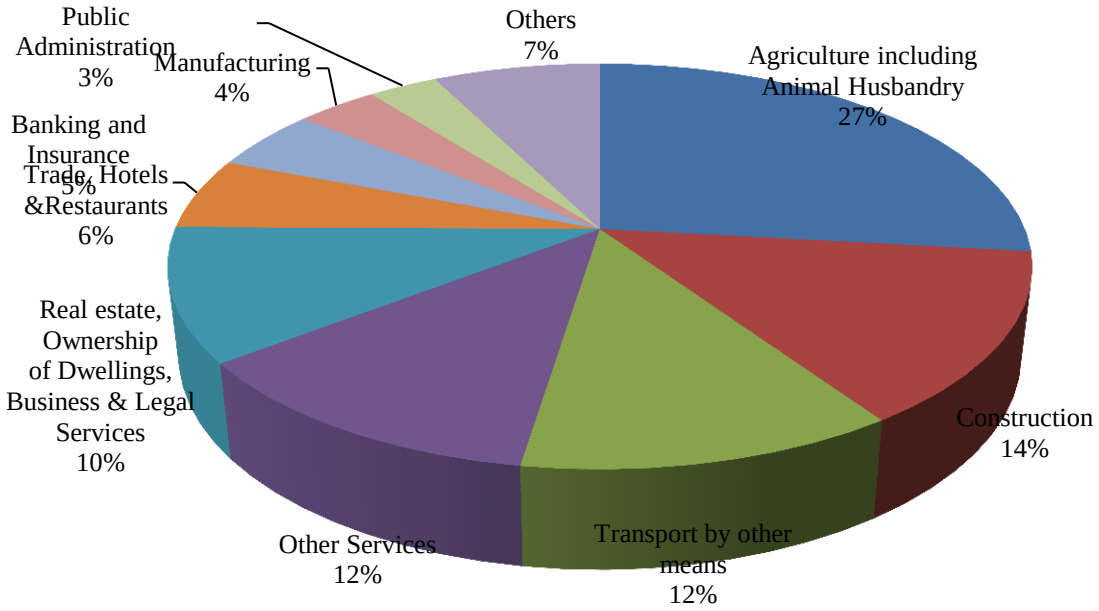


Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 51 per cent in 2008-09. This is followed by primary sector at 30 per cent and secondary sector at 19 per cent.

.

Figure 74: Sector wise distribution of Bijapur's GDDP, as of 2008-09, 100% = Rs 6,417.72 crore



Source: Karnataka Directorate of Economic and Statistics

Agriculture: Of the total area of 10,536 sq. km. in the district, over 82 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of jowar, maize and wheat under food crops and sugarcane under commercial crops. For details of crops grown in Bijapur district, refer to annexures.

Industry: As of 31st December 2011, Bijapur district had 3 large and medium scale industrial units, employing 1,629 persons. These include companies namely Nandi Sugars, Dyanayogi Shri Shivakumar Swamiji Sugars Limited and Indian Sugars. Sugarcane is abundantly grown in these areas and the district is expected to have 10 large and medium scale sugar industrial units by 2014[14].

Bijapur also has 8,471 Small Scale Industries (SSIs), employing 33,476 persons. As of March 2010, majority of these were food & intoxicants based industries at 25.3 per cent, followed by wood based industries at 14.8 per cent, textile based industries at 13 per cent, job works and repairs based industries at 12.9 per cent and remaining in others. Refer to in annexures for details.

[14] Source: District Industries Centre (DIC), Bijapur

The district has three industrial areas, totalling 588 acres of land. Of this, 532 acres of land has been allotted so far. For details, refer to annexures.

The National Thermal Power Corporation (NTPC) is setting up a power plant in kudgi, Bijapur district. This plant is expected to employ some people in the district and also improve the service sector in the nearby region. So, the project can act as a catalyst in creating indirect employment as well. Bijapur district is attracting investments from industrial players in the recent times. During the Global Investors Meet (GIM) held in 2010 in Karnataka, eight Memorandums of Understanding (MoUs) amounting to Rs 10,715.69 crore were signed for the district. Once set up, these are estimated to employ 3,312 persons. All the projects are yet to progress and are in stage of filing applications. For detailed status of these projects, refer to annexures. Also, in the recently held Global Investors Meet (GIM) 2012, 26 Memorandums of Understanding (MoUs) amounting to Rs. 17,549 crores was signed for the district. Some of the sectors covered in the MoUs include sugar, cement, power, textiles, tourism, etc. For detailed list of projects signed, refer to annexures.

Services: The services sector includes construction, wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 51 per cent of GDDP in Bijapur district. Of all the services, the key services in the district are of 'transport by other means' at 12 per cent of GDDP, followed by 'other services' at 12 per cent and 'real estate, ownership of dwellings, business and legal services' at 10 per cent.

2.3. State of education

As of September 2011, Bijapur district had 2,990 schools, with 468,703 students enrolled. The drop-out rate was 4.48 per cent each for lower primary and upper primary schools. The State average is 4.6 per cent for lower primary and 8.1 per cent for higher primary schools. The district has a lesser drop-out rate in upper primary schools compared with the State average.

There are 126 pre-university (PU) colleges with 34,331 students. There are also 64 general colleges, two medical college, four polytechnics (for technical education), three engineering colleges and one dental college. For details of courses offered by polytechnics, refer to annexures.

Table 129: School education infrastructure in Bijapur district, as of September 2011

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Government	824	96,677	1,062	67,386	137	31,613
Aided	30	17,853	72	6,448	183	50,963
Unaided	278	68,409	235	14,666	125	14,302
Others	8	96,012	19	2,029	17	2,345
Total	**1,140**	**278,951**	**1,388**	**90,529**	**462**	**99,223**

Source: District Information System for Education (DISE) 2011-12

Table 130: Higher education infrastructure in Bijapur district, as of March 2010

Colleges	No.	Students
PU Colleges	126	34,331
General	64	14,185
Medical	2	1182
Polytechnic	4	1,149
Engineering	3	733
Dental	1	362

Source: Bijapur District at a Glance 2009-10

For vocational training, Bijapur district has a total of 49 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, three were Government ITIs, six were private aided ITIs and remaining 40 were private unaided ITIs. All the 49 ITIs together have a seating capacity of 3,492.

Table 131: Key ITI indicators in Bijapur district, as of March 2012

Indicator	Value
Total Number of ITIs	49
Number of Government ITIs	3
Number of Private aided ITIs	6
Number of Private unaided ITIs	40
Total Seating capacity	3,492
Student pass rate	80%
Student drop-out rate	5%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Bijapur district, we have found that on an average, of all the students that pass out from an ITI in each year, 50 to 60 per cent find jobs in the market. For details on courses offered by ITIs in Bijapur, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions.

The government department offer courses in trades such as agriculture, animal husbandry, education, health, etc. In agriculture sector, 'District Agriculture Training Centre' conducts courses relating to the district agricultural status such as soil, crops, water, etc. District Chicken Breeding and Training Centre conduct courses on animal husbandry. The state run KEONICS offers computer related courses in the district.

The private training centres are offering computer courses. The courses offered by them includes Computer basics, MS office, Desktop Publishing (DTP), Tally, Programming languages (java, c), hardware courses, etc. Centre for Entrepreneurship Development of Karnataka (CEDOK) conducts various entrepreneurship development programs. Various people are benefitted by these programs and started their own business in fields such as mobile repairing, electronics, etc. There are few private training centres offering textile based courses such as tailoring, pattern/cutting master, quality checking and garment finishing. There also few other training centres providing training on beautician, typing, etc. For details of training institutes and courses offered, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Bijapur district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- The trade that is in maximum demand among students is electrician
- Training institutes in Bijapur lack adequate machinery and infrastructure for training. Students also feel that up gradation needs to be done in the curriculum.
- Placement scenario in training institutes is below average mainly because of lack of industrial activities in and around the district.

- Students' first preference is to join the government ITI as they consider the certificate from a government ITI is valuable and the facilities are available better than the private ITI at lesser fees.
- First preference of the youth is to work within Bijapur district only. However, if there is an opportunity to work outside the district, people are willing to migrate.
- Students expect a salary of around Rs. 7,000 to 8,000 per month on their first job after completion of the course.
- Some students are willing to pursue parallel training courses along with their primary course which can increase their job opportunities. Some of such courses undertaken by students are tailoring, motor winding, mobile phone repairing and computer & IT related courses.
- Preference for white collar jobs as compared to blue collar and manual jobs.
- Preferred sectors to work are manufacturing and IT.

3. Developmental concerns

Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

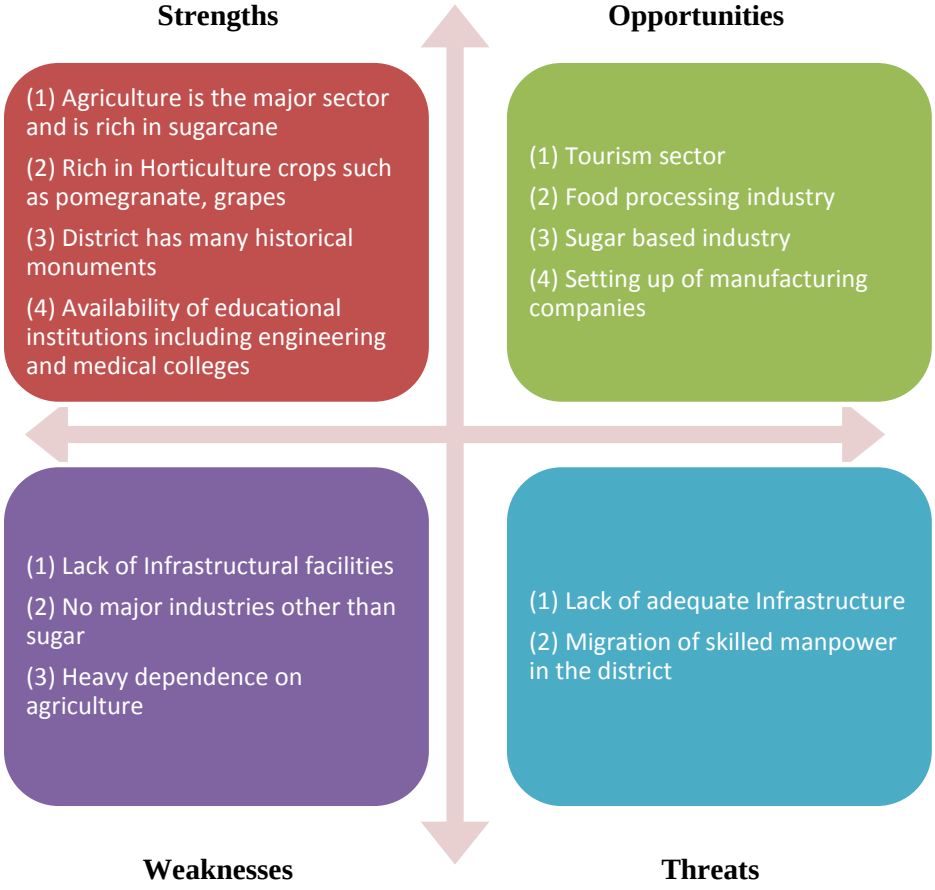
- **Lack of infrastructural facilities:** The road conditions in the district are not up to the standards. Considering the place is a tourist destination with many historical monuments, the district should have good infrastructural facility. Railway network is not directly linked with some important cities and towns such as Chennai, Bidar, etc (And for Mysore, only one weekly direct train is available). There are not many good hotels and resorts in the district. These are essential to improve the tourism industry which has a huge potential in the district. Also, lack of good road infrastructure also increases the cost of transportation for the traders and they cannot be competitive with other markets which have sufficient infrastructural facility. New industries have not ventured in the past decade mainly due the lack of such facilities. These inadequate infrastructural facilities may remain as a hurdle in the development of the district, if not addressed in the coming years.
- **Migration of people may lead to shortage of manpower within the district:** Migration of manpower is common in Bijapur. People migrate mostly to Maharashtra which is closer to the district. The key reason for migration is the drought-like condition that is occurs during the off season in the district. Most skilled and unskilled labour in the district moves out for a better living in the nearby districts and State. This may lead to a shortage in skilled and unskilled

manpower in the district when the progress happens and industries start to function in the district.

SWOT analysis

Based on the diagnostics of the Bijapur district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 75: SWOT Analysis of Bijapur district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 2.03 lakh persons is likely to be generated in Bijapur district. Agriculture and allied activities are expected to remain the biggest employers. Food processing industry has a good potential in the district because of the horticultural crops grown in the district. The demand in this sector will increase in future with setting

up of industries. There could be an increase in demand across various sectors such as hospitality due to some of the upcoming large projects in the district (For example, NTPC power plant). As the economy grows, employment demand in supporting sectors such as construction, transportation, healthcare and education is also expected to increase at a faster rate. The sectors which are unique to Bijapur and where skill up-gradation will be required within Bijapur are food processing and tourism industry.

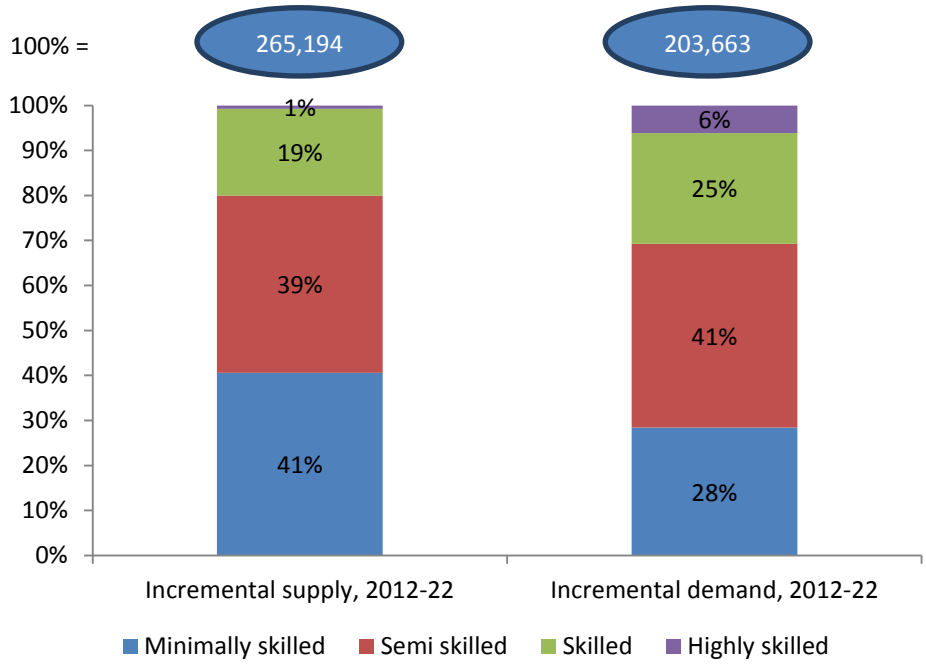
Table 132: Incremental demand in Bijapur – 2012 to 2022

SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	59,998	49,971	7,469	1,359	1,200
BFSI	6,172	-	3,703	1,852	617
Building, Construction industry and Real Estate	41,304	12,391	20,652	6,196	2,065
Chemicals & Pharmaceuticals	80	16	24	24	16
Construction Materials and Building Hardware	2,565	257	1,667	513	128
Education and Skill Development	17,888	-	-	16,099	1,789
Electronics and IT hardware	251	25	125	88	13
Food Processing	2,519	756	756	756	252
Furniture and Furnishings	92	37	37	14	5
Healthcare Services	14,166	-	1,417	9,916	2,833
Textile and Clothing	1,744	349	1,046	262	87
Transportation, Logistics, Warehousing and Packaging	30,302	6,060	17,575	6,060	606
Tourism, Travel, Hospitality & Trade	26,437	5,287	17,977	2,644	529
Unorganised	59	12	34	12	1
Total	**203,663**	**75,169**	**72,539**	**45,810**	**10,145**

Source: IMaCS Analysis. Note: Numbers for sectors will not add up to the total due to very small numbers accounted for by sectors such as auto and auto components.

The incremental supply of work-force between 2012 and 2022 is estimated at 2.65 lakh. This is higher than the demand of 2.03 lakh, indicating that some of the workforce available in the district will not be absorbed within the district alone. People will continue to move to cities such as Pune, Mumbai, Bengaluru, etc where demand is higher. Most of the people migrating out of the district are unskilled. Also, seasonal migration (during off season) is observed in the district. This trend is expected to continue. Demand for highly skilled and skilled people are estimated to be more than the supply going forward. To cater the demand of skilled and highly skilled people, training infrastructure in the district needs to be developed to address the demand supply gap.

Figure 76: Skill wise incremental demand and supply in Bijapur district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on our field surveys in Bijapur district, we have found out that sectors where skilling interventions are required are mainly 'agriculture and allied', 'food processing', and 'tourism, travel, hospitality & trade'.

Table 133: Sectors present in Bijapur district – comparison with Karnataka

(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Bijapur	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		

High Growth Sectors identified by NSDC	Bijapur	Karnataka
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 134: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Food Processing	√	√	√
Tourism		√	√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Food Processing Industry

Food Processing – Horticulture Crops processing

As of March 2010, Bijapur district had 2,140 food and intoxicants based SSIs, employing 10,342 workers. This was the highest number of units and employment under any category in SSIs in Bijapur. Agriculture is the important sector of the district and major contributor to the economy. The district is also rich in horticulture crops such as pomegranate, grape, lemon, etc. Availability of various horticulture crops (fruits, vegetables, garden crops) makes this place a potential centre for food processing industry.

Considering the opportunity, the state government in 2010 has proposed to set up a food park in the Bijapur region. The food park is expected to have industries on production of wine from grapes, processing of fruits (pomegranate, mango, citrus fruits, banana, etc. to produce fruit squashes and syrups, fruit jams, etc.) and sorting, grading and packing of various fruits and vegetables for organized retail market. The project is estimated to cost Rs 23.84 crore and planning to start commencement of operation by 2013.

Currently, most of the fruits produced are sold fresh in markets without further processing. The risk in this business is high because of the perishable nature of the product. Currently, there are only very few small scale industries involved in processing of fruits mainly converting grapes to raisins. Also, there are two to three wine manufacturers.

However, considering the availability of various horticulture crops in the district, there is a huge potential in the food processing sector for employment generation. There is lack of skill and knowledge about the food processing among the people.

Figure 24 given below explains the value chain of the Fruit and Vegetable Processing Segment.

Figure 77: Value chain in Fruit and Vegetable processing segment

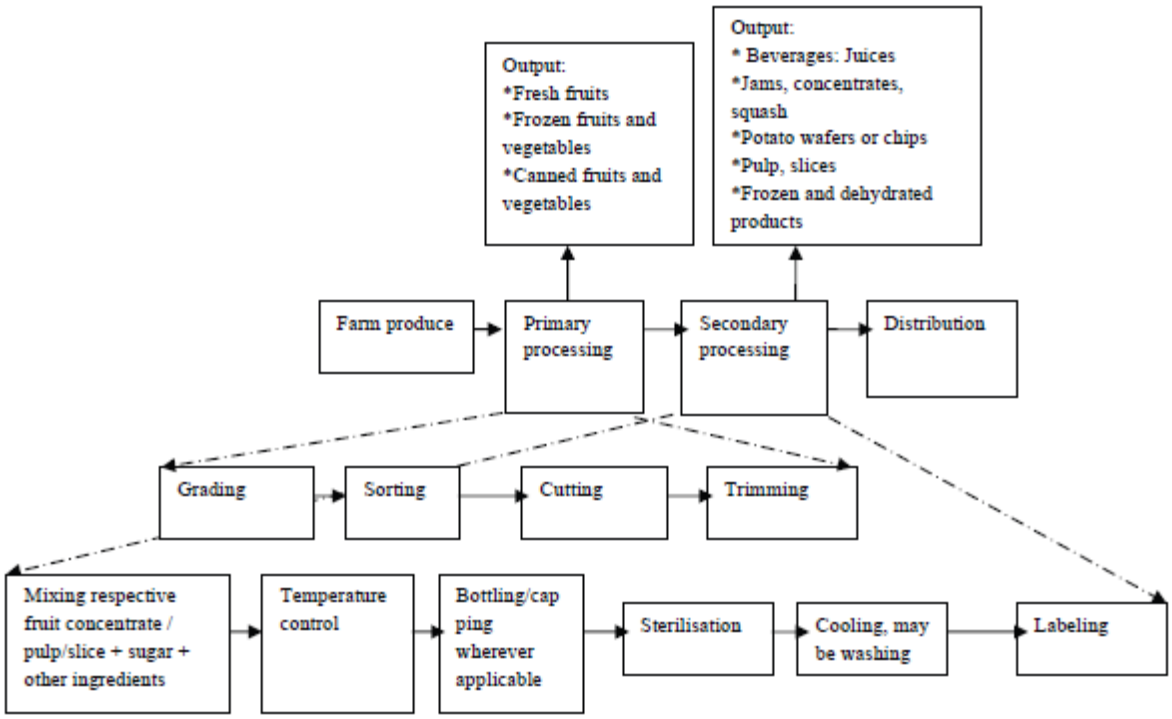


Table 135: Skill gaps in Food processing sector in Bijapur district

Role, educational qualification	Expected competency	Skill gaps
Supervisor (Graduate in any stream with experience in the sector)	▪ Good reporting/documentation skills so as to be able to report the status of ▪ production, challenges faced and recommendations to top level management ▪ Excellent communication skills so as to effectively interact with workers on daily targets, production techniques, quality issues, etc. ▪ Ability to manage labour issues and keep workmen motivated. ▪ Ability to handle crisis and take corrective actions in case of quality issues such as mishandling of goods in plant and output not conforming with requirements	▪ Inadequate / restrictive motivational skills ▪ Inadequate documentation skills / not conversant with e-reporting / working on computers
Floor level (illiterate to 10th pass)	▪ Ability to visually examine fruits / vegetables and separate rotten fruits / vegetables ▪ Basic reading/writing skills for understanding the standard operating procedures ▪ Ability to be conversant with basic measurements so as to understand customer requirements as given in company documents ▪ In the case of manual operations, the ability to appropriately size/dice as well as	▪ Inadequate knowledge of operations resulting in wastage ▪ Inadequate ability to undertake dicing / slicing at the entry level ▪ Lack of interest and knowledge in tracking the productivity and improve the same over a period of time

Role, educational qualification	Expected competency	Skill gaps
	the ability to make end produce visually appealing is critical ▪ Knowledge of procedures, sequence of steps / machines and the ability to adhere to the same at all times ▪ Ability to operate machines and set parameters such as temperature, running time of machines specific to process requirement.	
Quality control executive (Graduate in food science / food technology and with experience in Food processing industry)	▪ Ability to conduct visual examinations and identify unacceptable colour / flavour of the fruits procured ▪ Ability to undertake chemical analysis and assess PH levels vis-avis the requirement, chemical requirements and biological requirements.	▪ Inadequate ability to apply technical expertise and procedural knowledge in actual work situations, especially at the entry level.
Sales and Marketing Manager (Graduate/ Post graduate in any stream and with experience in Food processing industry)	▪ Good communication, documentation and coordination skills, especially important for personnel working in companies that have export operations ▪ As products in this segment (such as juices, ketchup) differ with ingredient and proportion of mix, it is important to have adequate knowledge of such parameters. ▪ Ability to gauge the customer's requirement and design different SKUs	▪ Inadequate ability to articulate views ▪ Inadequate ability to understand changing customer preferences, and understand demand for new products.

Role, educational qualification	Expected competency	Skill gaps
	and innovative packaging for fulfilment of varied customer needs depending on income, consumption level, etc.	
Procurement manager (Pre university to Graduate in any stream and experience in Food processing industry)	▪ Excellent communication skills to be able to interacts with farmers and conduct training/educate them about the produce handling methods, pre processing techniques, the demand driven choice of fruits/ vegetables to be grown etc. for them ▪ Ability to coordinate with sales teams and farmers equally well so as to close the communication loop and help attain the required production levels	▪ Inadequate knowledge and ability to educate farmers on demand, advice on farming and wastage reduction. ▪ Inadequate communication skills to be able to motivate farmers for better quality and higher productivity

Source: IMaCS Analysis

Food Processing - Sugar

Sugarcane is the major commercial crop grown in the district. As of march 2010, the district had a total cultivable area of 43,247 hectares under sugarcane crop. There are three large sugar industries in the district namely Nandi Sahakari Sakkare Kharkane Niyamit, Dyanayogi Shri Shivakumar Swamiji Sugars Limited and Indian Sugar Manufacturing Co. Ltd. These are the only large and medium scale industries in the district. As of march 2011, these industries have invested around Rs. 195 crore and employ around 1630 direct employees. There are also many other people depending on the sugarcane industry in the district such as farmers, contract and seasonal labours. Sugar industry is one of the major economic activities in the district.

There are also plans of expansion in existing industries and addition of new sugar plants in the district. The district is expected to have 10 large and medium scale sugar industrial units by 2014[15]. In the Global Investors Meet (GIM) 2012 conducted in Karnataka, 11 sugar industries signed Memorandum of Understanding (MoU) amounting to Rs. 1,765 crore for the district. There is huge potential for sugar industries in the district.

The workers for the sugar industries are recruited locally in the district. These people lack certain skills required for the industry. The workers join as helpers/trainees initially and are assigned to a senior worker. They learn through experience and start to work independently after some time (one year). The skill gaps in sugar industry are explained below in Table 136 .

Figure 78: Value chain of sugar industry in Bijapur district

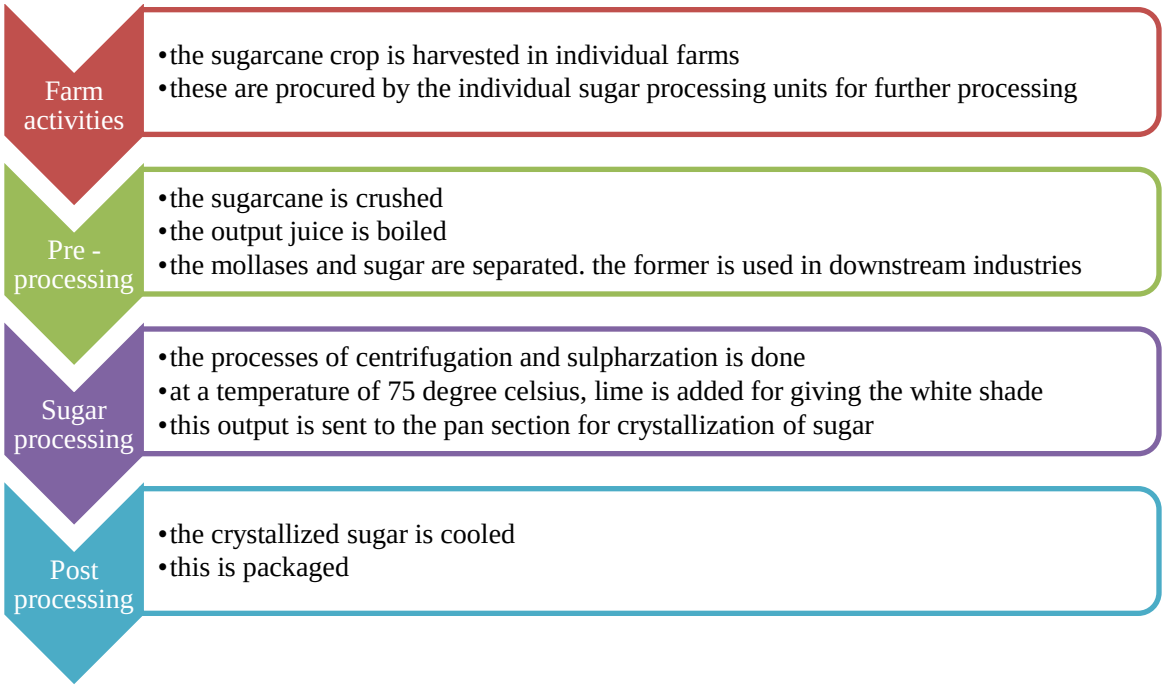


Table 136 : Skill gaps in Sugar industry in Bijapur district

Role, educational qualification	Expected competency	Skill gaps
Input Department /	▪ Delivering weighed cane on feeder table ▪ Feeding cane to cane carrier	▪ Inability to use latest equipments

[15] Source: District Industries Centre (DIC), Bijapur

Role, educational qualification	Expected competency	Skill gaps
Cane Department (illiterate to ITI pass outs)	▪ Passing cane through cane preparatory devices such as leveller, chopper, cutter and shredder and the ability to operate all these machines ▪ Loading cane to the engineering department	▪ Inability to calculate the required cane for desired output level
Engineering Department and Processing Department (SLCC pass outs, ITI pass outs, diploma holders and a few mechanical engineers)	▪ Passing prepared cane through four mills in series where juice is extracted and the residue (bagasse) is conveyed to boilers ▪ Ability to burn the bagasse in boiler to produce super-heated steam ▪ Ability to use super-heated steam to produce electricity in high pressure turbines in power house ▪ Transfer of juice to juice sulphiter through primary juice heater which heats the juice to 70 degree Celcius. ▪ Knowledge of adding adequate quantities of sulphiter milk of lime and sulphur di-oxide gas so that the reaction can take place ▪ Ability to maintain the pH at 7.0 to 7.1. ▪ Knowledge of treating the juice again at 103 degree Celcius in secondary juice heaters ▪ Sending the heated juice to clarifier for settling the precipitates ▪ Ability to pump the clear juice from the clarifier to quintuple effect evaporator where 80% of water is evaporated and thick syrup is delivered to syrup sulphiter, where SO^2 gas is	▪ Inability to use latest machines ▪ Inability to follow supervisors' instruction ▪ Inadequate knowledge about heating the sugar juice at desired temperature level at different stages of processing ▪ Inadequate knowledge about various types of sugar and processes for each type ▪ Inability to consistently follow standard safety procedures

Role, educational qualification	Expected competency	Skill gaps
	passed and pH is maintained at 5.0 ▪ Boiling the syrup in vacuum pans to produce sugar crystals ▪ Separation of sugar crystals and mother liquor (molasses) ▪ Ability to obtain sugar by centrifugation of massecuite, which is then dried, graded and sent to bins for bagging	

Source: IMaCS Analysis

5.2. Tourism Industry

Bijapur district has numerous historical monuments. Historically, Bijapur was the capital of the Adil Shahi dynasty. There are scattered ruins of Muslim architecture which were built around 15th to 17th century are found in Bijapur. These form some of the important tourist attractive places in the district. The famous tourist places at Bijapur district are as follows:

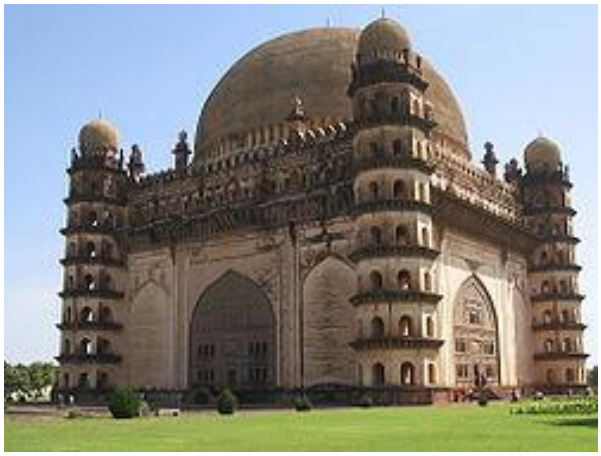
Table 137 : Tourist attractions in Bijapur district

Tourist Place	Particulars
Gol Gumbaz	This famous monument, built in 1659, is the tomb of Mohammed Ali Shah. Its vast dome is said to be the world's second largest dome next to St. Peter's Basilica in Rome. There is a whispering gallery in the monument, where a minute sound can be heard clearly 38 meters away. Also, in the central chamber of the monument, every sound made is echoed seven times.
Ibrahim Rouza	This is the tomb of Ibrahim Adil Shah II. Built on a single rock bed, it is noted for the symmetry of its features. It is said that the design for the Ibrahim Rauza served as an inspiration for that of the famous Taj mahal.
Jumma Masjid	This masjid is built by Ali Adil Shah I is one of largest Mosque in the region. It has a large hall, elegant arches, and an excellent dome with thirty-three smaller domes surrounding it.

Tourist Place	Particulars
Malik-e-Maidan	This is the largest medieval cannon in the world. Being 4 m long, 1,5 m in diameter and weighing 55 tons, this gun was brought back from Ahmadnagar in the 17th century as a trophy of war by 400 oxen, 10 elephants and tens of men. It was placed on the Sherza Burj (Lion Gate) on a platform especially built for it.

There are also other famous tourist places such as Uppali Buruj, Chand Bawdi, Gagan Mahal, Basanta vana Shiva statue.

(Gol Gumbaz is a ticketed monument and maintained by Archaeological Survey of India (ASI))



Gol Gumbaz

Ibrahim Rouza

The various activity of a tourist is explained below in Figure 79.

Figure 79: Tourism supply chain

Table 138: Skill gaps in Tourism sector in Bijapur district

Role, educational qualification	Expected competency	Skill gaps
Guide (10th pass to Pre University)	▪ Good communication skills ▪ Ability to manage customers ▪ Verbal fluency and familiarity with languages ▪ Decision making skills ▪ Knowledge/awareness of the places, people and culture ▪ Behavioural knowledge ▪ Crises management ▪ The knowledge of general decorum	▪ Inadequate communication skills ▪ Insufficient knowledge of tourist places ▪ Inadequate skills of crises management and time management Presently, there are no specific institutes in the district, which provide tourism specific training. However, as tourism industry picks up in the district in the next few years, demand for skilled tourism personnel is expected to increase.
Driver (illiterate to 10th pass with a valid driving license)	▪ Ensuring safety of passengers ▪ Awareness on driving rules and regulations ▪ Familiarity with routes ▪ Ability to communicate and being sensitive to tourists ▪ Awareness on various hotels and other locations in the travel route. ▪ Knowledge of first aid ▪ Knowledge of English ▪ Understanding the traveler's requirements in terms of location preferences and acting accordingly.	

Source: IMaCS Analysis

6. Recommendations

Recommendations for Bijapur district focuses on food processing and tourism industries. These industries have employment generation potential and also facing skill gap of manpower in their

respective industries. Some of these sectors have recommendations for private players where training needs to given to upgrade the skills required and the others will need government intervention where improvement in facilities is required or training by private players is not viable.

Bijapur district has a significant percentage of employment is concentrated in agriculture, thus, major up-skilling can be done for those workers, updating them of latest techniques of farming. This will help them improve their livelihood opportunities and will increase their income levels. While the detailed recommendations follow, summary is given in the table below

Table 139: Key recommendations for Bijapur - Summary

Sector	For Government	For private players	For Industry
Food Processing / Agriculture and allied activities	▪ Department of Horticulture can provide training on various horticulture crops ▪ Government should also help in marketing the products of farmers ▪ Support in providing irrigation facilities	▪ Provide training on food processing ▪ Training can focus on horticulture crops, process involved in food based products, preservation methods, etc.	▪ Set up food processing units in the district ▪ Can tie up with training providers for training employees ▪ Can aid farmers through contract farming ▪ Can train farmers on modern farming methods, various irrigation techniques, etc.
Tourism, Travel, Hospitality and Trade	▪ Promote tourism industry by improving the infrastructure facilities	▪ Training on various job roles in tourism industry such as travel operators, guides, staffs in	▪ Set up hotels, restaurants and hospitality establishments ▪ Travel operators

Sector	For Government	For private players	For Industry
	▪ Training through department of tourism	hospitality establishments ▪ Tie up with industry players in the sector placements	can promote heritage tourism ▪ Build infrastructure in the tourist place along with department of tourism through PPP model

6.1. Food Processing / Agriculture and allied activities

➢ **Food Processing – Horticulture Crops processing**

As of March 2010, district had 2,140 food and intoxicants based SSIs, employing 10,342 workers. This was the highest number of units and employment under any category in SSIs in Bijapur. Agriculture is the important sector of the district and major contributor to the economy. The district is also rich in horticulture crops such as pomegranate, grape, lemon, etc. Availability of various horticulture crops (fruits, vegetables, garden crops) makes this place a potential centre for food processing industry.

Government

Government has already taken a step by proposing a Food Park in 2010 for the district. The Food Park is expected to have units involved in production of wine from grapes, processing of fruits (pomegranate, mango, citrus fruits, banana, etc. to produce fruit squashes and syrups, fruit jams, etc.) and sorting, grading and packing of various fruits and vegetables for organized retail market. The project is estimated to cost Rs 23.84 crore and will commence operation by 2013. Some of the additional measures that need to be taken by the Government are as follows:

- Monitor the development of the Food Park and ensure it commences on time
- Department of Horticulture may train people on various horticulture products
- Specific product based training such as juice making, jam, syrups, etc

Government should also help the farmers in marketing the products processed by them. There are large organisations competing in the food processing industry and the local farmers may not be able to compete with them and sell their products. Therefore, marketing aid can be provided to these farmers.

Private players

Demand for skilled persons in food processing industry is believed to increase in the district with the establishment of a food park. Therefore, the private training providers can involve in providing training to the persons according to various job roles in the food processing industry. The training can be given on:

- Knowledge of horticulture crops
- Preservation methods of various fruits and vegetables
- Processes of fruit/vegetable based products such as jam, fruit squash, pickles, etc.
- Sorting, grading and packing
- Usage of preservatives

These training providers should have interaction with industries for understanding their requirement and provide training accordingly. This would help the trainees in getting placed in the food processing unit on completion of training.

Industry

New industries can start their units in the proposed food park in the district. The food park is believed to have facilities for industries on production of wine from grapes, processing of fruits (pomegranate, mango, citrus fruits, banana, etc. to produce fruit squashes and syrups, fruit jams, etc.) and sorting, grading and packing of various fruits and vegetables for organized retail market. The district has a good supply of horticulture crops. Therefore, any industry operating on these above mentioned space can expand their operations by setting up a unit. They could enter into a tie up with training provider for training the manpower required for the unit. Job specific training can be provided by training providers on consultation with the industry players.

- **Food Processing – Sugar industry**

Sugarcane is the major commercial crop grown in the district. There are three large sugar industries in the district and the region is expected to add some more sugar based industries. The industry does not

face major skill gaps and are able to locally recruit the people at worker level. However, government intervention may be required at the farming level. When the new sugar based industries are established, private players can establish a training institute by making a tie up with them and provide training according to the demand. This can ensure placements of students as well.

Government

The Government (Department of Agriculture) can take measures at the farming level. It can aid the farmers through the following:

- Training on best farming practices to be followed
- Provide support on irrigation facilities
- Education on fertilizers and pesticides to be used

The above mentioned training can be given to the farmers through the existing schemes by the Government. District Agricultural Training Institute conducts training program for farmers on district agricultural status. The above mentioned training can also be included in the existing program.

Industry

Most of the sugar industries in the district have direct relationship with the farmers through contract farming. These industries can conduct training program to the farmers. This is also beneficial to the industries as it could improve the productivity of the farmer and yield would be high. The training can be given on:

- Modern farming
- Irrigation techniques (example: Drip irrigation)
- Modern equipments used in farming
- Usage of fertilizers and pesticides

For the employees in the sugar industry, on the job training is provided. Also periodical training on safety measures are provided by the prominent sugar industries in the district. These are some of the best practices followed and should be followed across the players in the industry.

6.2. Tourism, Travel, Hospitality & Trade

Bijapur district has numerous historical monuments. There are scattered ruins of Muslim architecture which were built around 15th to 17th century are found in Bijapur. These form some of the important tourist attractive places in the district such as Gol gumbaz, Ibrahim Rouza, Jumma Masjid, etc. Gol Gumbaz is a ticketed monument and maintained by Archeological Survey of India (ASI). There are many tourists visiting these places. Tourism industry requires trained and skilled workforce.

Government

Government can aid tourism industry by improving the infrastructure facilities in the district. The district does not have adequate infrastructure facilities like good roads and rail connectivity to major cities and towns. Government can take measures on that aspect and encourage this sector. Department of Tourism has taken initiative and has invited bids for development of a resort/hotel and family recreation centre through Private Public Partnership (PPP) model. Such measures can improve the number of tourist footfalls in the region and increase the scope for employment generation in the sector.

Department of tourism can also scale up the process of training in various job roles for the sector. It can also involve in promoting the tourism industry for the district with the help of state government. Promotional events like annual cultural fest, light show or musical show can be conducted at the historical attractions to attract the crowd and increase the number of tourists in the district.

Private players

New training centres can be formed in the region and can tie up with the hospitality establishments and travel operators. They can provide need based training for various job roles in tourism sector and up skilling can be done for existing employees. Some of the focus areas in training are listed below.

Table 140: Training required in Travel, tourism and hospitality - Bijapur

Functional role	Training required
Travel and Tour Operator	1. Communication and language skills (ability to speak multi languages such as English, Hindi and few regional languages) 2. Training on various routes and transportation mode available 3. Ticketing knowledge (online reservations)

Functional role	Training required
	4. Knowledge on various rules and regulation in dealing with foreign tourists. (formalities with regard to passport and visa) 5. General behavioural training
Guide	1. To speak multi languages 2. Knowledge about historical monuments in the region 3. Travel routes to reach various destinations 4. Emergency activities such as first aid 5. General behavioural training
Hospitality	1. Cooking of various cuisines 2. Food presentation and serving 3. Hygiene and Cleanliness 4. Housekeeping

Industry

Tourism has good potential in the district. There are opportunities for private players to establish in this sector. Bijapur is part of the North Karnataka Heritage Tourist Circuit consisting Badami, Bijapur, Gulbarga and Bidar. Bijapur is located in middle of these places and tourists can set the city as their base for visiting various sites. The city has links with Badami and Gulbarga. The below map shows tourist attractions in Bijapur and nearby regions.

Among all the tourist attractions mentioned, Gol Gumbaz in Bijapur is the most visited tourist destination in the region. The total number of visitors to Gol Gumbaz in 2011 was 11,28,289, including 11,25,985 domestic and 2,304 foreign visitors[16]. Since majority of the tourists turn out for Bijapur, hospitality establishments needs to be developed. The city currently has inadequate number of good hotels and restaurants. Star hotels and resorts can be built up in the region. Restaurants with multi cuisine facilities also need to be established. Skilled manpower will be required for hospitality establishments. Industry players can build hotels, resorts, restaurants, etc. in the tourist spots. Also, travel operators have a good scope in the district as the tourist can set their base in the Bijapur city and can connect to various other tourist places.

Department of Tourism has taken the initiative of building resorts and other basic amenities in the popular tourist attraction centres in PPP model. Private players can participate in these initiatives and can improve the infrastructure in the tourist places.

[16] Source: Department of Tourism

3.8. CHAMARAJANAGAR

1. Introduction

Chamarajanagar district is the southern-most district of Karnataka. It was carved out of the Mysore district in 1998. It is bordered by Mysore district of Karnataka, Erode district of Tamil Nadu and Wayanad district of Kerala. It is one of the most backward districts of Karnataka.

The district has a total land area of 5,699 sq. km., which is 2.97 per cent of the total State area. It has four sub-districts, namely Chamarajanagar, Kollegal, Yelandur and Gundlupet taluks. The population of the district at just over 10 lakh people is the lowest amongst all 30 districts of Karnataka.

Close to 85 per cent of the district population is in rural areas. Agriculture is the main occupation, employing 71 per cent of the labour force (as of Census 2001). The remaining is in household industry (four per cent) and other workers[17] at 25 per cent. Maize is the key crop grown in the district, occupying close to 17 per cent of the total cropped area.

The district is one of the most industrially backward districts of Karnataka. However, it is rich in mineral resources, especially black granite, which is very high value granite. The district also has very high potential for tourism as it is home to many hill stations and religious places. The district itself does not have many job opportunities. Thus, the people benefit by the district's proximity to Mysore district, which is more developed.

[17] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

Table 141: Comparison of Chamarajanagar district with Karnataka – key indicators

Indicator	Year	Chamarajanagar	Karnataka
Area, in sq.km.	2001	5,699	191,791
Percentage share in State geographical area, %	2001	2.97%	100%
No. of sub-districts	2011	4	175
No. of inhabited villages	2001	424	27,481
No. of households	2001	203,430	10,401,918
Forest area as a % of total geographical area	2001	48.36%	13.90%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Chamarajanagar district has a population of 10.2 lakh persons – 1.6 per cent of the State population. Majority of the population at 35 per cent each is concentrated in Chamarajanagar and Kollegal talukas, followed by 22 per cent in Gundlupet taluka and the remaining eight per cent in Yelandur taluka. While 65.7 per cent of the population in the district is in working-age group (15 to 64 years), about 46.4 per cent is actually working i.e. work participation rate. Voluntary and disguised unemployment is very high in the district.

The district's literacy rate is 61.1 per cent, which is quite low as compared to the State average of 75.6 per cent. Male literacy at 67.8 per cent is significantly higher than female literacy rate at 54.32 per cent. Of the 30 districts, Chamarajanagar district ranks 10th on Gender Development Index (GDI), with a value of 0.528.

Most of the population (84 per cent) lives in rural areas. In fact, as mentioned earlier, agriculture is also the main occupation of the people of the district, employing 71 per cent of the labour force as either cultivators or agricultural labourers.

Table 142: Key demographic indicators

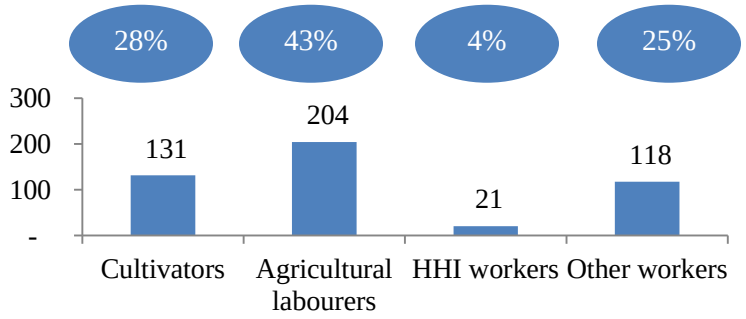
Indicator	Year	Chamarajanagar	Karnataka
Population, No.	2011	1,020,962	61,130,704
Decadal growth rate of population, %	2001-11	5.8%	15.7%
District's share in State's population, %	2011	1.7%	100.0%
Urban population as a percentage of total population, %	2001	15.3%	34.0%
SC population, %	2001	24.6%	16.0%
ST population, %	2001	11.0%	7.0%
Sex ratio, No. of females per 1000 males	2011	989	968
Population density, per sq. km.	2011	200	319
Literacy rate, %	2011	61.1%	75.6%
Main workers, No.	2001	336,961	19,364,759
Marginal workers, No.	2001	111,408	4,170,032
Working age population* as a percentage of total population, %	2001	65.7%	63.0%
Work participation rate^, %	2001	46.4%	45.0%
HDI	2001	0.576	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 4.74 lakh persons. Of this, 28 per cent are cultivators, 43 per cent are agricultural labourers, four per cent are workers in household industry and 25 per cent are other workers.

Figure 80: Chamarajanagar district's worker profile, as of 2011, in thousands



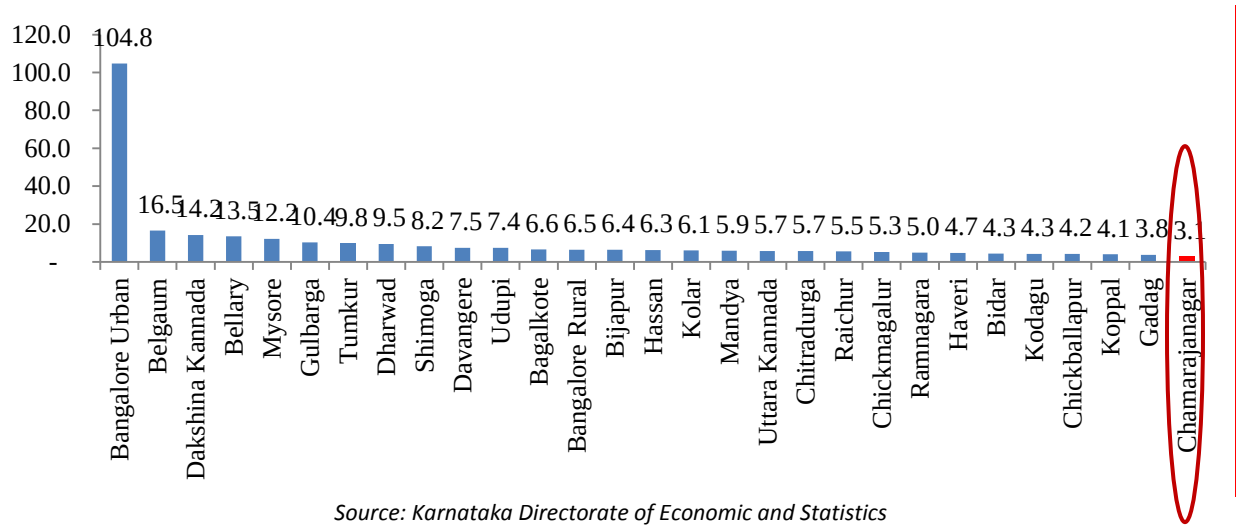
HHI: Household Industry

Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Chamarajanagar district had the lowest Gross District Domestic Product (GDDP) in Karnataka at Rs 3,079.20 crore. Its per capita GDDP was Rs 29,098, much lower than the State average of Rs 53,101.

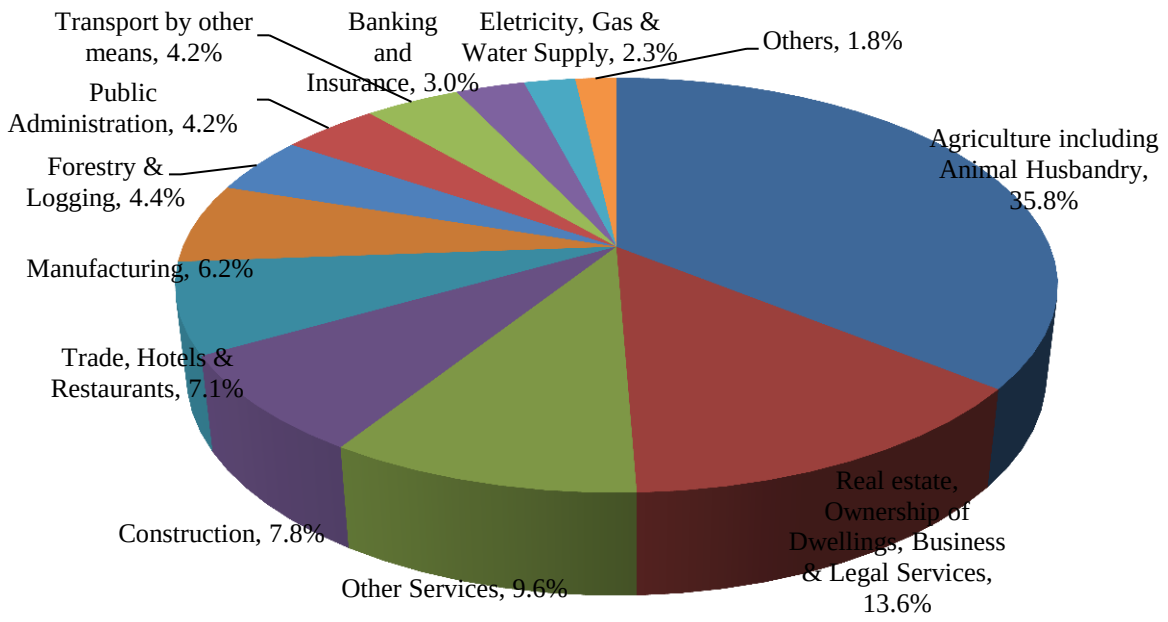
Figure 81: Gross District Domestic Product, in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 46 per cent in 2008-09. This is followed by primary sector at 33 per cent and secondary sector at 21 per cent.

Figure 82: Sector wise distribution of Chamarajanagar's GDDP, as of 2008-09, 100% = Rs 3,079.20 crore



Source: Karnataka Directorate of Economics and Statistics

Agriculture: Of the total area of 5,699.01 sq. km. in the district, about 33 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of maize. For details of crops grown in Chamarajanagar district, refer to annexures.

Industry: The district is one of the most industrially backward districts in Karnataka. As of 31st December 2011, it had only three large and medium scale industries, employing 235 persons only. For details, refer to annexures. However, many Small Scale Industrial (SSI) units exist. As of March 2010, the district had 8,469 SSIs, employing over 35,000 persons. Majority of the SSI units were textile based – accounting for 35 per cent of SSI units and 42 per cent of employment under SSI. For details, refer to annexures. The district has three industrial estates, developed by KIADB, totalling 20 acres. For details, refer to annexures.

Chamarajanagar district has made a beginning in attracting industrial investments the Global Investors Meet (GIM) 2012 held in Karnataka in June 2012, three MoUs / Expressions of Interest / Registrations of

Interest were signed for Chamarajanagar district. These have a proposed investment of Rs. 320 crore. These are spread over energy and tourism sectors. For details of these projects, refer to annexures.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 46 per cent of GDDP in Chamarajanagar district. Of all the services, the key service in the district is of 'real estate, ownership of dwellings, business and legal services' at 13.6 per cent of GDDP.

2.3. State of education

As of March 2010, Chamarajanagar district had 1,160 schools, with 142,402 students enrolled. There are 54 pre-university (PU) colleges with 7,860 students. There are also 15 general colleges, one polytechnic (for technical education) and one engineering college. For details of courses offered by polytechnics, refer to annexures.

Table 143: School education infrastructure in Chamarajanagar district, as of March 2010

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Govt.	386	49,301	394	20,840	84	22,132
Aided	6	7,394	33	3,277	37	9,312
Unaided	42	14,691	70	4,138	62	7,742
Others*	18	1,523	15	930	13	1,122
Total	452	72,909	512	29,185	196	40,308

*Source: DISE 2010-11; *Others include social welfare, local body, other management schools, and central schools.*

Table 144: Higher education infrastructure in Chamarajanagar district, as of March 2010

Colleges	No.	Students
PU Colleges	54	7,860
General	15	4,393
Polytechnic	1	691
Engineering	1	621

Source: Chamarajanagar District At a Glance 2009-10

For vocational training, Chamarajanagar district has a total of 15 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, three were Government ITIs, three were private aided ITIs and remaining three were private unaided ITIs. All the 15 ITIs together have a seating capacity of 1,575.

Table 145: Key ITI indicators in Chamarajanagar district, as of March 2012

Indicator	Value
Total Number of ITIs	15
Number of Government ITIs	3
Number of Private aided ITIs	3
Number of Private unaided ITIs	9
Total Seating capacity	1,575
Student pass rate	>85%
Student drop-out rate	5-10%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Chamarajanagar district, we have found that on an average, of all the students that pass out from an ITI in each year, 90-100 per cent find jobs in the market. For details on courses offered by ITIs in Chamarajanagar, refer to annexures. ITI students are taken for apprenticeship by companies such as BHEL, BEL, Toyota, AT&S etc.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions. Within Government, District Rural Development Agency (DRDA) is actively involved in administering several training programmes to the people in the rural areas. Training is provided to Self-Help-Groups (SHGs) on trades such as animal husbandry, tailoring, banjara kasuti hand-work, carpet making, seasal fibre making, soap powder and spices manufacturing, carpentry, agarbatti and candle making, fancy potteries, nursing and honey making / rearing. Training for tourist guides is also provided by the Department of Tourism in the district.

The private training institutes are offering courses in teacher's training, nursing, computers, and office administration. For details of courses offered by private training institutes in Chamarajanagar district, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Chamarajanagar district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- Syllabus taught in training institutes is out-dated and should be updated.
- There is shortage of faculty, especially in Government training institutes.
- First preference is for Government jobs, such as electricians in KEB. Second preference is to work in Multi-National Companies (MNCs) such as Toyota.
- Expect a starting salary of at least Rs. 10,000 per month.
- Over 50 per cent of the students want to go for higher studies.
- Over 80 per cent of the students wish to move out of the district. Majority wants to relocate to Bengaluru.
- Want more training institutes teaching courses such as automobile, COPA, mobile servicing, animation, cutting and tailoring, beautician courses etc. Preference is to learn all these courses from Government institutes.
- There is very high demand for English speaking courses.
- Preference is to learn courses from ITIs, followed by polytechnics as compared to colleges, as job opportunities are better with former.
- Face water and power shortage and lack infrastructure for sports and hostels.
- Many students drop-out due to conveyance problem, poor family backgrounds and lack of interest in studying.

3. Developmental concerns

Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Water shortage:** Chamrajnagar is one of the dry districts of Karnataka, which is facing a severe water crisis. Water shortage is one of the key reasons why district has lacked industrial and other development. Ground water levels are depleting fast. The water level at bore-wells in many villages has gone down considerably, leaving little water for people to even drink. Even surface irrigation facilities are not available. Lifting irrigation has been proposed, in which water

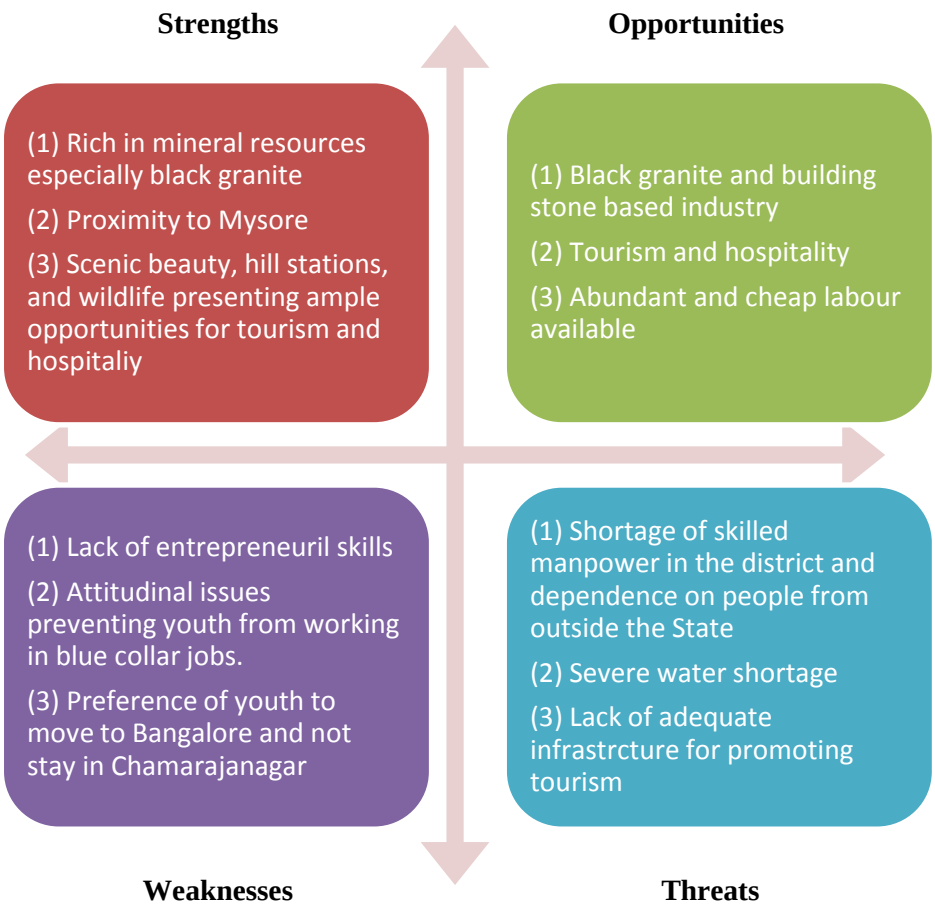
is proposed to be lifted from Kabini dam, which is 70 km away. However, it has been on the back burner for the last many years.

- **Unwillingness of people to undertake manual work:** Based on our interactions with several stakeholders, we have found that there lack of willingness in people to undertake manual or blue collar jobs. Even for doing skilled works in the district, people are brought from Tamil Nadu and as far as even Rajasthan. People in the district lack opportunities and awareness about job opportunities as many areas are completely backward. The unemployment rate in district is also very high. According to informal estimates, it's about 30 per cent. It is voluntary, involuntary and disguised.

SWOT analysis

Based on the diagnostics of the Chamarajanagar district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 83: SWOT Analysis of Chamarajanagar district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 1.46 lakh persons is likely to be generated in Chamarajanagar district.

Travel, tourism and hospitality has the maximum potential in the district and is likely to provide employment opportunities to many. This will be followed by agriculture and allied activities, which will continue to be one of the biggest employment providers in the district. Within agriculture and allied, thrust will be on the allied activities such as animal husbandry, dairy, poultry and horticulture. There is also scope for textiles and clothing, as the district is closer to Mysore and Bengaluru. In addition, as the

economy grows, demand for supporting infrastructure such as health and education is also expected to increase.

Table 146: Incremental demand in Chamarajanagar – 2012 to 2022

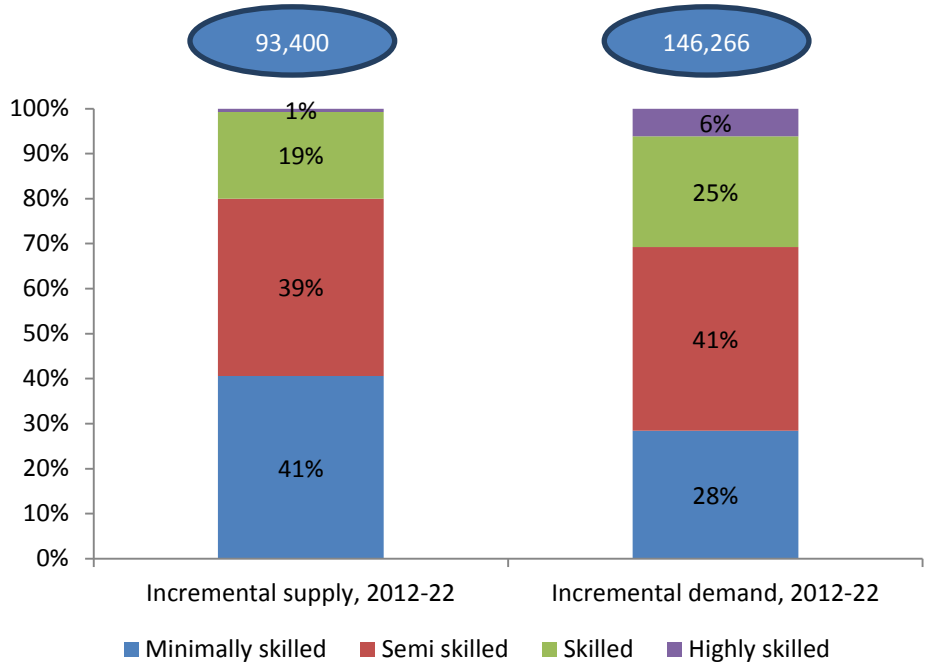
SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	37,787	31,471	4,704	856	756
BFSI	2,786	-	1,672	836	279
Building, Construction industry and Real Estate	11,182	3,355	5,591	1,677	559
Chemicals & Pharmaceuticals	122	24	37	37	24
Construction Materials and Building Hardware	694	69	451	139	35
Education and Skill Development	5,553	-	-	4,998	555
Electronics and IT hardware	104	10	52	36	5
Food Processing	870	261	261	261	87
Healthcare Services	11,187	-	1,119	7,831	2,237
Textile and Clothing	5,959	1,192	3,575	894	298
Transportation, Logistics, Warehousing and Packaging	5,430	1,086	3,149	1,086	109
Tourism, Travel, Hospitality & Trade	63,285	12,657	43,034	6,329	1,266
Unorganised	1,159	232	672	232	23
Total	**146,266**	**50,395**	**64,394**	**25,236**	**6,240**

Source: IMaCS Analysis. Note: Numbers for sectors will not add up to the total due to very small numbers accounted for by sectors such as auto and auto components and furniture and furnishings.

The incremental supply of work-force between 2012 and 2022 is estimated at 93,400 persons. This will fall short of demand, if the tourism sector in the district realizes it's potential. If that happens, many people will be required in that sector and district's education and training infrastructure will not be sufficient to meet the demands of the industry, thus creating a shortage. Currently also, most of the manpower for tourism and hospitality sector in the district is sourced from outside the district only.

Also, the supply at minimally skilled level is more than the demand for the same. Thus, these people need to be trained so that they can fill the gaps at the semi-skilled, skilled and highly skilled levels.

Figure 84: Skill wise incremental demand and supply in Chamarajanagar district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on our field surveys in Chamarajanagar district, we have found out that sectors where skilling interventions are required are mainly agriculture and allied, tourism, travel and hospitality, and mining and quarrying of black granite. New jobs are likely to be generated in agriculture allied sector and tourism, travel and hospitality sectors. However, interventions in mining sector are also required as currently jobs in the mining and quarrying sector are being filled by the people from outside the district, as the people within the district lack the required skill set.

Table 147: Sectors where interventions are required in Chamarajanagar– comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Chamarajanagar	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		

High Growth Sectors identified by NSDC	Chamarajanagar	Karnataka
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		
Additional sectors	**Chamarajanagar**	**Karnataka**
Mining & Quarrying (Black Granite)		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 148: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Tourism, Travel, Hospitality & Trade	√	√	√
Mining & quarrying (Black granite)			√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Tourism, Travel, Hospitality & Trade

Chamarajanagar district is a nature's haven and known for its hill stations, wildlife and scenic beauty. The district has three to four hill stations. Prominent tourism spots include M.M. Hills, B.R. Hills, K.

Guddi, Gopalaswamy hills, Bandipur, Hogenakkal falls, Kanakagiri, Bharchukki and Hulugan Murudi. During the year 2011, over 40.6 lakh tourists visited in the district.

About 50 per cent of the district area is forested, thus there is immense potential for eco-tourism, rock climbing, river rafting etc. However, the tourism potential is yet to be tapped in the district. There is lack of basic tourism infrastructure such as good road connectivity and hotels. The tourism potential in the district is estimated at about Rs. 300 crore[18]. To achieve the potential, skill development programmes need to be conducted.

Currently, there is only one three star hotel in Chamarajanagar –Nijaguna Residency. It is getting people from Bengaluru and Mysore for working in the hotel, as it is not able to find the people with requisite skill sets within the district. Shortage of people in housekeeping, catering and gardening etc. is being faced.

Famous tourist attractions in Chamarajanagar district

[18] NABARD estimate.

Table 149: Skill gaps in Tourism, Travel, Hospitality & Trade in Chamarajanagar district

Role, educational qualification	Expected competency	Skill gaps
Tour operators / travel guides (illiterates to 10th pass, currently trained by the Department	• Market understanding • Ability to brand • Event management • Route planning and optimisation • Excellent sales and marketing • Ability to develop attractive pricing strategy • Ability to liaison with airline, hotels and	• Lack of market understanding • Lack of soft skills • Inability to network with customers and allied entities • Poor customer service quality

Role, educational qualification	Expected competency	Skill gaps
of Tourism)	local community • Ability to manage tourist expectations • Man management skills • Customer Relationship Management • Computer skills • Ability to speak in English	• Lack of computer skills • Inability to speak in English
Hotels – managers and other staff (caterers, housekeeping, gardening etc.) (Hotel management degree, any other degree and high school pass outs)	• Understanding of local language and English speaking skills • Customer relationship management • Excellent trouble shooting skills • Understanding of cultural differences • Understanding of hotel functions, including procurement of raw material, cooking etc. • Computer skills • Ability to maintain financial records • Ability to maintain business etiquette	• Poor English speaking skills • Lack of computer skills • Lack of soft skills • Lack of customer relationship management and allied services

Source: IMaCS Analysis

5.2. Mining and quarrying (mainly black granite)

Chamarajanagar district is rich in mineral resources, especially black granite. Building stone is also found in abundance. As of March 2012, the Department of Mines and Geology had given 58 leases for black granite in the district. Of this, 44 are currently active and remaining is idle. These leases cover a total area of 315.11 acres. Most of the quarries are privately owned. Government presence is minimal.

Majority of the quarrying work in district in limited to extracting blocks of granite; which are sold either domestically or internationally. About 10 to 15 per cent of the total produce is exported. The quantum of exports has come down over the years due to increasing competition from China.

The mining and quarrying activity is mainly concentrated in Chamarajanagar taluka, Gundlupet taluka and Kollegal taluka. Only about 10 per cent of the granite extracted is processed and polished. Remaining is sold in raw form to traders in Bengaluru, Chennai and even in North India.

Most of the manpower involved in granite mining and quarrying at 90 per cent, comes from Rajasthan and Tamil Nadu. The remaining 10 per cent are locals. People coming from Rajasthan and Tamil Nadu are primarily the skilled workforce. Locals are only involved in unskilled jobs such as loading and unloading. Most of the work is mechanised. However, people from Rajasthan have the know-how to run this machinery, which locals do not have.

Black granite extraction in Chamarajanagar district

Figure 85: Value chain in mining industry

Table 150: Skill gaps in mining and quarrying industry in Chamarajanagar district

Role, educational qualification	Expected competency	Skill gaps
Managers and Mine head (1st Class mines manager certificate from Directorate of Mine and Safety)	▪ Knowledge of regulatory and legal requirements, including corporate mining lease process ▪ Ability to maintain quality ▪ Quality control ▪ Knowledge of latest mining technologies and advanced machines ▪ Understanding of environmental implications of the mining process and strict adherence to laws ▪ Ability to supervise operations at a mine to keep them efficient and safe ▪ Ability to monitor workers and work conditions ▪ Ability to meet production goals	Presently, there are no specific institutes in the district, which provide mining specific training. Locals lack the skills to operate machines which are used in mining and quarrying. They also lack the willingness to work in the quarries. People from Rajasthan and Tamil Nadu are brought in the district to undertake this work.
Engineers (electrical, mechanical, auto)	▪ Knowledge of scientific methods of mining ▪ Ability to plan and direct the various engineering aspects of extracting minerals ▪ Conducting investigation of mineral deposits ▪ Preparing plans for mines, including tunnels and shafts for underground operations, and pits and haulage roads for open cut operations ▪ Preparing layout of mine development and the way minerals are to be mined ▪ Overseeing the construction of the mine and the installation of plant and equipment ▪ Ability to adhere to the mining regulations	

Role, educational qualification	Expected competency	Skill gaps
Supervisors (Diploma in electrical, auto, mechanical)	▪ Ability to supervise activities conducted in the department for which responsibility is entrusted. This could include crushing plant, mining, stores etc. ▪ Ability to train staff to operate the various large and small equipment used within mining operations ▪ Overseeing the safety of all workers ▪ Complete understanding of all safety regulations and ability to handle safety issues	
Fitters (experience based), Blasters and Drillers	▪ Ability to operate mining machines like dumpers, loaders and excavators ▪ Ability to drill using drilling machine ▪ Blasting skills ▪ Crushing skills	
Helpers / machinery attendants (High school pass)	▪ Ability to maintain machines ▪ Ability to help operators with their day to day functions ▪ Ability to problem-solve	

Source: IMaCS Analysis

6. Recommendations

As discussed in the report, Chamarajanagar is one of the most industrially backward districts in the State of Karnataka. In fact, out of 30 districts in the State, the district makes the lowest contribution to GSDP. Majority of the population at 84 per cent lives in rural areas, and over 70 per cent of people are employed in agriculture alone. The State as a whole is attracting huge investments from private players, the district, however, has made very slow progress on that front as well.

However, the district has the potential to grow beyond agriculture as well. This can be achieved if the opportunities in the district are properly capitalised upon. The two high growth opportunities which we have identified for the district are 'tourism and hospitality' and 'mining and quarrying'. The former arises from the natural wealth and beauty which the district has and the latter is based on its rich black granite resources. Thus, we have made recommendations which can lead to betterment of employment opportunities in both these sectors and can also address the skill gaps for the same. In addition, recommendations for agriculture and allied sectors are also made. While the summary of recommendations is presented in the Table below, the details are given in the subsequent sections.

Table 151: Key recommendations for Chamarajanagar district – summary

Sector	Government	Private training providers	Industry
Agriculture and allied	▪ Need to take immediate action on solving the water problem for the district ▪ DRDA needs to increase the scope and coverage of the schemes which it is currently running in the district	▪ n/a	▪ Scope for setting up a PPP with DRDA wherein private player can play the role of a marketing and selling agent for the products manufactured by the artisans in the rural areas
Tourism, Travel, Hospitality and Trade	▪ Department of Textiles to expand the scope and coverage of its existing programme on training youth into travel guides ▪ To focus on infrastructure creation in the district, mainly for hotels, last mile	▪ Set up training institutes for readying people for the hospitality industry ▪ Training for tourist guides and travel operators	▪ To set up hotels and resorts in the district in collaboration with the Department of Tourism ▪ Create facilities for eco-tourism and adventure tourism

Sector	Government	Private training providers	Industry
	connectivity for tourist spots and incentivizing private players who are interested in investing in tourism and hospitality in the district	▪ Training in adventure sports and eco-tourism	▪ Tying up with training providers for job assurance
Mining and Quarrying (Black Granite)	▪ DRDA to hold awareness campaigns for youth to join the mining and quarrying industry ▪ Enabling setting up of granite cutting and polishing units by providing seed capital to the rural needy	▪ n/a	▪ To set up granite cutting and polishing units in the district
Others	▪ To upgrade the syllabus, infrastructure and faculty in ITIs ▪ To address infrastructural issues ▪ To introduce training programmes based on market demand	▪ To train youth in sectors for which there is demand in Bangalore, as youth from Chamarajanagar have a high propensity to move to Bangalore for jobs	▪ Scope to set up call centres and garment based units

6.1. Agriculture and allied

The district is pre-dominantly agrarian and most of the people are employed in agriculture and allied activities alone. Thus, this section of the workers cannot be ignored. Within total workers as well, while 67 per cent of workers are main workers, the remaining 33 per cent are marginal workers. Marginal workers are those who had not worked for the major part of the reference period (i.e. less than six months). This set of people is especially vulnerable as they do not have full time employment opportunities and are either unemployed (disguised mostly) or under-employed. There is an urgent need to mobilise these set of people into other set of economic activities.

Government

People in the district are slowly moving away from agriculture, due to the perennial water shortage in the district. Lifting irrigation has been proposed, in which water is proposed to be lifted from Kabini dam, which is 70 km away. However, it has been on the back burner for the last many years. The Government needs to take immediate action on this to solve the water problem in the district, if agriculture has to survive.

In the meantime, action also needs to be taken for allied activities in rural areas. Presently, the District Rural Development Agency (DRDA) is actively involved in administering several training programmes to the people in the rural areas. Training is provided to SHGs on trades such as animal husbandry, tailoring, banjara kasuti hand-work, carpet making, seasal fibre making, soap powder and spices manufacturing, carpentry, agarbatti and candle making, fancy potteries, nursing and honey making / rearing.

There is a pressing need to increase the scope of such programmes and include more and more people in their ambit, as currently the coverage is low. More importantly, it is important to market the products manufactured by these people well. For that, marketing arrangements can be made, which can be enabled by tying up with private players. The products can then be based on market demand (which will be assessed by the private player) and the products will also be directly sold by the same entrepreneur. This will enable ready market for these people and ensure safe income stream.

Training provided by DRDA to people in the rural areas of Chamarajanagar district

Private training providers

There isn't much scope for private training providers to participate in the training programmes in the district, as it is not financially viable. People in the rural areas are poor and do not have the capacity to pay for training.

Industry

Private players can collaborate with DRDA to market the products made by the artisans in the rural areas. Once the marketing opportunities are in place, the people in the district will get a steady source of income. A PPP model can be explored, which will be a tie up between DRDA and a private selling / marketing agent.

6.2. Tourism, travel and hospitality

Chamarajanagar district has high potential in the tourism sector due to its natural beauty. It is endowed with many hill stations and wildlife. M.M. Hills situated in the district attracts maximum number of tourists, followed by B.R. Hills and Kanakagiri. The district is also home to the famous Hogenakkal falls. During 2011, over 40.6 lakh tourists visited in the district. The district has further potential for growth of eco-tourism, rock climbing, river rafting etc. However, all this potential is yet to be tapped. This is mainly due to a lack of basic tourism infrastructure such as good road connectivity and hotels. Also, there is shortage of skilled manpower in this sector in the district. Currently, hotels and resorts in the district are depending on manpower from Bengaluru and Mysore for working in their hotels. There is also shortage of staff for housekeeping, catering, gardening etc. Thus, skilling interventions need to focus on creating people with the required skill sets and also on creating enabling infrastructure for development of tourism in the district.

Government

The Department of Tourism has to play a dual role in the district by acting as a skill provider and also as an infrastructure provider:

- **Skill provider:** The Department of Tourism is currently providing a 25 day tourist guide training programme for SC / ST students. However, the numbers of tourist guides who are certified are not in sufficient numbers to address the market demand. The Department needs to ramp up the capacity of the programme by expanding the number of students to whom training is provided for becoming tourist guides. It also needs to increase the ambit of its training programme, to bring in non-SC/ST students also under its umbrella. The key skill which needs to be addressed through the tourist guide programme is the ability to speak fluent Kannada and English. While Kannada is not mostly an issue, English speaking skills are a constraint. Many tourists visit Chamarajanagar from outside Karnataka also and are not versed with Kannada and thus need assistance from English speaking people. Also, emphasis needs to be laid on improving communication and other soft skills.
- **Infrastructure enabler:** The Department of Tourism also needs to address the infrastructure gap in the district. Currently, there is a shortage of hotels and resorts in the district. There are a few home stays as well. However, they are not able to cater to the demands of the tourists. Due to lack of star hotels in the district, most of the tourists set their base in Mysore and make only day trip to the tourist spots in the district. This leads to loss of revenue generation opportunity for the district. Thus, the Department needs to place immediate focus on creation of hotel infrastructure in Chamarajanagar. Incentives can also be given to the private players who are interested in setting up hotels here. In addition, there is a need to improve last mile connectivity for the tourist spots in the district. Most of the tourist spots are completely untouched due to lack of accessibility by good roads. Thus, road infrastructure also needs to be emphasised upon. Last but not the least, there is a pressing need to spread awareness about the district as a tourism hub. While much publicity has been done about Mysore as an ultimate tourism destination in the district, similar publicity is required for Chamarajanagar also to bring it on par with places like Mysore. We recommend that publicity campaign could be organised for the same.

Private training providers

As discussed above, the district has immense potential for development of tourism and hospitality. Large numbers of people with requisite skills are required. Therefore, the responsibility for doing so shall not lie with the Government players alone. The private players can also join hands with the Government and tap this opportunity by opening up skill training institutes for this sector in the district. Presently, the district doesn't have any training institute providing training in this area. Such institutes can be started mainly in Chamarajanagar taluka and also in Gundlupet taluka. Given below are the key areas where training can be imparted:

- Hospitality related skills: mainly housekeeping, catering, cooks, gardening, cleaning and facility management
- Training for tourist guides
- Training for tour operators
- Key focus on English speaking, communication and soft skills
- Skills for eco-tourism, rock climbing, river rafting and other adventure sports
- Trainings to be a combination of skill development programmes and EDP

Industry

The district presents immense opportunity to set up hotel infrastructure for promotion of tourism. Some of the steps which can be taken by industrial players in the tourism and hospitality domain are:

- Setting up hotels and resorts in collaboration with the Department of Tourism; focus on Chamarajanagar and Gundlupet talukas.
- Tapping the opportunity in the eco-tourism and adventure sports domain in the district
- Tying up with private training providers and ensuring employment for the people trained. Collaboration can also extend to taking interns from the training institutes and giving them hands on training.
- Collaborate with Department of Tourism for promoting tourism in the district by holding publicity campaigns.

6.3. Mining and quarrying (black granite)

As discussed in the report, Chamarajanagar district is rich in mineral resources, especially black granite. Building stone is also found in abundance. Most of the manpower involved in granite mining and quarrying at 90 per cent, comes from Rajasthan and Tamil Nadu. The remaining 10 per cent are locals. People coming from Rajasthan and Tamil Nadu are primarily the skilled workforce. Locals are only involved in unskilled jobs such as loading and unloading. Most of the work is mechanised. However, people from Rajasthan have the know-how to run this machinery, which locals do not have.

Based on our discussions with the stakeholders, we found that locals are not interested in working in quarries. Also, since most of the work is mechanised, much skilling is not required in this sector. The area which can potentially be tapped in the district is setting up of granite cutting and polishing in the district. Presently, only granite blocks are extracted and further sent to other places such as Bengaluru and Chennai for processing. The activity is not carried out in the district, mainly for two reasons:

- Unwillingness of people to work in this industry,
- Shortage of water in the district

However, given the fact that there are limited opportunities in the district, opportunities such as this should not be missed upon and awareness should be spread into people to undertake this work.

Government

The main role to be played by Government in the mining sector in the district is to spread awareness among people to take up granite cutting and polishing as an occupation. Awareness is mainly needed on the following aspects:

- Granite cutting and polishing is not an inferior job
- The skill is easy to acquire and doesn't need much investment to learn
- The same granite which is sold in blocks, can be sold at a much higher price when it is cut and polished, leading to additional income generation

Such awareness can be spread through the DRDA. Government can also focus on providing seed capital to people who wish to open their granite cutting and polishing units. However, there should be stringent regulations and monitoring on to whom the assistance is provided, to avoid misuse of Government funds. In addition, Government must address the issue of water shortage in the district at the earliest.

Private training providers

There isn't much scope for private training providers to set up training capacity for mining and quarrying in the district.

Industry

There is scope for granite cutting and polishing units to set up factories in Chamarajangar district only, as the raw material is available there. This will save them the cost of moving the raw material from Chamarajanagar to other places.

6.4. Others

Some of the other recommendations are:

- Improvement and updation of syllabus in ITIs
- Frequent recruitment of teachers for filling in the gaps in the existing and upcoming vacancies
- Timely disbursement of budget for training institutes
- Demand for training institutes in additional areas such as automobile, computers, mobile servicing, animation, cutting and tailoring, beauticians, English speaking etc. Fee structure to be designed considering the lack of capacity of the people to pay for training
- Focus on solving infrastructural issues for the district, mainly water and power shortage
- Additional training can be provided to people in rural areas in trades such as jaggery making, sericulture, desiccated coconut etc.
- There is a need to hold Entrepreneurship Development Programmes (EDP) and provide people with skills so that they can start livelihood activities even with little sums of money
- Since Chamarajanagar is close to Bangalore, large numbers of people move to Bangalore for better job opportunities. Thus, capitalising on opportunities available in Bangalore, people in Chamarajanagar can be trained in sectors such as IT / ITES (mainly BPOs, call centres), textiles (mainly garments), tourism and hospitality and security guards.

Presently, training imparted by DRDA is based on what sectors people want to be trained it. This should be changed to make training programmes based on market demand. Training should be provided only on those products / services, which are in demand in the market. This only can lead to job and income creation.

3.9. CHICKABALLAPUR

1. Introduction

Chickaballapur district is one of the newly formed districts of Karnataka. It was carved out of Kolar district in the year 2007. It has six sub-districts, namely Bagepalli, Chickaballapur, Chintamani, Gudibanda, Gauribidanur and Sidlaghatta. Main economic centre of the district is Chickaballapur sub-district, which is just 50 km from the State capital Bengaluru. The district is also home to the famous Nandi-Hills, which is a famous weekend tourist spot for people staying in and around Bengaluru.

The district has a total land area of 4,254 sq. km., which is 2.2 per cent of the total State area. It is bordered by Kolar, Bangalore Rural and Chickaballapur districts of Karnataka and Anantapur district of Andhra Pradesh. It has a total population of 12.5 lakh people, which is just 2.0 per cent of the total population in Karnataka. It has the seventh largest population in the State as compared to 30 districts. Majority of the population at 80.8 per cent lives in rural areas. Agriculture is the main occupation, employing 70 per cent of the labour force (as of Census 2001). The remaining is in household industry (three per cent) and other workers[19] at 27 per cent.

The district is also known as the gateway to North Karnataka due to origin of several National Highways and is a regional transport and educational hub. It is rich in agriculture, horticulture and livestock

[19] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

resources. It is a famous producer of grapes and silk. Sericulture is one of the key economic activities in the district. It is mainly concentrated in the Sidlaghatta taluk.

Since the district is situated close to Bengaluru, many people in the district travel to the State capital on a daily basis for their employment and livelihood. Bengaluru is also the first preference for the district youth. The district, however, has not benefited much in terms of industrial development due to serious shortage of water.

Table 152: Comparison of Chickaballapur district with Karnataka – key indicators

Indicator	Year	Chickaballapur	Karnataka
Area, in sq.km.	2001	4,254	191,791
Percentage share in State geographical area, %	2001	2.22%	100%
No. of sub-districts	2011	6	175
No. of inhabited villages	2001	n/a	27,481
No. of households	2001	n/a	10,401,918
Forest area as a % of total geographical area	2001	11.68%	13.90%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Chickaballapur district has a population of 12.5 lakh persons – 2.0 per cent of the State population. Majority of the population at 24 per cent each is concentrated in Chintamani and Gauribidanur sub-districts, followed by Chickaballapur and Sidlaghatta sub-districts at 17 per each. Bagepalli and Gudibanda have 15 per cent and five per cent shares respectively in the district population.

The district's literacy rate is 70.1 per cent, which is an 11 per cent improvement from its literacy rate of 59.2 per cent in 2001. The 2011 literacy rate is still lower than the State average of 75.6 per cent. Male literacy at 78.4 per cent is higher than female literacy rate at 61.5 per cent.

Most of the population (80.8 per cent) lives in rural areas. In fact, as mentioned earlier, agriculture is also the main occupation of the people of the district, employing 70 per cent of the labour force as either cultivators or agricultural labourers.

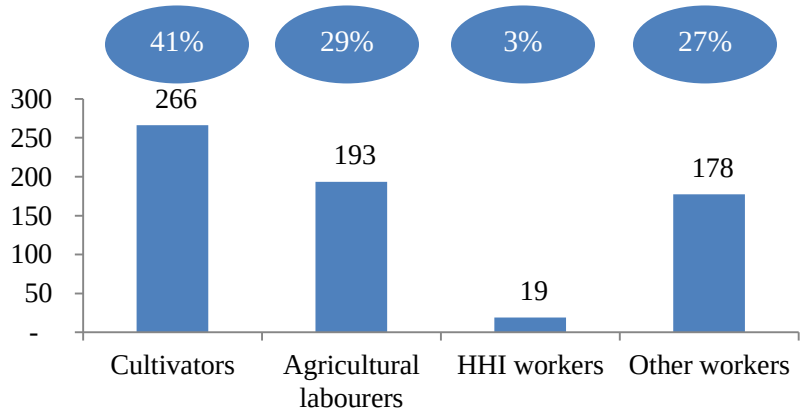
Table 153: Key demographic indicators

Indicator	Year	Chickaballapur	Karnataka
Population, No.	2011	1,254,377	61,130,704
Decadal growth rate of population, %	2001-11	917.00%	15.70%
District's share in State's population, %	2011	2.05%	100%
Urban population as a percentage of total population, %	2001	19.24%	34%
SC population, %	2001	23.91%	16.00%
ST population, %	2001	11.97%	7.00%
Sex ratio, No. of females per 1000 males	2011	968	968
Population density, per sq. km.	2011	298	319
Literacy rate, %	2011	70.08%	75.60%
Main workers, No.	2001	491,117	19,364,759
Marginal workers, No.	2001	109,534	4,170,032
Work participation rate*, %	2001	52%	45%

** Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*
Source: Census 2001, Census 2011

The district has a total workforce of about 6 lakh persons. Of this, 41 per cent are cultivators, 29 per cent are agricultural labourers, three per cent are workers in household industry and 27 per cent are other workers.

Figure 86: Chickaballapur district's worker profile, as of 2011, in thousands

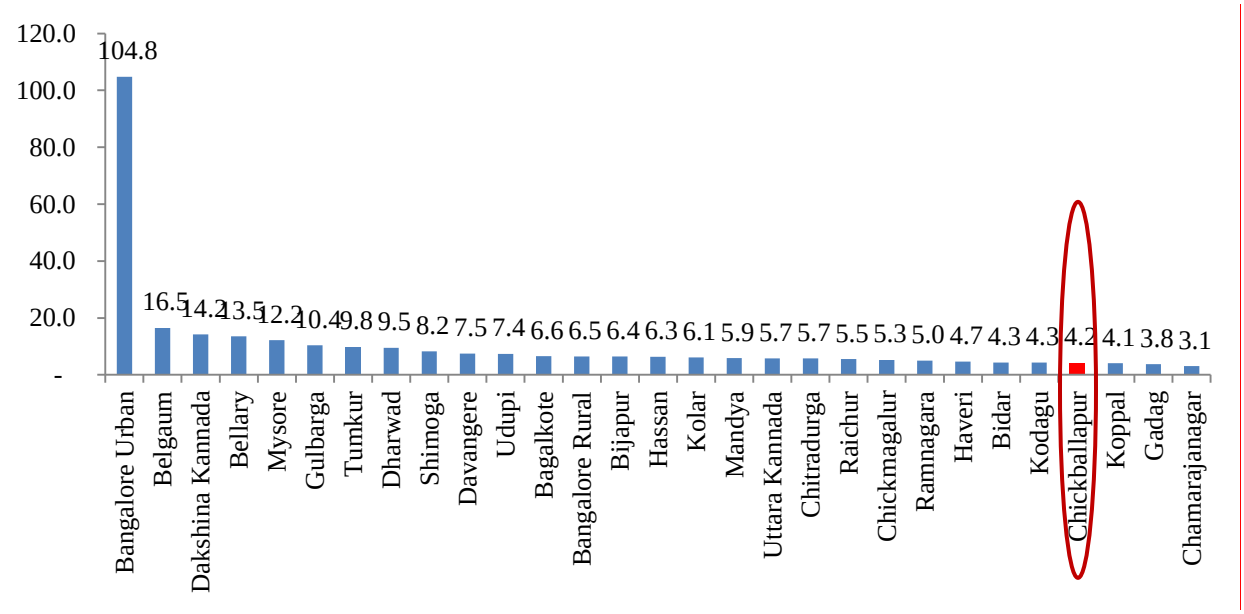


HHI: Household Industry
Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Chickaballapur district had the fourth smallest Gross District Domestic Product (GDDP) in Karnataka at Rs 4,187.16 crore (1.4 per cent of the Gross State Domestic Product). In terms of per capita GDDP, it ranked 21st amongst 30 districts at Rs 33,247. This was lower than the State average of Rs 53,101.

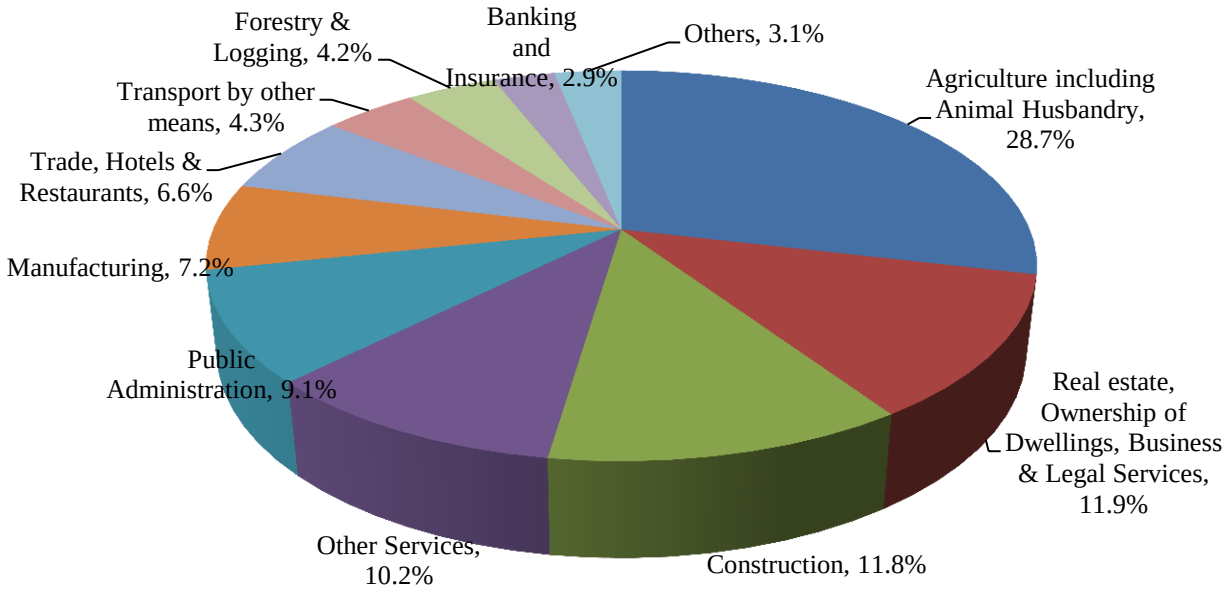
Figure 87: Gross District Domestic Product, in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 46 per cent in 2008-09. This is followed by primary sector at 33 per cent and secondary sector at 21 per cent.

Figure 88: Sector wise distribution of Chickaballapur's GDDP, as of 2008-09, 100% = Rs 4,187.16 crore



Source: Karnataka Directorate of Economic and Statistics

Agriculture: Of the total area of 4,254 sq. km. in the district, over 39 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of ragi and maize under food crops and ground nut under non-food crops. For details of crops grown in Chickaballapur district, refer to annexures.

Industry: Chickaballapur district is mainly agrarian and very few industries have come up in the district, mainly due to acute scarcity of water. As of 31st December 2010, the district had only two large and medium scale industrial units, employing 632 persons. These are Raymond Limited (readymade garments) and ACC Limited (cement).

However, several Small Scale Industries (SSIs) are present in the district, mainly in sectors such as textiles and job works and repairs. As of March 2010, the district had 224 SSIs, employing over 1,000 persons. Refer to annexures for details. The district has two industrial areas and four industrial estates. For details, refer to annexures.

Despite its modest industrial background, Chickaballapur district is beginning to attract industrial investment. During the Global Investors Meet (GIM) held in 2010 in Karnataka, three Memorandums of Understanding (MoUs) amounting to Rs 1,377.48 crore were signed for the district. Once set up, these are estimated to employ 8,230 persons. Of these, currently two projects are under implementation. For detailed status of these projects, refer to annexures. Karnataka held its second GIM in June 2012. During this event, 13 MoUs / Expressions of Interest / Registrations of Interest happened for Chickaballapur district alone. These have a proposed investment of Rs. 27,223 crore. These are expected to provide direct employment for over two lakh persons. The interests have been signed for projects in several sectors including agro, food and horticulture; bio-tech and pharma; cement and other minerals; education; energy; and tourism. For details of these projects, refer to annexures.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 46 per cent of GDDP in Chickaballapur district. Of all the services, the key services in the district are of 'real estate, ownership of dwellings, business and legal services' at 11.9 per cent of GDDP, followed by public administration at 10.2 per cent.

2.3. State of education

As of March 2010, Chickaballapur district had 2,144 schools with 194,364 students enrolled. The drop-out rate was four per cent both for lower and higher primary schools. There were 62 pre-university (PU) colleges with 21,879 students. There are also eight general colleges, four private aided colleges, five polytechnics (for technical education), and two engineering colleges. For details of courses offered by polytechnics, refer to annexures.

Table 154: School education infrastructure in Chickaballapur district, as of March 2011

	Lower Primary		Higher Primary		High	
Type	No.	Students	No.	Students	No.	Students
Govt.	1,049	59,843	530	25,393	106	31,819
Aided	1	4,820	33	2,317	32	10,080
Unaided	37	34,036	209	10,744	118	12,579
Others*	4	596	17	1,327	8	810
Total	1,091	99,295	789	39,781	264	55,288

*Source: DISE 2010-11; *Others include social welfare, local body, other management schools, and central schools.*

Table 155: Higher education infrastructure in Chickaballapur district, as of March 2010

Colleges	No.	Students
PU Colleges	62	21,879
General	8	4,501
Private Aided Colleges	4	2,352
Polytechnic	5	263
Engineering	2	736

Source: Chiknballapur District At a Glance 2009-10

For vocational training, Chickaballapur district had a total of 17 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, four were Government ITIs, one was private aided ITIs and remaining 12 were private unaided ITIs. All the 17 ITIs together have a seating capacity of 1,193. As of August 2011, student enrollment totaled 1,112.

Table 156: Key ITI indicators in Chickaballapur district, as of March 2012

Indicator	Value
Total Number of ITIs	17
Number of Government ITIs	4
Number of Private aided ITIs	1
Number of Private unaided ITIs	12
Total Seating capacity	1,193
Total student enrollment*	1,112
Student pass rate	65%
Student drop-out rate	5%

*Source: IMaCS Primary Survey; * As of August 2011*

Based on our discussions with the key stakeholders in Chickaballapur district, we have found that on an average, of all the students that pass out from an ITI in each year, 60 per cent find jobs in the market. For details on courses offered by ITIs in Chickaballapur, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions. District Industries Centre (DIC) through Apparel Training and Design Centre (ATDC) offers courses in apparel and textiles. Trainees from the institute are absorbed in Raymond factory in Gouribidanur. Currently, ATDC run training institute is present in Chickaballapur taluk. A couple of more such institutes are being planned in Gouribidanur and Chintamani taluks. In

addition, various training programmes are held by the Department of Horticulture in the district. There are not many private training institutes in the districts. There are a couple of institutes offering nursing courses.

2.4. Youth aspirations

In the process of identifying the growth engines for the Chickaballapur district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- Youth feel that there are absolutely no job opportunities in their district. Thus, they are willing to work anywhere as long as they get decent employment opportunities. First choice is Bengaluru. However, if later on, job opportunities come up in their own district, they will be happy to move back.
- Preference is for Government companies or big private companies. Some of the companies of choice are Railways, MICO, Toyota Kirloskar, Electricity Board.
- Youth expect a starting salary of at least Rs. 6,000 to Rs. Rs. 15,000 per month.
- Desire to learn new training courses such as computers, English speaking and even CNC training, as they feel there are better job opportunities for people with such skills.
- Overall, they are happy with the quality of training they are receiving in the district. But will be happier if the quality of infrastructure is improved and the syllabus is upgraded to meet market demands.
- Want their curriculum to have more practical as compared to theoretical knowledge.
- Some of the students wanted their training institutes to provide them with mid-day meals, books, scholarships and more factory visits.
- Overall, youth has the willingness to pay for training programmes, which can help them with better job opportunities. However, the affordability is low.

3. Developmental concerns

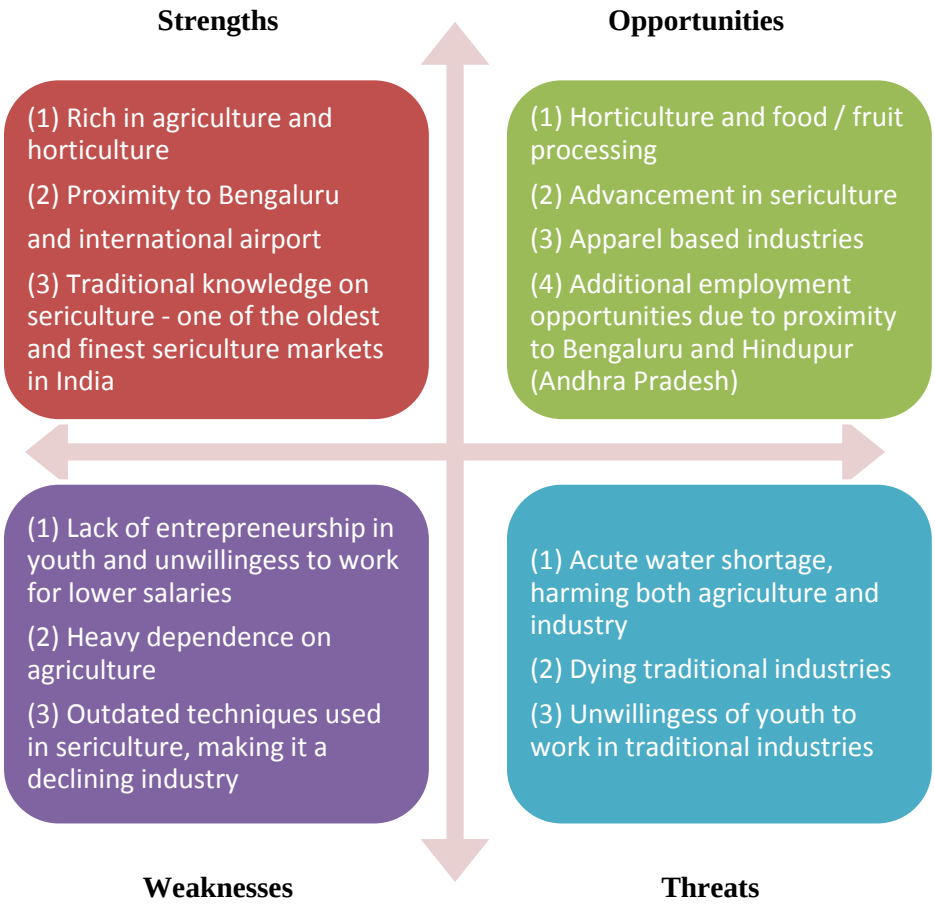
Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Water scarcity:** Chickaballapur district is one of the driest districts in Karnataka. The district faces acute water shortage, not just for industrial uses but also for drinking water purposes. The ground water level is also dropping acutely, due to excessive extraction and water shortage. Also, due to depletion in ground water levels, in some of the places, level of fluorine and silicon has become very high in water. The same is very harmful not good just for drinking purposes but also for agricultural use. Water scarcity is one of the prime reasons for the district being industrially backward. The district is also home to Nandi Hills, which is a famous tourist spot. However, the potential of this spot is not getting completely harnessed as many hotels cannot come up due to lack of adequate water in the district.
- **Lack of entrepreneurship:** The work-participation rate in district is just about 52 per cent. Most of the people are either forcefully or even voluntarily unemployed. Our interactions with various stakeholders showed that people in the district lack entrepreneurship. The two main reasons for the same are lack of basic awareness and unwillingness to work for lower salaries. This phenomenon is holding back the development potential of the district.

SWOT analysis

Based on the diagnostics of the Chickaballapur district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 89: SWOT Analysis of Chickaballapur district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 1.06 lakh persons is likely to be generated in Chickaballapur district. Agriculture and allied activities and tourism and hospitality are expected to remain the biggest employers. However, within agriculture, workforce is expected to gradually come down in agriculture and increase in allied activities such as animal husbandry, dairy, poultry and mainly horticulture. As the economy grows, employment demand in

supporting sectors such as construction, transportation, healthcare and education is also expected to increase at a faster rate.

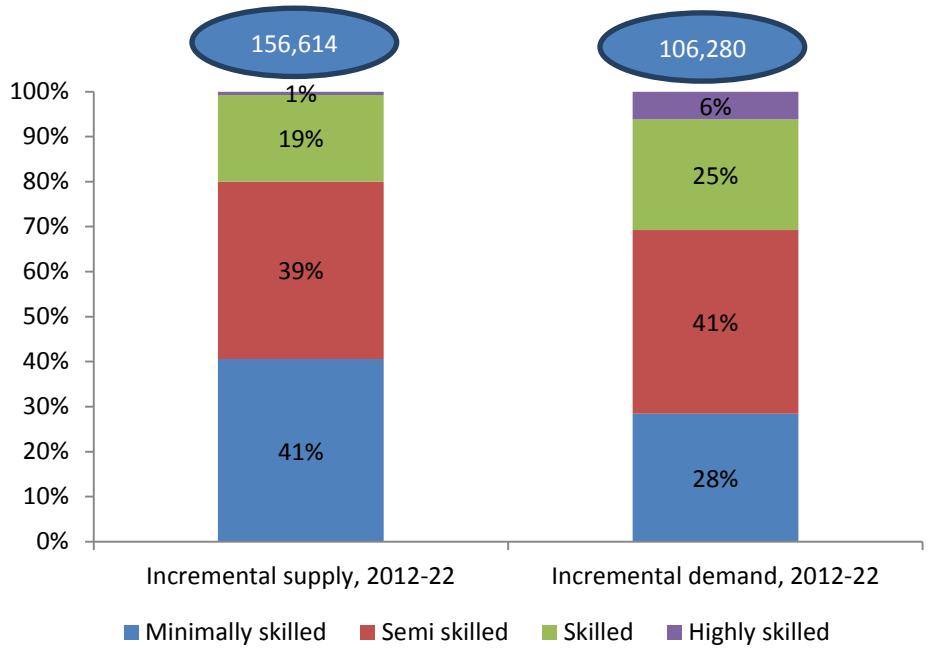
Table 157: Incremental demand in Chickaballapur – 2012 to 2022

SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	24,774	20,633	3,084	561	495
BFSI	3,986	-	2,392	1,196	399
Building, Construction industry and Real Estate	23,146	6,944	11,573	3,472	1,157
Chemicals & Pharmaceuticals	-	-	-	-	-
Construction Materials and Building Hardware	1,437	144	934	287	72
Education and Skill Development	7,881	-	-	7,093	788
Healthcare Services	11,413	-	1,141	7,989	2,283
Textile and Clothing	899	180	540	135	45
Transportation, Logistics, Warehousing and Packaging	6,986	1,397	4,052	1,397	140
Tourism, Travel, Hospitality & Trade	21,335	4,267	14,508	2,133	427
Unorganised	4,290	858	2,488	858	86
Total	**106,280**	**34,474**	**40,763**	**25,144**	**5,899**

Source: IMaCS Analysis. Note: Numbers for sectors will not add up to the total due to very small numbers accounted for by sectors such as food processing and furniture and furnishings.

The incremental supply of work-force between 2012 and 2022 is estimated at 1.56 lakh persons. This is higher than the demand in the district. Thus, there will be surplus manpower within the district, which can continue to move to Bengaluru to make use of the job opportunities available there. The supply is higher at the minimally skilled level as compared to the demand. Thus, people at the lower skill levels need to be trained, so that they can meet the gap at the higher skill levels.

Figure 90: Skill wise incremental demand and supply in Chickaballapur district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on our field surveys in Chickaballapur district, we have found out that sectors where skilling interventions are required are mainly agriculture and allied (especially horticulture), and textiles and clothing.

Table 158: Sectors where interventions are required in Chickballapur– comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Chickaballapur	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		

High Growth Sectors identified by NSDC	Chickaballapur	Karnataka
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		
Additional sectors	**Chickaballapur**	**Karnataka**
Horticulture and allied		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 159: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Textile and clothing (including sericulture)		√	√
Horticulture and allied activities	√	√	√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Textiles and clothing industry (includes sericulture)

As of March 2010, Chickaballapur district had 151 textiles based SSIs, employing 624 workers. This was the highest number of units and employment under any category in SSIs in Chickaballapur. In addition, one of the only two large and medium scale industrial units in the district is Raymond Limited, which is employing close to 1,600 persons. Over and above these, the biggest contributor to textile and clothing sector in the district is 'sericulture', which is a major source of livelihood for over 19,000 farmers in the

district. In this section, we have talked about the skill requirements of both the garment industry and sericulture.

A. Garment industry in Chickaballapur

Presently, the only garment unit in Chickaballapur district is Raymond Limited, which has its plant in Gouribidanur taluk. However, there are many workers within the district (over 2,000), who migrate every day from Gouribidanur to Hindupur in Andhra Pradesh, which is also home to many garment factories. This is due to the proximity of Hindupur to Gouribidanur and good railway connectivity between the two towns.

Raymond has its biggest plant for manufacturing suits in India in Gouribidanur only. Suits are manufactured for domestic market sales and even for exports. Raw materials come from Mumbai, only stitching is done here. After which, suits are directly sent to warehouses in Mumbai and Bengaluru. Post that, they are sold through Raymond's marketing division.

Workers in a garment factory run training institute in Gouribidanur

Figure 24 given below explains the value chain of the textile and clothing industry. Of the entire value chain, only the circled parts exist in the district. These include (a) garments, and (b) silk, fibres and yarn. Within the garments industry, the value chain followed in Chickaballapur district is given in Figure 7 below.

Figure 91: Value chain in textiles and clothing industry

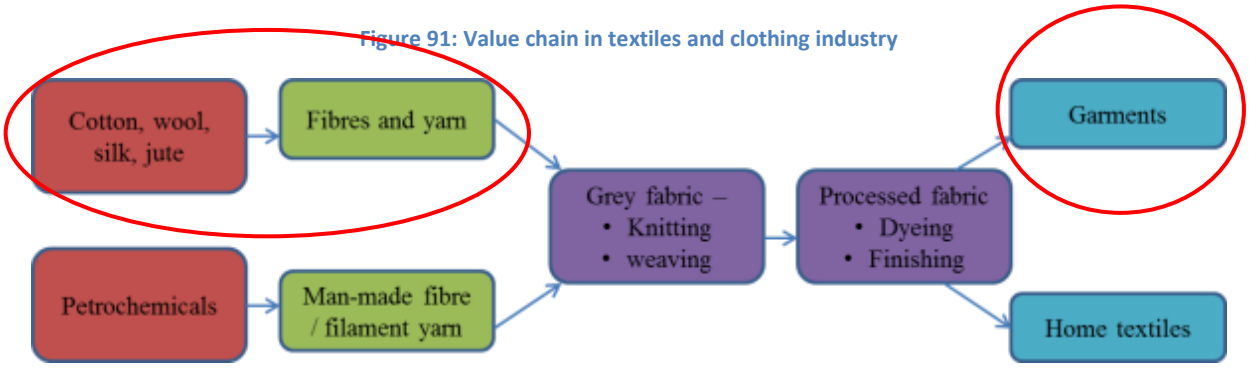


Figure 92: Value chain in garments industry – present in Chickaballapur district

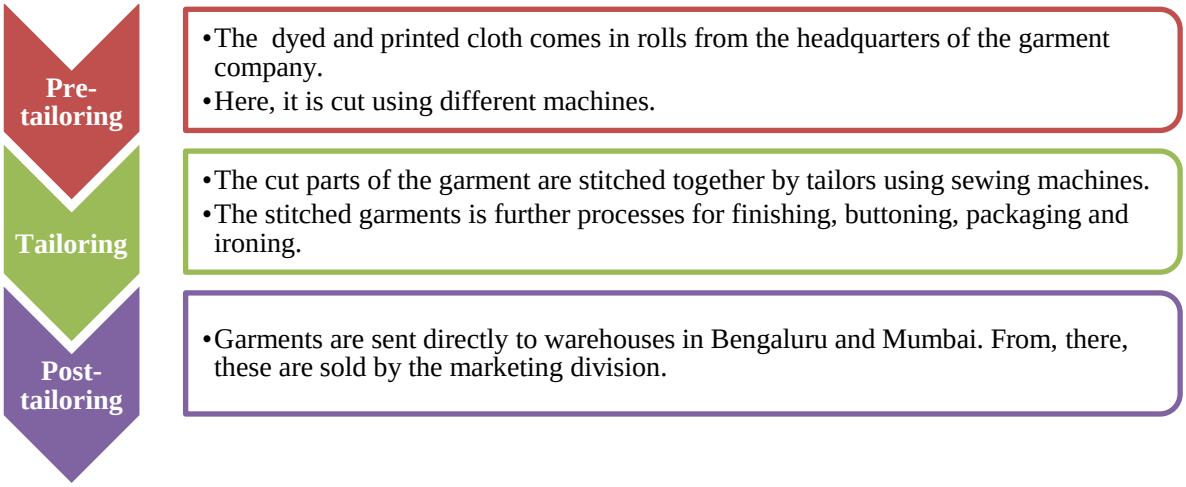


Table 160: Skill gaps in garments industry in Chickaballapur district

Role, educational qualification	Expected competency	Skill gaps
Managers and Assistant Managers (NIFT, ITI & ATDC pass outs with experience); Line Supervisors	▪ Managing all the facilities and the functioning of the work-force ▪ Supervising of the work conducted by operators / tailors and conducting quality checks. ▪ Knowledge of pattern making. ▪ Ability to undertake inspection, production	▪ Managers with experience are hired from Bengaluru as experienced people are unavailable in the district. Thus, total lack of this skill in the district. ▪ Some of the team leaders

Role, educational qualification	Expected competency	Skill gaps
(PU pass outs); Team Leaders (10th pass outs)	planning and control ▪ In-depth knowledge of production processes and inspection methods ▪ Leadership skills ▪ Soft skills and interpersonal skills ▪ Ability to operate CAD	are, however, hired from amongst the locals who have gained experience by working in the factory.
Tailors / operators (mostly school drop outs and illiterates)	▪ Tailors are classified into five categories based on their skill level. Higher skills mainly obtained from experience in the industry. ▪ Proficiency in tailoring / stitching is required for stitching garments with different specifications. ▪ Good machine control – knowledge of threading of sewing machine, stitching on different shapes, seaming garment components together in various fabrics to specified quality standard ▪ Knowledge of machine maintenance procedures ▪ Knowledge of pattern making, grading and draping ▪ Ability to understand instructions properly and stitch the garments based on them. ▪ Ability to work in teams / inter-personal skills. ▪ Soft skills ▪ Knowledge of buttoning, ironing and packaging	▪ All locals are hired and trained on-the-job ▪ Majority of them are completely untrained and are trained in-house by the company ▪ Key skill gaps include machine control, paper rolling, stitching, health and hygiene ▪ Inability to meet deadlines ▪ Attrition rates are high as most of the farmers take up tailoring during off-season

Source: IMaCS Analysis

B. Sericulture industry in Chickaballapur

Sericulture is one of the biggest economic activities in Chickaballapur district employing over 19,000 farmers. Chickaballapur is the second largest producer of silk in Karnataka, after Ramanagara district. The activity is mainly concentrated in Siddlaghata and Chintamani taluks. There are four big sericulture markets in the district, where about 40 tons of cocoons are traded every day and about four to five tons of silk is produced on a daily basis. The district has over 4,500 reelers (mostly Muslims), which are mostly concentrated in Siddlaghatta taluk. Of all the silk which is reeled every day, about 60 per cent of silk to local twisters and 40 per cent is sold outside to places like Tamil Nadu, Amdhra Pradesh, Gujarat and even Varanasi. The raw silk produced is further sent to Bengaluru via agents.

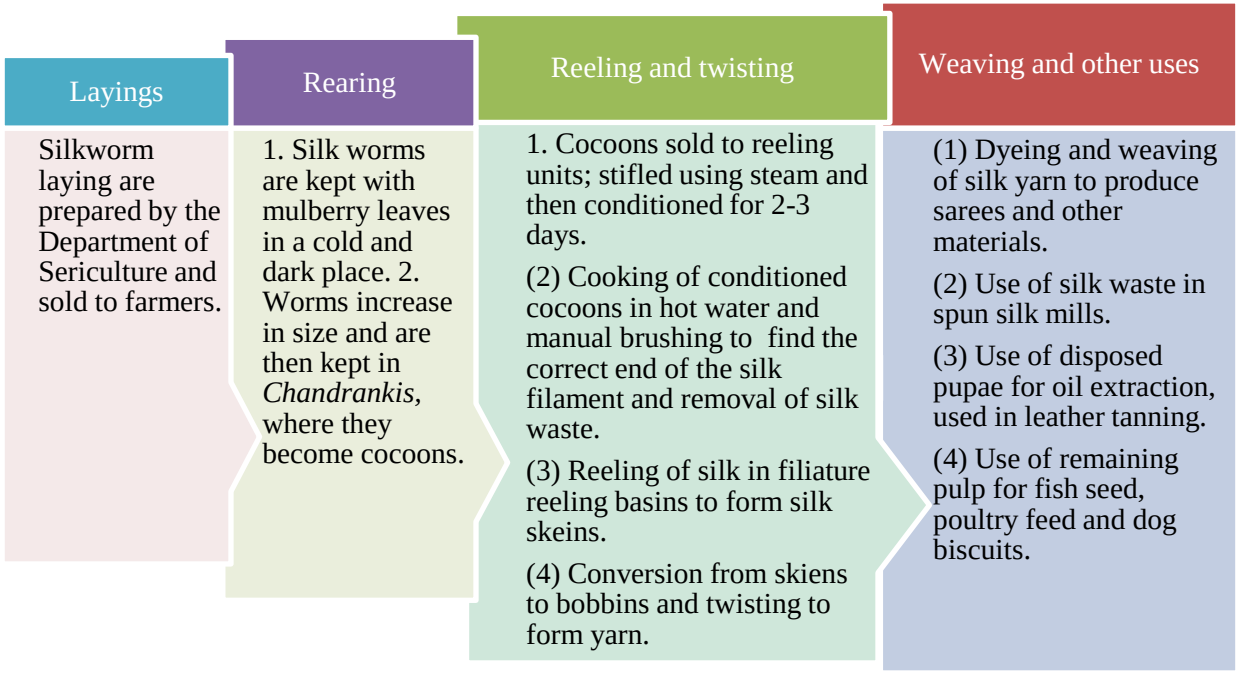
Table 161: Sericulture statistics for Chickaballapur district, as of 2009-10

Taluk	Area under mulberry, hectares	Cocoon production, tonnes	No. of farmers engaged in the occupation	Value of silk produced, Rs. lakh
Bagepalli	654.65	444.58	1,691	800.25
Chickaballapur	2,194.38	1,349.15	2,830	2,428.46
Chintamani	6,045.17	3,880.10	6,165	6,984.18
Gauribidanur	2,232.01	1,199.64	3,262	2,159.36
Gudibande	116.65	101.77	315	183.18
Sidlaghatta	5,761.44	3,851.04	5,480	6,931.87
Total	**17,004.30**	**10,826.28**	**19,743**	**19,487.30**

Source: Chickaballapur District At a Glance 2009-10

Sericulture is an age-old activity in the district. It is a traditional skill which is possessed by the farmers and reelers. However, the sector has started to suffer in recent years, due to onslaught of cheap Chinese silk, which is cheaper and looks more attractive. The Department of Sericulture is taking steps such as encouraging farmers to cultivate bio-voltine cocoons, which produce better quality and attractive looking silk. However, farmers are apprehensive about this introduction, as bio-voltine cocoons can only be reeled on automated reeling machines, which are very expensive and can be accessed by a very few farmers. The sericulture value chain broadly includes layings, cocoon rearing, reeling and weaving.

Figure 93: Sericulture value chain



Source: IMaCS Analysis

Sericulture value chain in Siddlaghatta taluk in Chickaballapur district








Table 162: Skill gaps in sericulture industry in Chickaballapur district

Role, educational qualification	Expected competency	Skill gaps
Farmer (no criteria for education, experience based)	▪ Knowledge of cultivating mulberry leaves ▪ Understanding of cocoon rearing ▪ Knowledge of keeping silk worms with mulberry leaves for adequate time in dark and cold places ▪ Knowledge of transferring the silk worms to *Chandrankis* for formation of cocoons ▪ Ability to sell the cocoons to reelers ▪ Ability to differentiate between different quality of cocoons ▪ Ability to cultivate modern technology bio-voltine cocoons, which are more resistant to pests ▪ Knowledge of pest control ▪ Quality control	▪ Traditional skill set. No skill gaps observed in cocoon rearing. ▪ Only need training on cultivation of bio-voltine cocoons.
Silk reeler (no criteria for education, experience based)	▪ Ability to stifle cocoons in steaming water of 90 to 92 degree Celcius ▪ Ability to condition the cocoons properly ▪ Ability to boil the cocoons in hot water ▪ Ability to separate waste from cocoons and to dispose it properly so that it can be used for making spun silk ▪ Ability to do brushing to find the correct end of silk filament ▪ Ability to transfer the silk to reeling basins without causing any waste ▪ Ability to operate the reeling machine to	▪ Traditional skills possessed by the reelers for decades. ▪ Skill gap exists mainly in terms of labour shortage. The silk reeling process is hard and not many youth prefer to join this industry, also because the incomes are low. ▪ There is also lack of skills for use of automated reeling machines. ▪ Lack of knowledge on grading

Role, educational qualification	Expected competency	Skill gaps
	form silk skeins / yarns	and quality of silk.
Silk twister (no criteria for education, experience based)	▪ Ability to convert silk from skein form to bobbin – winding process ▪ Ability to twist single yarn on the twisting machine ▪ Ability to double two bobbins ▪ Ability to twist doubled yarn in hank form ▪ Ability to de-gum twisted yarn using soap and soda	▪ Traditional activity, with no skill gaps. ▪ Only gap in terms of shortage of human resources who are willing to take it up as a trade

Source: IMaCS Analysis

5.2. Horticulture and allied

Chickaballapur is one of the key horticulture districts of Karnataka and supplies year-long fruits and vegetables to Bengaluru. Most of the agricultural families in the district grow at least one horticulture crop. Of the total net sown area in the district, over 21 per cent is utilised for horticulture crops alone. Most of the horticulture area is concentrated in Chintamani, Chickaballapur, Gauribidanur and Sidlaghatta taluks.

Table 163: Taluk wise area under horticulture crops in Chickaballapur district, 2010-11

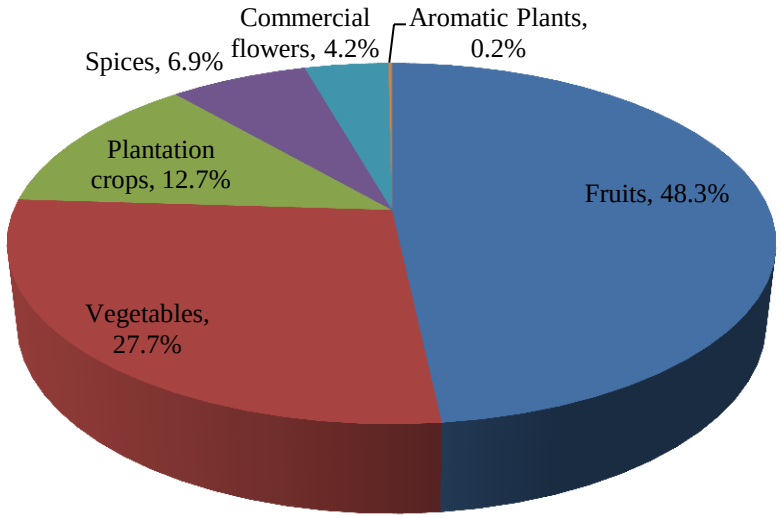
Taluk	Area under horticulture crops, in hectares	% of horticulture cropped area to new sown area
Bagepalli	3,379	7.19
Chickaballapur	11,262	36.31
Chintamani	15,749	29.68
Gauribidanur	9,730	21.22
Gudibande	910	7.31
Sidlaghatta	6,736	21.08
Total	**47,406**	**21.62**

Source: Department of Horticulture, Chickaballapur

Key horticulture crops grown in the district include fruits, vegetables and plantation crops. Within fruits, mangoes occupy the maximum area under production, followed by bananas, sapotas and grapes. Within

vegetables, prominent ones are potatoes, tomatoes, beans and onions. Key spice grown is tamarind. Key commercial crops grown are coconut and cashews. Flowers such as marigold, chrysanthemum and gladiolus are also grown. Some farmers have even taken up cultivation of capsicum, carnations, gerberas in poly-house cultivation.

Figure 94: Percentage share in area of horticulture crops grown in Chickaballapur, As of Mar 2011, 100% = 47,406 hectares



Source: Department of Horticulture, Chickaballapur

The Department of Horticulture in the district is undertaking various activities to promote horticulture. It conducts trainings, seminars and workshops throughout the year. In the past, it has also invited scientists from horticulture colleges in Kolar and Dharwad and even from Institute of Horticulture Research (IHR) and Gandhi Krishi Vignan Kendra (GKVK) to conduct training programmes in the district.

NGOs in the district are also training farmers in organic cultivation. Government is providing subsidy to them for the same. The Department is currently in the process of constructing a 'Mango Development Centre' at a cost of Rs. 3 crore for mango processing in the district. It is nearing completion. The project is for washing, grading and processing. It's a demonstration cum training centre.

Given the abundance of horticulture crops grown in the district, there is potential and scope for setting up food processing units, especially for mangoes, tomatoes and grapes. Every year, there is a glut of tomatoes in the district between January and March and these are dumped for free or at a price as low

as Rs. 0.50 per kg. Grapes (specifically Bangalore Blue) from the district are transported to the nearby Bangalore Rural district where these are used for making wine in Doddaballpur.

Table 164: Skill gaps in horticulture in Chickaballapur district

Role, educational qualification	Expected competency	Skill gaps
Grower (illiterate / school drop-out)	▪ Knowledge about the growing pattern of different crops ▪ Knowledge of different seasons in which different crops should be harvested and planted ▪ Knowledge about high quality seeds ▪ Knowledge about pest control, which includes management of weeds, insects / mites, and diseases ▪ Good understanding of cultural practices which include crop rotation, culling, cover crops, intercropping, double cropping, composting etc. ▪ Understanding of international standards to ensure best quality and higher production ▪ Awareness on appropriate methods and time of harvesting ▪ Prevention of microbial contamination of fresh produce ▪ Understanding of sanitization of vegetables and fruits by dripping and flowers by spraying ▪ Understanding of best practices of sorting, grading and packaging ▪ Ensuring worker hygiene and sanitation	▪ Lack of knowledge about high quality seeds ▪ Lack understanding of cultural practices like crop rotation, inter cropping, double cropping etc. ▪ Lack of knowledge on new techniques in agriculture ▪ Lack understanding of best practices of sorting, grading and packaging ▪ Lack of understanding of organic farming ▪ Lack of understanding of correct dosage of pesticides to protect fertility of the soil ▪ Lack of knowledge on productive cultivation in poly houses ▪ Lack of precision farming techniques and tissue culture

Role, educational qualification	Expected competency	Skill gaps
	practices	
Marketing agents (illiterate / school drop-out)	▪ Capability to establish market linkages ▪ Understanding of market demand ▪ Understanding of pricing methodology ▪ Capability to strike good bargains with the potential buyers both in domestic and international markets ▪ Ability to ensure timely transportation of cost to prevent it from getting perished and wasted ▪ Soft skills to deal with clients	▪ Lack the capability to establish market linkages ▪ Lack understanding of market demand ▪ Lack understanding of pricing methodology ▪ Lack of managerial skills ▪ Lack of report writing skills ▪ Lack soft skills
Food / Fruit processing entrepreneur (illiterate to PUC)	▪ Understanding of basic processing technologies, like processing fruits into pulp, juice, jam, jelly, pickle etc. for sale in local market and even outside the state ▪ Ability to visually examine fruits / vegetables and separate rotten fruits / vegetables ▪ Ability to differentiate between different quality grades based on size and other normative approaches ▪ Ability to appropriately size / dice as well as the ability to make end produce visually appealing ▪ Knowledge of latest preservation and processing technologies ▪ Ability to adapt to newer storage technologies ▪ Sensitisation to quality control ▪ Branding knowledge ▪ Strong negotiation skills ▪ Packing, selling and marketing skills	▪ Lack of knowledge of latest preservation and processing technologies ▪ Lack if ability to adapt to newer storage technologies ▪ Lack of branding knowledge ▪ Lack of understanding of latest packaging techniques ▪ Lack of marketing skills ▪ Lack of soft skills

Source: IMaCS Analysis

6. Recommendations

Recommendations for Chikballapur district mainly focus on two sectors, namely textile and clothing and horticulture and allied. Within textiles and clothing, the focus is on sericulture and garments industry. Within horticulture and allied, the focus is on introduction of new cultivation techniques and processing of crops such as tomatoes, grapes and mangoes.

For both the sectors, efforts have to be made by both the Government and private players, in tandem to help improve the skills and thus the incomes in the two sectors. In addition, we have made some other recommendations, which have broad themes which can assist in skill development in the district.

Table 165: Key recommendations for Chikballapur district – summary

Sector	Government	Private training providers	Industry
Textiles and Clothing	▪ Spread awareness about the Schemes run by Department of Sericulture in the district ▪ Focus on modern cocoon rearing techniques and use of automated machines	▪ Join hands with garment factories for sourcing their manpower need	▪ To set up weaving units in the district as raw material is available (silk) ▪ To set up garment factories
Horticulture and allied	▪ Department of Horticulture to expand reach and coverage of its programmes to benefit more people	▪ Join hands with the Department of Horticulture in the district for training and also for assuring markets to farmers	▪ To set up food processing units due to availability of excess raw materials, mainly mango, tomato and grapes

6.1. Textiles and Clothing

Recommendations for textile and clothing industry in Chikballapur district span across garment factories and sericulture. While there are only a few garment factories in Chikballapur currently, many workers from Gouribidanur taluk travel to Hindupur taluk in Andhra Pradesh on a daily basis, providing ample opportunity in this sector.

Within sericulture, Siddleghatta taluk in Chikballapur district is the second biggest sericulture centre in Karnataka after Ramanagara. Sericulture provides employment to over 19,000 farmers in the district. Sericulture was once a blooming sector in the district has started to wane down due to tough competition from Chinese silk. Youth is preferring to not work in this sector and moving away to other places in search for better jobs. Thus, there has to be a focus on rejuvenating the sector by bringing in new technology which can compete with Chinese silk and also lure the youth back into its fold.

Government

To bring the Karnataka silk on par with the Chinese silk, it's important to use better quality bio-voltine cocoons. These give higher yield and are also export quality. Department of Sericulture is already providing training for the same. Department even sent its officers to countries such as China, Japan and Korea to understand the skills and techniques used there in sericulture. While the Department is promoting farmers to use bio-voltine cocoons, the farmers have their apprehensions about using the same. Thus, the Department needs to focus on the following:

- Hold awareness campaigns about the use and benefits of bio-voltine cocoons over regular cocoons.
- Spread awareness on better income that can be generated if better quality cocoons are used.
- The bio-voltine cocoons can't be reeled manually on charkhas. They have to be reeled on automatic reeling machines. Awareness needs to be spread about the same.
- The automated reeling machines are not commonly used as of now, as they are more expensive. However, the Department of Sericulture is offering subsidy for buying these machines. Therefore, awareness needs to be generated about this subsidy Scheme as well.
- Once the automated machines are beginning to be accepted on a larger scale, the Department will have to put in more effort on skilling people on the use of these machines. It can provide these trainings on a standalone basis or also on a PPP basis, by joining hands with private training providers.

- The above trainings can also be provided in collaboration with the Silk Board.
- Skills also need to be provided on grading of silks, as reelers currently do not have any knowledge of the same.

Private training providers

Private players can provide training to youth, mainly women in the garment industry. The remunerative model for the same would be to join hands with garment factories. While the garment units can provide their latest machines and skills, training centres can take up the onus of generating dedicated trained workforce for the industry. It will also be necessary to obtain the necessary certifications from the Government. There are a few NGOs also who provide training in tailoring. They also need to ramp up their infrastructure and faculty if they need their course to be valued better. If they lack the necessary resources for the same, they can also try tying up hands with the players in the garment industry.

In garment industry, key skills required are:

- Machine control
- Rolling paper training
- Cutting and stitching
- Buttoning and accessorising
- Time management
- Inter-personal skills
- Adherence to norms
- Health and hygiene, and
- Safety measures

Industry

Sericulture: The sericulture sector in the district is in need of support. Currently, it is threatened by the cheap Chinese silk. Weavers from Bangalore and even Tamil Nadu source their silk raw material from Chickballapur district. However, weaving is not conducted on a large scale in the district. Weaving is mainly done in Bangalore Rural district and some districts of Tamil Nadu. However, since the raw material is available in Chickballapur district, there is ample scope for setting up large scale weaving units there only. The same can be explored by the industry in collaboration with the Department of Textiles in the district.

Garments: Currently, Raymond is the only big garment factory available in the district. Many people from the district move to Hindupur in Andhra Pradesh for work. However, the district administration is in the process of setting up and up-grading industrial areas in the district. Thus, presenting many more opportunities to set up garment factories within the district only (especially in Gowribidanur taluk). The private players can tap this opportunity and set up units in the district. This will ensure them easy access to cheap and trained labour. Also, proximity to Bengaluru and the international airport will be an added advantage for them.

6.2. Horticulture and allied

Chikballapur is a horticulture rich district in Karnataka. Most of the agrarian families are growing at least one horticulture crop in the district. Department of Horticulture is already conducting trainings, seminars and workshops for teaching new techniques to the farmers. It has even invited scientists from horticulture colleges in Kolar and Dharwad and even from Institute of Horticulture Research (IHR) and Gandhi Krishi Vignan Kendra (GKVK) to conduct training programmes in the district. The Department is also training farmers in urban clusters for ensuring round the year supply of vegetables to Bangalore.

The district is able to produce large amounts of horticulture crops. However, it lacks the necessary infrastructure to process the same, leading to wastage of resources. For instance, about 40,000 tonnes of tomatoes get wasted in the district every year due to inability of the farmers to sell them and even to process them.

There is scope for setting up of processing units and for providing skills to farmers for producing world-class output. Main three crops for which processing potential exists are:

- Tomatoes
- Mangoes, and
- Bangalore Blue Grapes

Government

Department of Horticulture is already taking initiatives to help the horticulture sector in the district. Various schemes are being run, in addition to the National Horticulture Mission. There is increasing focus on organic farming under cluster training. On the processing front, the Department of

Horticulture is in the process of setting up a Mango Development Centre in the district, which will provide training to farmers on mango processing. However, the efforts need to be continued and the coverage of the existing Schemes needs to be expanded. The key skills on which focus has to be placed are:

- Organic farming
- Use of correct dosage of pesticides and chemicals
- Paired system of planting
- Seed treatment
- Soil and water testing
- Cultivation in poly-houses
- Precision farming
- Tissue culture
- Packaging of ornamental flowers

Another aspect which needs to be addressed through trainings is branding and market assurance.

Private training providers

The private sector can tie up hands with the Department of Horticulture in the district for providing training to the farmers. It will be best to have tie ups with big food processing companies, who can send their men and material in the district to train farmers and in return purchase the crops produced. This will take care of the dual issues of branding and market assurance. Key areas where processing can be done is mangoes, grapes and tomatoes.

Industry

As discussed earlier, the district has huge potential for setting up food processing units due to abundance of the raw materials produced. The key materials include tomatoes, grapes, and mangoes. Farmers themselves are not able to process these crops due to the lack of seed capital and also because of lack of branding and marketing know-how. Thus, we envisage that food processing companies can come up in the district. That will help generate significant employment for the locals. The same can be achieved in collaboration with Food Karnataka Limited.

6.3. Others

- Projects like Pharma SEZ and Sports City are proposed in the district. However, they are also held up due to water shortage only. The district is completely dry. Needs an irrigation project on priority.
- Youth can also be trained in sectors which are in high demand in Bengaluru. Since Chikballapur is close to Bengaluru, youth prefer to move there for employment.
- Entrepreneurship Development Programmes (EDP) and awareness creation is also needed.
- English speaking and communication skills should be a part and parcel of any training programme which is introduced in the district
- Need for updation of the syllabus in ITIs. The syllabus should be in line with industry requirements. Also, provision of CNC machines to the maximum extent possible
- Strict monitoring and regulation of private ITIs.
- Awareness creation in youth about the jobs available in welder trade and encouraging them to not consider it inferior and take it up.
- Meet demand for new courses such as computers, English speaking, operating CNC machines, automotive training etc.
- Generate awareness of different Government Schemes amongst people.
- Training in rural areas can also be imparted in subjects such as modern farming and breeding techniques, dairy, bakery and yeast production etc.

3.10. CHIKMAGALUR

1. Introduction

The district of Chikmagalur lies in the picturesque Malnad (Ghat section) area of Karnataka. It is known for the scenic beauty and has gained immense popularity as a tourism destination. In addition to tourism, Chikmagalur is known as the 'coffee kettle of Karnataka'. This name stems from the fact that coffee was first cultivated in Chikmagalur in India. As of 2011, this sector offers employment to over one lakh people. The district is spanned over an area of 7,201 square kilometres. It is bounded by the districts of Hassan, Udupi, Shimoga and Dakshina Kannada.

It is sub-divided into seven sub-districts and has 1,034 villages. About 80 per cent of the population lives in rural areas. About 50 per cent of the population (as of Census 2001) works in agriculture. The remaining is in household industry (two per cent) and other workers[20] at 48 per cent.

In addition to the peaks and waterfalls that form the bedrock of the tourism sector, Chikmagalur is home to the Sringeri pilgrim center. This center has immense importance in the Advaitha philosophy as Adi Shankara established this Math.

In terms of economic and industrial development, the district has not progressed much. The Kudremukh Iron Ore Company Limited (KIOCL), which was one of the main industrial units has been shut due to the

[20] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

expiration of mining licence. This was the company where many locals were employed. KIOCL is now not able to tap the iron ore resource. The only other big industry is the Vignan Industries in Tarikere.

Hence, the economy is mostly agrarian. Coffee and arecanut are the main plantation crops. Jowar, maize, wheat and paddy are the key cereal crops grown.

Table 166: Comparison of Chikmagalur district with Karnataka – key indicators

Indicator	Year	Chikmagalur	Karnataka
Area, in sq.km.	2001	7,201	191,791
Percentage share in State geographical area, %	2001	3.75%	100%
No. of sub-districts	2011	7	175
No. of inhabited villages	2001	1,034	27,481
No. of households	2001	246,110	10,401,918
Forest area as a % of total geographical area	2001	27.76%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Chikmagalur district has a population of 11.37 lakh persons – 1.86 per cent of the State population. During 2001 and 2011, the decadal growth rate of the population was negative, indicating the growing trend of people emigrating out of the district due to dearth of job opportunities. About 25 per cent of the population is concentrated in the Chikmagalur and Kadur talukas. This is followed by the Tarikere taluka with 19 per cent. This is followed by Mudigere taluka at 13 per cent, Koppa and NR Pura talukas at about seven per cent and Sringeri taluka at three per cent. While 66 per cent of the population in the district is in working-age group (15 to 64 years), about 45 per cent is actually working i.e. work participation rate.

The district's literacy rate is 79.24 per cent, which is higher than the State average of 75.6 per cent and the All-India average of 74 per cent. Male literacy at 85.66 per cent is significantly higher than female literacy rate at 72.88 per cent. Of the 30 districts, Chikmagalur ranks eighth on Gender Development Index (GDI), with a value of 0.636.

Table 167: Key demographic indicators

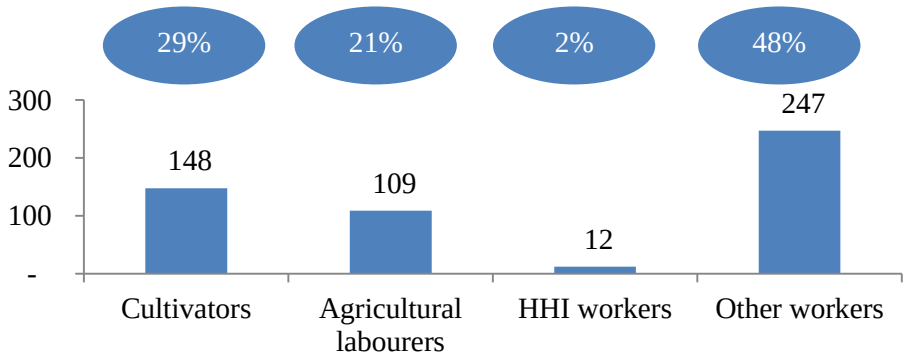
Indicator	Year	Chikmagalur	Karnataka
Population, No.	2011	1,137,753	61,130,704
Decadal growth rate of population, %	2001-11	(0.28)%	15.7%
District's share in State's population, %	2011	1.86%	100%
Urban population as a percentage of total population, %	2001	19.52%	34%
SC population, %	2001	20.43%	16.0%
ST population, %	2001	3.6%	7.0%
Sex ratio, No. of females per 1000 males	2011	1005	968
Population density, per sq. km.	2011	158	319
Literacy rate, %	2011	79.24%	75.6%
Main workers, No.	2001	428,830	19,364,759
Marginal workers, No.	2001	87,847	4,170,032
Working age population* as a percentage of total population, %	2001	66%	63%
Work participation rate^, %	2001	45%	45%
HDI	2001	0.647	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 5.16 lakh persons. Of this, 29 per cent are cultivators, 21 per cent are agricultural labourers, two per cent are workers in household industry and 48 per cent are other workers.

Figure 95: Chikmagalur district's worker profile, as of 2011, in thousands



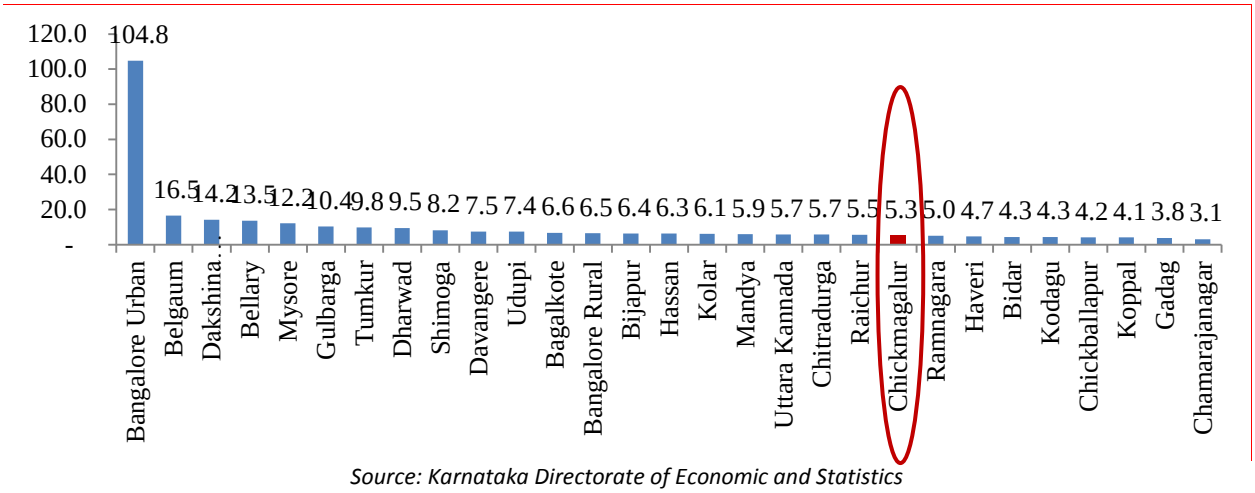
HHI: Household Industry

Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Chikmagalur district had Gross District Domestic Product (GDDP) in Karnataka at Rs 5259.01 crore (two per cent of the Gross State Domestic Product). In terms of per capita GDDP though, it ranked 10th amongst 30 districts at Rs 42,055. This was lower than the State average of Rs 53,101.

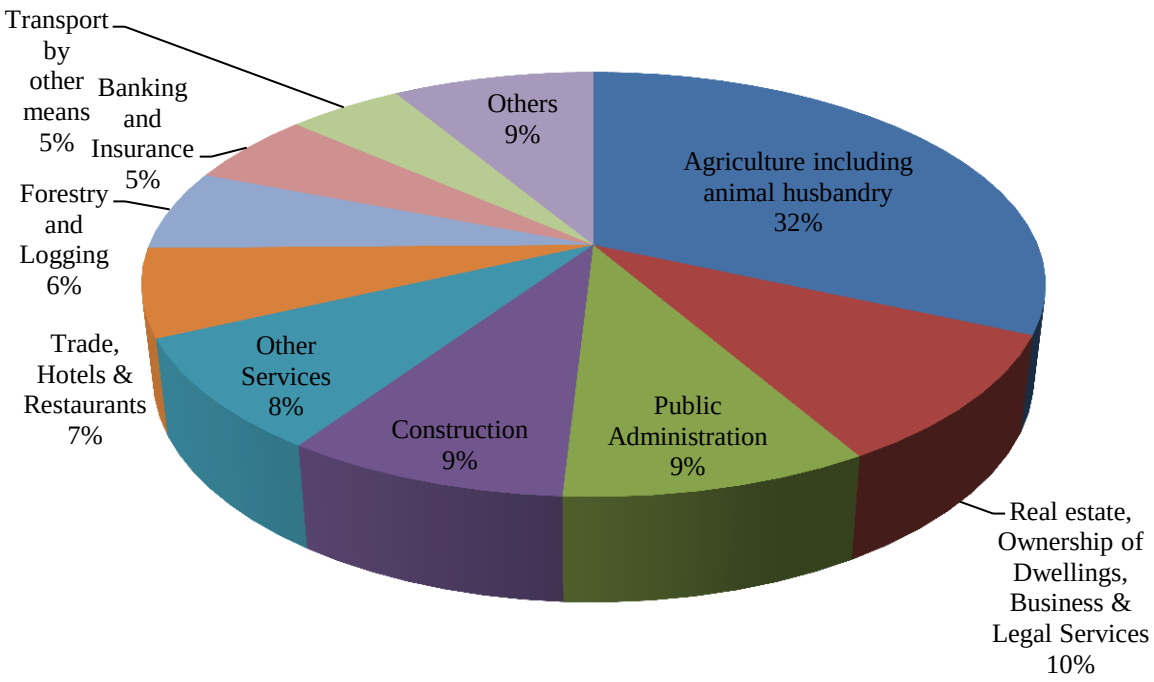
Figure 96: Gross District Domestic Product, in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 48 per cent in 2008-09. This is followed by primary sector at 38 per cent and secondary sector at 14 per cent.

Figure 97: Sector wise distribution of Chikmagalur's GDDP, as of 2008-09, 100% = Rs 5259.01 crore



Source: Chikmagalur District At a Glance 2009-10

Agriculture: Of the total area of 7201 sq. km. in the district, about 41 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of paddy and ragi under food crops. The coffee cultivation dominates the plantation crop grown in the district. For details of crops grown in Chikmagalur district, refer to annexures.

Industry: As of 31st December 2011, Chikmagaur district had one large and medium scale industrial industry – The Vignan Industries in Tarikere. The key reason as to why the industrial development is difficult is because of the terrain. Nearly 30 per cent of the district is forest area and the remaining area is also not suitable for the establishment of large industries due to its hilly terrain. In addition, the ban on mining has made it difficult to utilize the natural resources the district has been endowed with. Also, the road infrastructure in the district needs to be ramped up. The NH 13 that passes through the district is badly maintained. In fact, the road from Mangalore to Chikmagalur sees accidents on regular intervals.

As a consequence of these bottlenecks, the GIM 2010 saw only one MoU signed for Chikmagalur, which was wood based. In the GIM held in 2012, again two MoUs were signed. For details of these projects, refer to annexures.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 48 per cent of GDDP in Chikmagalur district. Of all the services, the key services in the district are real estate and ownership at 11 per cent and public administration at 10 per cent.

2.3. State of education

As of March 2010, Chikmagalur district had 2,032 schools, with 206,395 students enrolled. There are 77 pre-university (PU) colleges with 19,228 students. There are also 17 general colleges, two medical colleges, three polytechnics (for technical education) and one engineering college. For details of courses offered by polytechnics, refer to annexures.

Table 168: School education infrastructure in Chikmagalur district, as of March 2010

	Lower Primary		Higher Primary		High	
Type	No.	Students	No.	Students	No.	Students
Govt.	818	54,371	695	33,519	115	23,525
Aided	1	5,332	25	8,969	113	18,656
Unaided	52	34,036	133	15,408	80	12,579
Total	871	93,739	853	57,896	308	54,760

Source: Karnataka Education Department

Table 169: Higher education infrastructure in Chikmagalur district, as of March 2010

Colleges	No.	Students
PU Colleges	77	19,228
General	17	8,517
Medical	2	351
Polytechnic	3	1,418
Engineering	1	2,433
Dental	-	-

Source: Chikmagalur District At a Glance 2009-10

For vocational training, Chikmagalur district had a total of 19 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, four were Government ITIs, five were private aided ITIs and remaining 10 were private unaided ITIs. All the 19 ITIs together have a seating capacity of 1,990.

Table 170: Key ITI indicators in Chikmagalur district, as of March 2012

Indicator	Value
Total Number of ITI	57
Number of Government ITI	4
Number of Private aided ITI	5
Number of Private unaided ITI	10
Total Seating capacity	1,990
Student pass rate	70-75%
Student drop-out rate	5-10%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Chikmagalur district, we have found that on an average, of all the students that pass out from an ITI in each year, 75 per cent find jobs in the market. For details on courses offered by ITIs in Chikmagallur, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions. The Government Departments offer courses in trades such as machinist, tool room training, guide related training for tourism sector, driving skills training, etc.

The private training institutes are offering courses in teacher's training, nursing, computer education, Ayurveda and pharmacy. For details of courses offered by private training institutes in Chikmagalur district, refer to annexures.

2.4. Youth Aspirations

In the process of identifying the growth engines for the Chikmagalur district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- Youth not willing to stay back in the district as there are no opportunities
- Mangalore and Bengaluru are the preferred destinations
- Students do not want to work in hospitality sector
- Students, who are not able to get admissions in good colleges, prefer ITIs. The latter are also preferred because ITI certification helps in obtaining Government and even private jobs. The low fee is an added advantage.
- Quality of courses and teachers is average. Quality of infrastructure is below average.
- Prefer to remain unemployed rather than joining jobs with lower salaries.
- Preference for white collar jobs as compared to blue collar and manual jobs.
- Want to master communication in English
- Also, the youth expect special course for interviews
- Want enhanced computer training
- Want soft skills courses

3. Developmental concerns

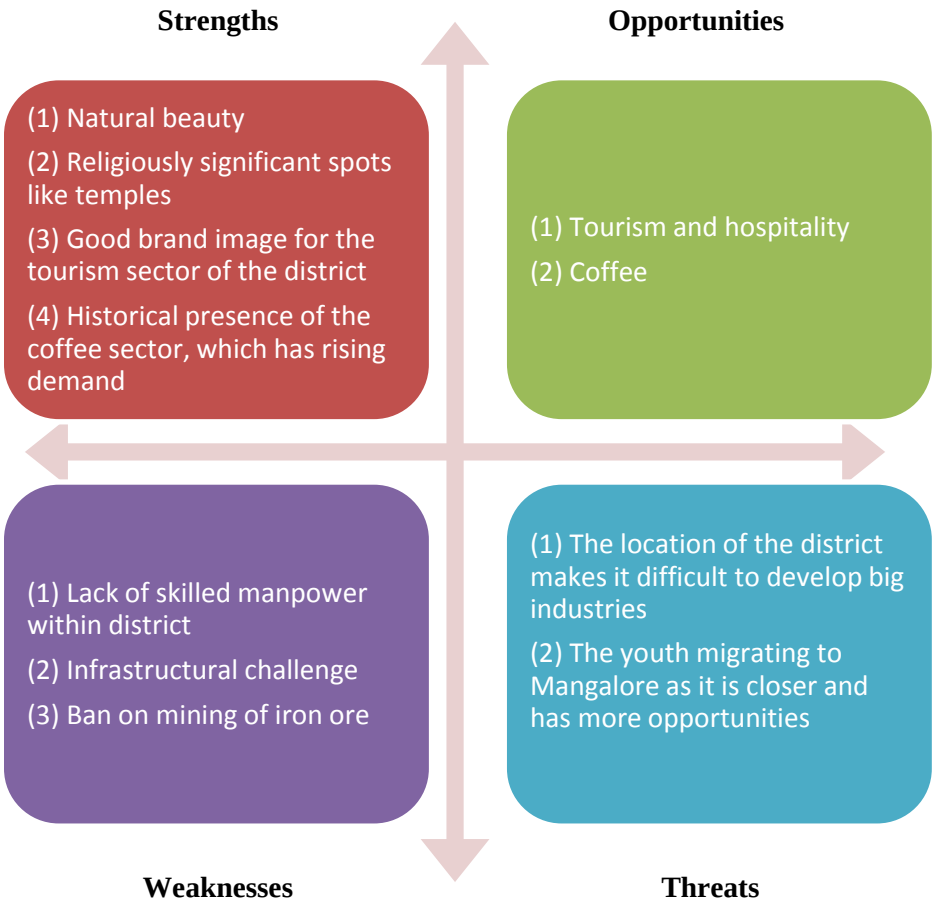
Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Inability to tap resources:** the ban on mining of iron ore has rendered it impossible to tap the resources. As a consequence of this, industries that can offer large scale employment are not able to develop in the district. In fact, the KIOCL has been shut down due to this reason and people were rendered without jobs.
- **Infrastructural challenges:** the main roads that link the district to the state – the NH 13 and NH 206 are affected by the rainfall and are in a bad condition. Also, the railway line that connects Kadur and Chikmagalur town is still in development phase. In addition to the travel infrastructure, the other support infra like storage, cold chain management, etc need to be developed.
- **Tourism development:** To develop the tourism potential of the district further, there needs to be a marked improvement in the infrastructure available in the district. Also, the human resource's skills have to be developed.

SWOT analysis

Based on the diagnostics of the Chikmagalur district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 98: SWOT Analysis of Chikmagalur district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 2.46 lakh persons is likely to be generated in Chikmagalur district. Travel, tourism and hospitality is expected to remain the biggest employer in the district, given its tourism potential. As the economy grows,

employment demand in supporting sectors such as construction, transportation, healthcare and education is also expected to increase at a faster rate. There is also maximum demand for semi-skilled people, especially in welding, fitting and masonry. However, sectors which are unique to Chikmagalur and where skill up-gradation will be required within it are hospitality and coffee processing.

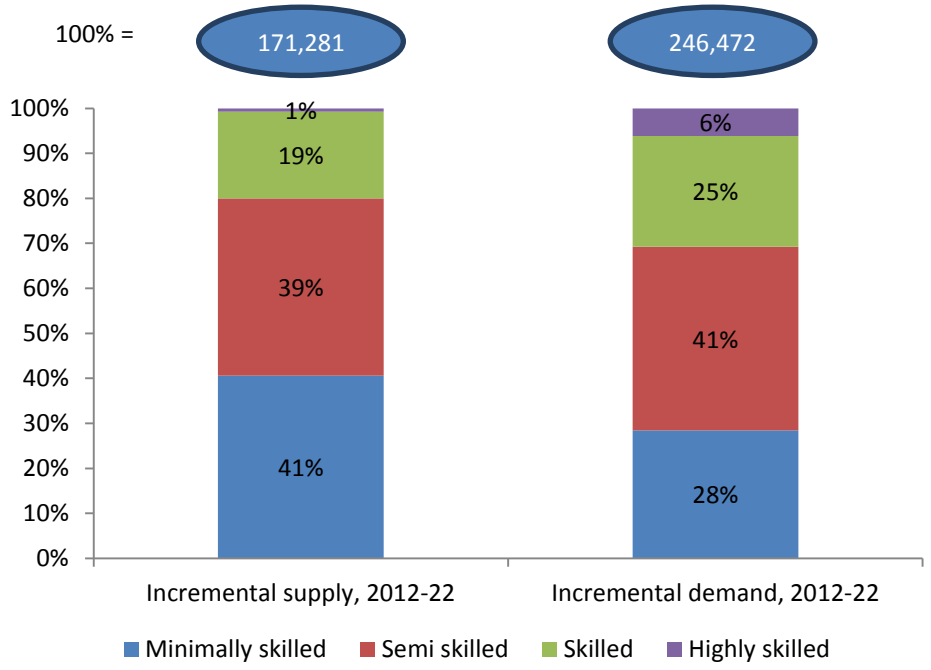
Table 171: Incremental demand in Chikmagalur – 2012 to 2022

SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	46,568	38,785	5,797	1,055	931
BFSI	6,729	-	4,037	2,019	673
Building, Construction industry and Real Estate	21,149	6,345	10,575	3,172	1,057
Chemicals & Pharmaceuticals	207	41	62	62	41
Construction Materials and Building Hardware	1,313	131	854	263	66
Education and Skill Development	6,654	-	-	5,989	665
Food Processing	1,357	407	407	407	136
Healthcare Services	17,914	-	1,791	12,540	3,583
Textile and Clothing	1,576	315	946	236	79
Transportation, Logistics, Warehousing and Packaging	13,019	2,604	7,551	2,604	260
Tourism, Travel, Hospitality & Trade	129,593	25,919	88,123	12,959	2,592
Total	**246,472**	**74,616**	**120,361**	**41,393**	**10,102**

Source: IMaCS Analysis. Note: Numbers for sectors will not add up to the total due to very small numbers accounted for by sectors such as auto and auto components; electronics and IT hardware and furniture and furnishings. Agriculture and allied includes plantation workers.*

The incremental supply of work-force between 2012 and 2022 is estimated at 1.71 lakh. This is lower than the demand of 2.46 lakh. There is high demand particularly in the tourism and hospitality sector. But, there are not enough people who possess these skills, across the value chain. Given the fact that this sector represents the biggest potential of Chikmagalur, skilling is a must.

Figure 99: Skill wise incremental demand and supply in Chikmagalur district – 2012 to 2017



Source: IMaCS Analysis

5. Skill mapping

Based on our field surveys in Chikmagalur district, we have found out that sectors where skilling interventions are required are mainly agriculture and allied, tourism and hospitality and coffee processing. In addition, the district also has youth migrating to find jobs in manufacturing and engineering industries. So, skilling the manpower for functional skills such as fitting, electrical, welding, metallurgy, masonry etc is required. These trades also need to be offered to the youth.

Based on the diagnostics above and our discussions with the key stakeholders in the district, we have identified sectors which will be the employment growth engines in the district in the next five years and will have skill training requirements. While agriculture will continue to be the biggest employer, additional employment will be generated from non-agricultural sectors as well.

Within non-agricultural sectors, as discussed above, Chikmagalur district is home to tourism and coffee sectors.

Thus, in the section below, we have identified only those activities, which can become employment growth engines for the district in the next five years and where there is an opportunity for skill development / up-gradation. The identified sectors are given in table below.

Table 172: Sectors where interventions are required in Chikmagalur– comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Chikmagalur	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing – coffee processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 173: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Food processing – coffee	√	√	√
Tourism, Travel, Hospitality & Trade	√	√	√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Food processing - coffee

The coffee industry in Chikmagalur is about 350 years old. The belief is that a seer smuggled the coffee seeds into the district and planted them in the Baba Budan hills. From then on, the industry has grown. The varieties of Arabica and Robusta are grown in the hills of Chikmagalur. In fact, Chikmagalur has the maximum cultivated area under Arabica in India – 57,000 hectares. As of 2011-12, the state of Karnataka produced 81,605 metric tonne of Arabica and 144,750 metric tonne of Robusta. Of this, the district of Chikmagalur has produced 41,180 MT (about 50 per cent) of Arabica and 37,100 MT of Robusta (second to Kodagu).

To look into the intricacies of coffee crop, Coffee Board is present in Chikmagalur town. Also, a coffee museum exists which has all possible flavours which can be made with the fundamental Arabica and Robusta.

Off late, the coffee industry in Chikmagalur is facing labour shortage due to migration of people outside the district. Also, the workers are not able to reconcile with the daily wages.

Within the coffee industry, the value chain followed in Chikmagalur district is given in Figure 7 below.

Figure 100: Value chain in coffee industry

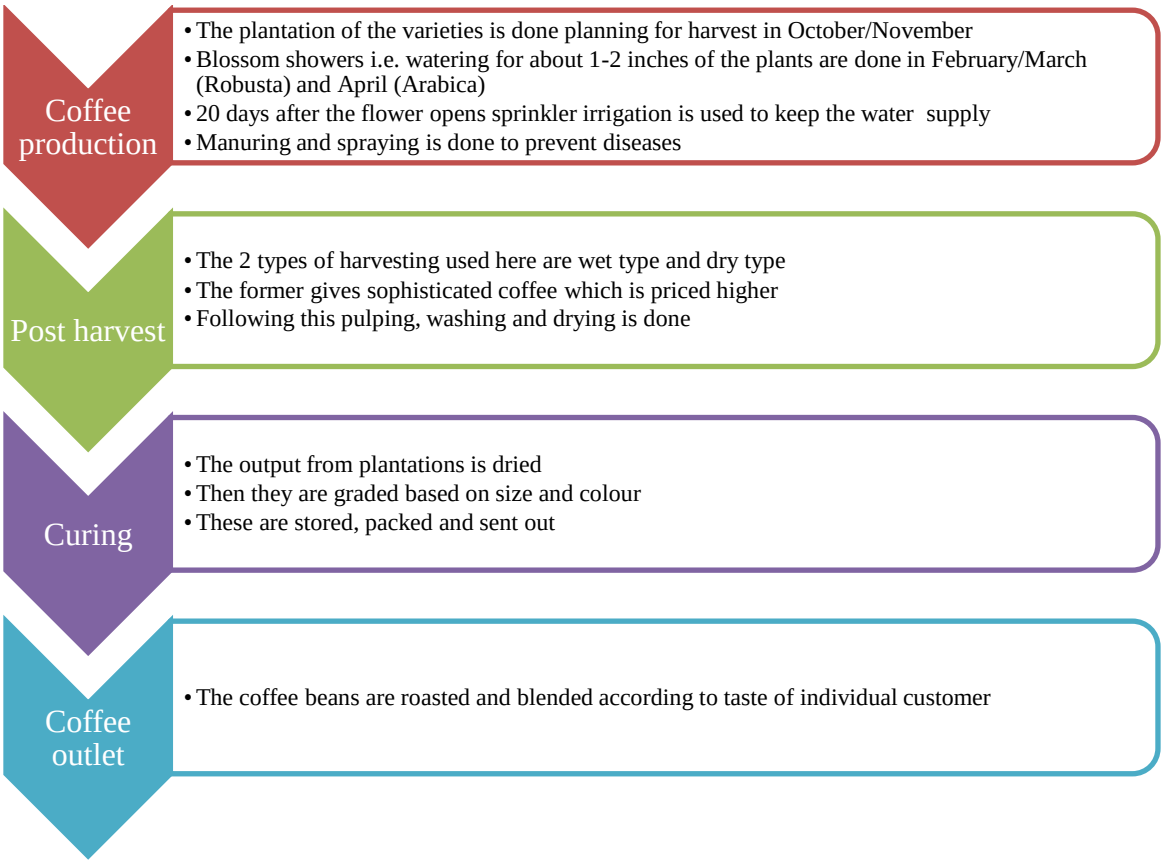


Table 174: Skill gaps in coffee industry in Chikmagalur district

Role, educational qualification	Expected competency	Skill gaps
Coffee growers	▪ Knowledge of harvesting cycle for the crops ▪ Ability to prune the shrubs to optimum length ▪ Ability to do shade regulation to prevent drying of crops ▪ Knowledge of diseases that can affect the crops at different stages ▪ Ability to spray the pesticides and fertilizers in right quantity ▪ Ability to harvest using various techniques depending on the grade of coffee required	▪ Not able to prune the shrubs to the correct height ▪ Shade regulation techniques need to be learnt better ▪ Knowledge of pests like white stem borrower and leaf rust diseases and how to prevent them

Role, educational qualification	Expected competency	Skill gaps
		▪ Correct dosage of spraying is not mastered ▪ Hygienic harvesting and transporting to curing units is becoming difficult. There is lot of loss due to this
Coffee curing units	▪ Knowledge of grading ▪ Ability to operate drying machines ▪ Ability to pack them hygienically without moisture	▪ No skill gaps observed here as on-the-job training is given for a week
Coffee shops	▪ Ability to make the right blend based on customer requirement ▪ Maintain hygiene standards	▪ No skill gaps observed
Helpers / machinery attendants (High school pass)	▪ Ability to help operators with their day to day functions ▪ Help in cleaning the machines ▪ Help in loading and un-loading	▪ Lack the discipline to come and put in the required hours of work

Source: IMaCS Analysis

5.2. Tourism, Trade and Hospitality

The district of Chikmagalur, as stated before, has gained immense popularity as a tourism destination. The Ghat section, the waterfalls and the coffee plantations make the district very picturesque. In addition to this natural beauty, the district is also home to religiously significant spots. About 93 lakh tourists visited all the spots in Chikmagalur in 2011.

Beauty of Chikmagalur – Kudremukh and Hornadu


Table 175: Key spots in Chikmagalur and tourist in-flow statistics for them

Tourist Spot	Brief Description	Domestic tourists (in '000s)
Sringeri	The Math that has significant place in the Advaitha philosophy	4337
Kalsa	Called as Dakshin Khasi. The journey winds through plantations	961
Hornadu	Nestled in hills and has the temple of Sri Annapoorni	2505
Kemmanugundi	Hill station, about 55 kilometres from Chikmagalur town	119
Dattatreya	Hill ranges, north of the Chikmagalur town. Has the highest peak in Karnataka, Mullyanagiri. This attracts trekkers and adventure enthusiast	180

Source: Tourism Department

But, to make the district as the foremost of destinations for tourists, the infrastructure needs to improve. Apart from the Serai, Taj Gateway and Hotel Planter's Court, the main town of Chikmagalur lacks boarding infrastructure. In terms of providing the tourism 'experience', Chikmagalur offers home stays. As a concept, these are doing well, but the standards of the services across most of these establishments leave a lot to be desired.

In addition to the infrastructure, capacity building also needs to be done. Currently, guide and driving training are being offered. In addition to these, special skills development like gliders, trekker guides, etc also need to be provided to increase the tourist traffic.

Table 176: Skill gaps in tourism, trade and hospitality industry in Chikmagalur district

Role, educational qualification	Expected competency	Skill gaps
Hotels and other hospitality establishments (hospitality management degree, basic degree)	▪ Managing all the facilities and the functioning of the work-force. ▪ Supervising of the work conducted by housekeeping ▪ Soft skills and interpersonal skills ▪ Ability to connect with the guest and solve their problems ▪ Knowledge of the local attractions ▪ Ability to brand their offerings ▪ Overall etiquette	▪ Less managerial staff ▪ English speaking difficulties ▪ Customer relationship management difficulties ▪ Lack of professionally trained adventure sport teachers
Tour operators / guides (illiterate to 10th pass, trained by Tourism department)	▪ Route planning and optimisation ▪ Ability to liaison with airline, hotels and local community ▪ Ability to manage tourist expectations ▪ Customer Relationship Management ▪ Soft skills ▪ Understanding of local and English speaking skills	▪ Lack of soft skills ▪ Lack of many professionally trained guides

Source: IMaCS Analysis

6. Recommendations

Recommendations for Chikmagalur focus on the sectors of food processing – coffee and tourism and hospitality. Some of these sectors will have recommendations for the private sector which will directly

translate to skills being developed and the others will need government intervention to facilitate improvements. The educated youth move to Mangalore and Bangalore to primarily work in construction and engineering units. Interventions for skilling in this can also be explored.

Finally, since a significant chunk of employment is concentrated in agriculture, thus, major up-skilling can be done for those workers, updating them of latest techniques of farming. This will help them improve their livelihood opportunities and will increase their income levels.

While the detailed recommendations follow, summary is given in the table below.

Table 177: Key recommendations for Chikmagalur – summary

Sector	For private players	For Government players	For industry
Food processing – coffee	▪ Modern techniques of coffee cultivation ▪ Usage of the new equipments	▪ Research on innovative irrigation technology ▪ Enabling ease of credit to the farmers to scale up ▪ Play a role in increasing the wages	▪ Assistance in establishment of coffee trail to give people who visit Chikmagalur an introduction to coffee industry
Travel, Tourism and Hospitality	▪ Skilling based on the functional roles such as hospitality establishments, tour guides and special personnel ▪ The development of special personnel will lead to creation of experiential tourism that will drive up the	▪ Infrastructure development especially roads, rest rooms in key spots and Yatri Nivas	▪ Set up more hotels in key spots ▪ Facilitate adventure tourism in district

Sector	For private players	For Government players	For industry
	number of tourists who visit the district		

6.1. Food processing - coffee

The coffee sector in Chikmagalur is the oldest in India. The varieties of Arabica and Robusta are cultivated in the higher altitudes of the Ghat sections in the district. As mentioned before, this sector employs over one lakh people. There are both small and large coffee growers. The coffee from the plantations is sent to curing centers where the grading of the seeds is done. These are sent to the coffee outlets.

Private

The private training center can be set up in collaboration with the Coffee Museum in the Chikmagalur town. The Coffee Museum can contribute in terms of its research expertise, especially in increasing the productivity. The curing units have no skill gaps as these are mainly grading work and basic operation of machines. But, where the intervention would be required will be in the plantations. Courses need to be given across several techniques that bring to the fore modern techniques of efficient coffee cultivation. Some of the areas where courses are required are:

- Giving the training on proper weeding and time to weed
- Fertilizing and composting knowledge
- Giving training practically to maintain the shade regulation
- Knowledge on the new pests that spoil the crops and the remedies for it
- The modern technique of interspersing the coffee crops with other plants so that the land is utilized effectively
- Proper drying techniques that will result in less loss due to spoilage
- Usage of modern coffee plantation equipment

Government

The intervention of the Government in a sector like coffee is essential as large number of the work force works in the plantations and there are majority of small farmers. The kind of effort required from the

Government is to promote the idea of sustainable coffee growing that will result in equitable wage as well as opportunities for all. This can be done by the Coffee Center, Chikmagalur.

This kind of successful government intervention has been observed in several coffee growing nations like Columbia and Tanzania. The interventions are directed to both improve the farm productivity as well as coffee community development.

Thus a sustainable coffee industry can be developed. Some of the ways the interventions can occur are:

- Facilitating ease of access to credit for overall good functioning of plantations. This will especially be useful for the small grower
- Giving the ease of market access to small growers also
- Empower the coffee co-operatives to directly establish market relation
- Test innovative irrigation technologies
- Sponsor exchange programmes where growers can go to other successful coffee cultivation zones to learn techniques hands-on
- During the coffee off-season several families are affected and this hardship forces them to leave the sector completely thus depleting the sector of their expertise. The government can sponsor relief fund to provide alternate employment to during this time
- Going the extra mile, the coffee plantation workers can be given skills in the arena of construction and general engineering (fitting, welding, etc). this will help them find opportunities in Mangalore where they generally migrate, looking for employment.
- Increase the wages paid in the plantations. If the average wage per day is accounted for coffee producing states, Karnataka state pays wages of Rs. 130.09 per day. This is lower than Kerala (Rs. 140.17), Tamil Nadu (Rs. 131.99) and Andhra Pradesh (Rs. 144.45)[21].

Industry

Chikmagalur is known as the birthplace of coffee in India. In addition to the naturally beautiful tourism spots, the district can have coffee trail tourism – as it is practiced in Columbia, another coffee hub.

The coffee trail tourism can involve exploring coffee plantations, hiking in the hills and brews preparation in cafes.

[21] Source: Coffee Board - Chikmagalur

The industry co-operation is required for the travelers to access the plantations and also in creation of cafes.

6.2. Travel, hospitality and tourism

The district of Chikmagalur is blessed with beautiful vistas. Starting with the Kudremukh hills, the Mullyanagiri peak, the Baba Budan ranges, Hornadu, Kalsa, Sringeri and Kemmanugundi – Chikmagalur has innumerable spots that promise good holiday. The number of tourists who are visiting the district has been on an increase in the last few years. But, if Chikmagalur aspires to become the prime tourism destination in the state, there are several challenges that the district should overcome. These can be broadly classified into capacity building required for the human resource and the infrastructure investment required. The former can be settled by the private sector and the latter by the government.

Private player

The capacity building is required across the value chain, based on the functional role. All the courses should be certified. They can be based in the district headquarters of Chikmagalur town as most tourists set this as their base destination.

Table 178: Skilling required in tourism in Chikmagalur

Functional role	Training required
Tourist guide/operator	• Communication skills • Route optimization – especially from the main hub to Chikamagalur town to the other spots like Horanadu, Sringeri. • Courses to engage with the customer i.e. soft skills training
Hospitality establishments	• Basic computer courses • Communication skills • Courses to solve basic problems • Hospitality management courses for establishment managers
Special personnel	• Trekking experts

Functional role	Training required
	• Adventure sports (cliff diving, parapenting, etc) experts

Government

- The infrastructure needs to be developed across the districts. The roads are in very bad condition which acts as a deterrent for many tourists. In fact, the road to the peak of Mullyanagiri is filled with hairpin bends and potholes, which reduces the number of people who visit the peak as it is perceived to be a dangerous climb.
- Also, at most of the spots, there are no refreshments and other basic necessities like rest rooms available. Lack of basic amenities makes the trips difficult.
- There are very few star/business class hotels in the district. The government needs to hasten the process of establishing more hotels with policy level decision
- The capacity building from the government's end i.e. guide and language training need to have more batches. Also, in these batches, the batch strength should be increased
- Faculty from reputable hospitality institutes should be hired for these courses, which needs to take place across all the talukas.

In addition to the above, the fact the Chikmagalur is the birth place of coffee and the Cafe Coffee Day chain – Amalgamated Bean Company – has its main curing center here. The tourists who generally arrive here expect excellent cafes that serve the special Arabica and Robusta blends. But, there are minimal cafes that provide quality ambience and brews. The government, especially the Tourism department, can help in the establishment of Cafe – maybe on its own or joining together with a private player. This will try to build a Coffee Experience for the tourists along with the touring of the spots.

Industry

Chikmagalur requires more hotels across the district to facilitate the development of the sector. Some of the interventions that can be undertaken by the industry players are:

- Establish hotels and resorts near key spots
- More number of hotels in the main hub of Chikmagalur town
- Facilitate the tapping of adventure tourism in the district
- Facilitate the creation of experiential tourism

3.11. CHITRADURGA

1. Introduction

Chitradurga district has a total land area of 8,388 sq. km., which is 4.4 per cent of the total State area. It is bordered on north by the Bellary district, on the east by the Anantapur district of Andhra Pradesh, on the west by Davanagere district, on the south east and south by Tumkur district and on the south west by Chikmagalur district.

Chitradurga district is sub-divided into six sub districts and has 1,059 villages. Majority of the population (81.9 per cent) lives in rural areas. Literacy rate in rural areas is 60.4 per cent and in urban areas is 81.1 per cent. Agriculture is the main occupation, employing 72 per cent of the labour force (as of Census 2001). The remaining is in household industry at 3 per cent and other workers[22] at 25 per cent.

Ragi and maize are the key crops grown. Molkalmuru sub district which is about 80 kilo meters from Chitradurga town is famous for its hand woven silk textiles. Sheep breeding is high in Challakere and Hiriyur sub districts. This has led to manufacturing of Kambli (Blanket) in the district. Fruit crop production like Pomegranate, Sapota, Mosambi, etc. is high in Hiriyur and Holalkere sub districts.

[22] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

Few industries such as sponge iron, steel and cement plants are also established in the Chitradurga district due to availability of raw material from Bellary district and limestone mines in Chitradurga district itself. However, some of the industrial units are currently facing problem due to non-availability of raw materials due to banning of iron ore mining following the Supreme Court order since 2011.

The district is located at a distance of around 203 kms from Bangalore and enjoys the benefits from its proximity to Bangalore in terms of market access and better job opportunities.

Table 179: Comparison of Chitradurga district with Karnataka – key indicators

Indicator	Year	Chitradurga	Karnataka
Area, in sq.km.	2001	8,388	191,791
Percentage share in State geographical area, %	2001	4.4%	100%
No. of sub-districts	2011	6	175
No. of inhabited villages	2001	946	27,481
No. of households	2001	2,96,718	10,401,918
Forest area as a % of total geographical area	2001	9.6%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Chitradurga district has a population of 1,660,378 persons i.e. 2.7 per cent of the State population. Majority of the population (24.8 per cent) is concentrated in Chitradurga sub-district, followed by Challakere sub-district at 21.9 per cent, Hiriyur sub-district at 17.4 per cent, Hosadurga sub-district at 14.5 per cent, Holalkere sub-district at 13.0 per cent and Molakalmuru sub-district at 8.3 per cent. While 62.9 per cent of the population in the district is in working-age group (15 to 64 years), about 47.6 per cent is actually working i.e. work participation rate.

The district's literacy rate is 73.8 per cent, which is around 1.8 percentage points lower than the State average of 75.6 per cent, and slightly lower than all India average of 74 per cent. Male literacy at 81.4 per cent is significantly higher than female literacy rate at 66.1 per cent. Chitradurga ranks 14th (among 27 districts) with a Gender Development Index (GDI) value of 0.618 (as per GDI 2001).

Most of the population (81.9 per cent) lives in rural areas. As mentioned earlier, agriculture is also one of the main occupations of the people of the district, employing 71.9 per cent of the labour force as either cultivators or agricultural labourers.

Table 180: Key demographic indicators

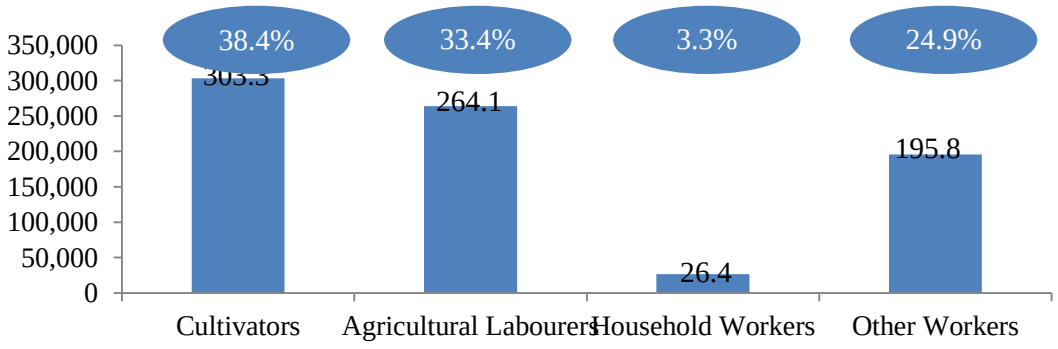
Indicator	Year	Chitradurga	Karnataka
Population, No.	2011	1,660,378	61,130,704
Decadal growth rate of population, %	2001-11	9.3%	15.7%
District's share in State's population, %	2011	2.7%	100%
Urban population as a percentage of total population, %	2001	18.1%	34%
SC population, %	2001	22.1%	16.0%
ST population, %	2001	17.5%	7.0%
Sex ratio, No. of females per 1000 males	2011	969	968
Population density, per sq. km.	2011	197	319
Literacy rate, %	2011	73.8%	75.6%
Main workers, No.	2001	576,035	19,364,759
Marginal workers, No.	2001	145,800	4,170,032
Working age population* as a percentage of total population, %	2001	62.9%	63%
Work participation rate^, %	2001	47.6%	45%
HDI	2001	0.627	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 721,835 persons. Of this, 38.4 per cent are cultivators, 33.4 per cent are agricultural labourers, 3.3 per cent are workers in household industry and 24.8 per cent are other workers.

Figure 101: Chitradurga district's worker profile, as of 2011, in thousands



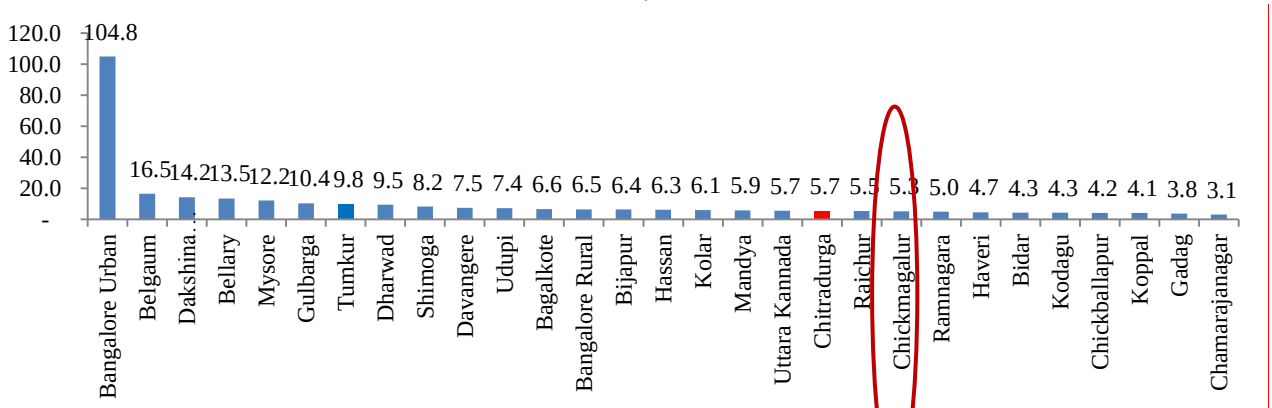
HHI: Household Industry

Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Chitradurga district had the 19th largest Gross District Domestic Product (GDDP) in Karnataka at Rs.572,611 lakh (1.86 per cent of the Gross State Domestic Product). In terms of per capita GDDP, Chitradurga ranked 19th amongst all the districts at Rs.34,418 and was lower than the State average of Rs.53,101.

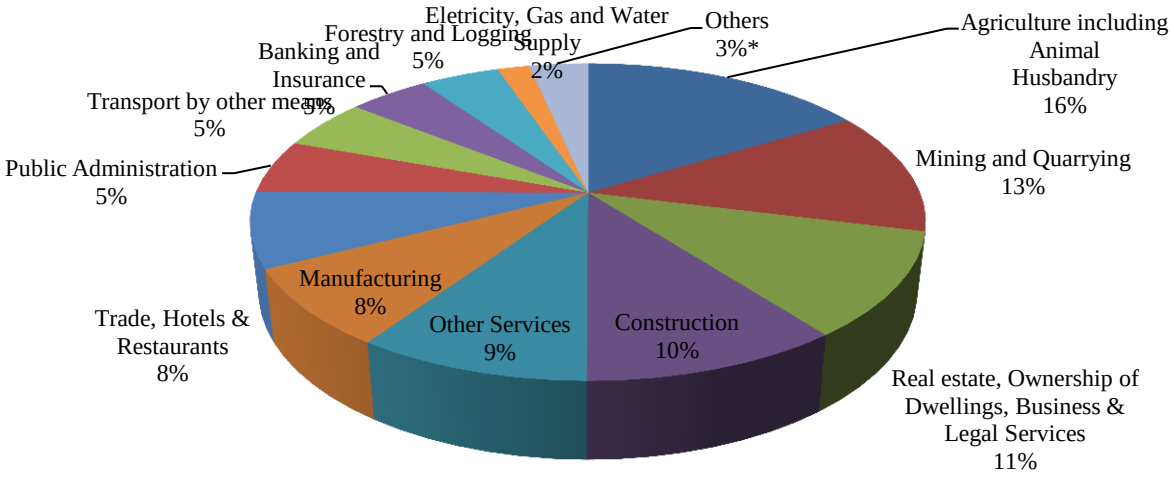
Figure 102: Gross District Domestic Product, in Rs. thousand crore, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 45.9 per cent in 2008-09. This is followed by primary sector at 33.8 per cent and secondary sector at 20.2 per cent.

Figure 103: Sector wise distribution of Chitradurga's GDDP, as of 2008-09, 100% = Rs 5,726.11 crore



**Others include Communication (1.5%), Railways (1.4%), Fishing (0.5%) and Storage (0.04%)*

Source: Chitradurga District At a Glance 2009-10

Agriculture: Of the total area of 8,388 sq. km. in the district, over 56 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by maize, ragi and jowar production. Oil seeds such as groundnut and sunflower production are also high in the district. Fruit crop production like pomegranate, sapota, mosambi, etc. is high in Hiriyur and Holalkere sub districts. However, percentage of horticulture crops to total cropped area is only 7.38 per cent. Under sericulture, Molkalmuru silk is popular, total value of silk produced in the year 2010 is around Rs.12 crore.

Industry: Chitradurga district has seven large and medium scale industrial units with an investment of Rs.154.61 crore, employing 530 persons. Large and medium scale units include Madras Cement Limited, R.K. Powergen Private Limited, V.S L. Steel Limited, Sunray Industries and Prakash Sponge Iron and Power Private Limited. End products manufactured by these companies are cement, sponge iron, pig iron, etc. Chitradurga district is also one of the known pockets for wind mill farming in Karnataka.

Chitradurga also has 1,850 Small Scale Industry units (SSIs) with an investment of Rs.55.50 crore, employing 14,800 persons. Chitradurga sub district has largest number of SSIs at 560 units, employing around 4,480 persons, followed by Challakere sub district with 470 units, employing 3,760 persons. Lowest is Molakalmuru sub district with 120 SSIs, employing 960 persons.
There is significant number of food based, general engineering and textile based SSI units in the district, employing around 54 per cent of the persons employed in SSI units. There are three Industrial Estates and one Industrial Area i.e. Kelakote in Chitradurga district.

Chitradurga district is attracting significant investments from industrial players. During the Global Investors Meet (GIM) held in 2012 in Bangalore, Memorandums of Understanding (MoUs) amounting to Rs.3,896 crore were signed for the district. Once set up, these are estimated to employ around 1,180 persons. In addition, during GIM 2012, Chitradurga has attracted 3 steel plants, which are expected to generate employment for 5454.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 45.9 per cent of GDDP in Chitradurga district. Of all the services, the key services in the district are of 'real estate, ownership of dwellings, business and legal

services' at 10.7 per cent of GDDP, followed by other services at 9.4 per cent and trade, hotels and restaurants at 7.7 per cent.

2.3. State of education

As of 2008-09, Chitradurga district had 2,305 schools, with 2,88,289 students enrolled. There are 1,940 Primary schools and 365 High schools. Number of students enrolled in Primary schools are 2,03,963 and number of students enrolled in High schools are 84,326.

Table 181: School type wise enrollment numbers

	Lower Primary		Higher Primary		High School	
	No.	Students	No.	Students	No.	Students
Government	815	95072	883	41416	111	24713
Aided	3	11102	70	5488	190	37651
Unaided	61	31526	148	9586	93	10291
Others	6	471	21	1748	14	2041
Total	885	138171	1122	58238	408	74696

Source: District Information System for Education

There are 107 Pre-University (PU) colleges with 27,367 students. There are also 16 General colleges, one Medical college, three Polytechnics (for technical education), one Engineering colleges, one Dental college, and 214 Libraries in the district.

Table 182: Higher education infrastructure in Chitradurga district, as of March 2010

Colleges	No.	Students
PU Colleges	107	27,367
General	16	9,670
Medical	1	100
Polytechnic	3	1,198
Engineering	1	1,649
Dental	1	159

Source: Chitradurga District At a Glance 2009-10

For vocational training, Chitradurga district had a total of 59 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, four were Government ITIs, four were

private aided ITIs and remaining 51 were private unaided ITIs. All the 59 ITIs together have a seating capacity of 5,130.

Table 183: Key ITI indicators in Chitradurga district, as of March 2012

Indicator	Value
Total Number of ITIs	59
Number of Government ITIs	4
Number of Private aided ITIs	4
Number of Private unaided ITIs	51
Total Seating capacity	5,130
Student pass rate	70-75%
Student drop-out rate	10%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Chitradurga district, we have found that on an average, of all the students that pass out from an ITI in each year, 65 per cent find jobs in the market. For details on courses offered by ITIs in Chitradurga, refer annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions. While the Government Department offers courses in trades like sheep breeding, exotic sheep breeding, agriculture, horticulture, sericulture, crafting, etc., the Private training institutes are mainly offering computer courses, tailoring courses, etc. For details of training institutes and courses offered, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Chitradurga district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- Students need clarity on career opportunities available to them
- Average salary expected by the students range between Rs.8,000 to Rs.10,000 per month
- Students from good colleges are able to get jobs in Bangalore and prefer getting placed in Bangalore only. Lure of city life and better lifestyle is high.

- Students, who are not able to get admissions in good colleges, prefer ITIs. The latter are also preferred because ITI certification helps in obtaining Government and even private jobs. The low fee is an added advantage.
- Training institutes in Chitradurga lack sophisticated machinery and infrastructure for training. Practical exposure is limited
- Quality of courses and teachers is average. Quality of infrastructure is also average.
- Students are willing to migrate anywhere if better salaries are offered.
- Students don't prefer to take jobs on contract basis with the employers. However they are willing to take such jobs if it is in Bangalore.
- Preference for white collar jobs as compared to blue collar and manual jobs.

3. Developmental concerns

Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Ban on mining:** Banning of mining of iron ore in nearby districts has led to scarcity of mineral resources to Steel industries in Chitradurga. In 2011, the Supreme Court imposed a ban on mining on iron ore in many districts of Karnataka, due to large scale environmental degradation in these areas. Further, in March 2012, the Supreme Court appointed Central Empowered Committee (CEC) which recommended a 10 year prohibition in mining operations in Chitradurga due to illegal extraction of natural resources. Mining is not expected to be allowed till the time all affected areas are properly rehabilitated, which could take up to 10 years or more.
- **Water scarcity:** Water is required in large volumes as process input for steel plants. Ground water level in non-command area of Chitradurga is 7.40 (minimum) and 30.35 (maximum), and with normal rainfall of 486.7 millimetres, the district is not able to support water intensive industries such as steel plants.
- **Shortage of skilled manpower within the district:** The district has many educational institutions providing education and training to the locals. However, locals, especially youth are more prone to moving to Bengaluru for better job opportunities, due to the lure of better city life along with higher compensation packages and standard of living. This has created a shortage of skilled manpower within the district especially for the sectors like construction, hospitality, etc.

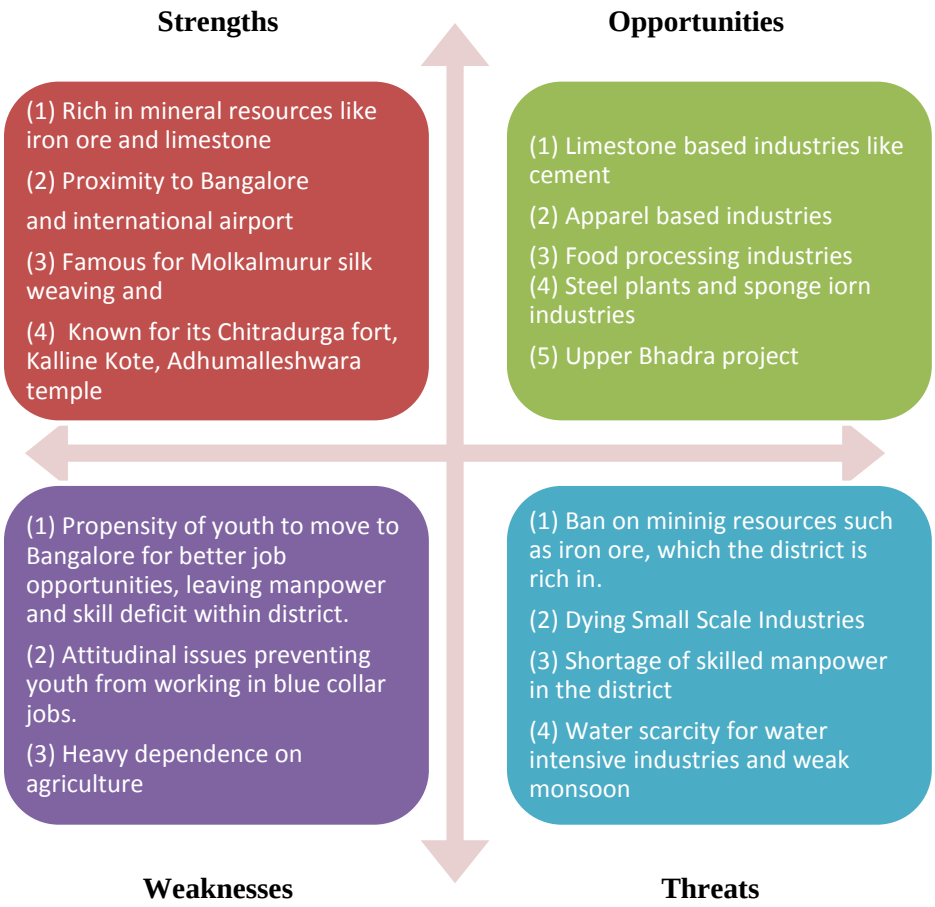
Molkalmuru is famous for its silk materials. There are around 14 silk cooperative societies and 1,864 silk weavers in the sub-district. The weavers do not have adequate knowledge in creating diversified products and technology usage like computer designing, product diversification and usage of technology.

- **Survival of small scale local industries threatened:** Small scale industries like oil mills and rice mills in Chitradurga face threat due to economics of scale as there are not able to pay higher price for the raw materials against the price offered by the large players.

SWOT analysis

Based on the diagnostics of the Chitradurga district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 104: SWOT Analysis of Chitradurga district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 1.54 lakh persons is likely to be generated in Chitradurga district.

Agriculture and allied has the maximum potential in the district and is likely to provide employment opportunities to many. This will be followed by building, construction industry and real estate. Food processing is also a potential growth sector in the district, presence of Food Park in Chitradurga and availability of fruits, cereals and pulses in the district makes food processing industry as an attractive business. In addition, as the economy grows, demand for supporting infrastructure such as health and education is also expected to increase.

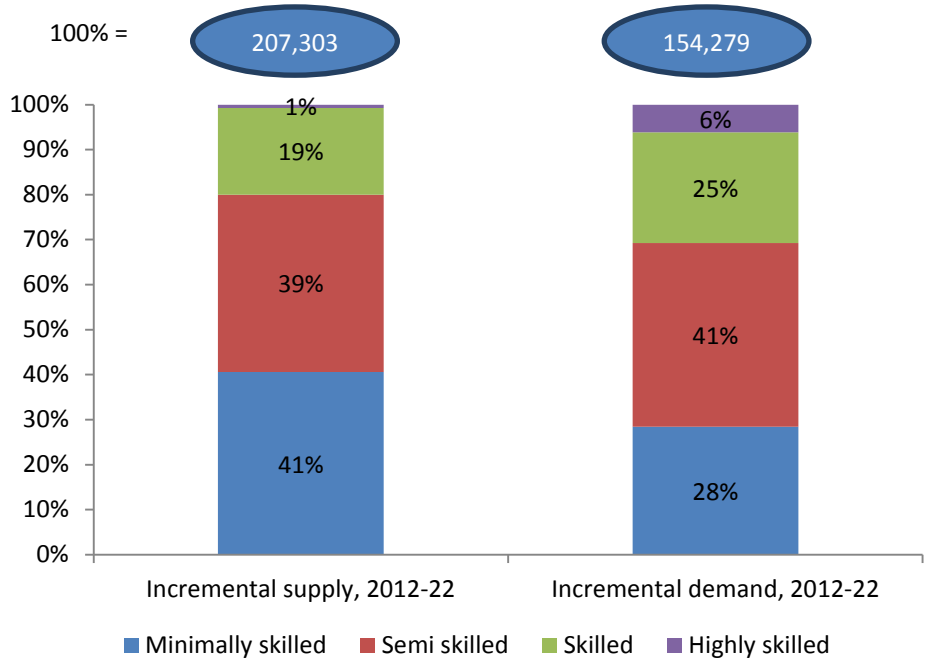
Table 184: Incremental demand in Chitradurga – 2012 to 2022

SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	61,779	51,453	7,691	1,399	1,236
BFSI	5,443	-	3,266	1,633	544
Building, Construction industry and Real Estate	28,132	8,440	14,066	4,220	1,407
Construction Materials and Building Hardware	1,747	175	1,136	349	87
Education and Skill Development	10,975	-	-	9,878	1,098
Food Processing	410	123	123	123	41
Healthcare Services	17,539	-	1,754	12,278	3,508
Textile and Clothing	1,228	246	737	184	61
Transportation, Logistics, Warehousing and Packaging	15,104	3,021	8,760	3,021	302
Tourism, Travel, Hospitality & Trade	10,073	2,015	6,849	1,007	201
Unorganised	349	70	202	70	7
Mining	1,318	264	791	132	132
Total	**154,279**	**65,877**	**45,448**	**34,321**	**8,633**

Source: IMaCS Analysis. Note: Numbers for sectors will not add up to the total due to very small numbers accounted for by sectors such as auto and auto components and furniture and furnishings.

The incremental supply of work-force between 2012 and 2022 is estimated at 2.07 lakh persons. Excess supply in Chitradurga district tends to move to Bangalore for employment.

Figure 105: Skill wise incremental demand and supply in Chitradurga district – 2012 to 2022



Source: IMaCS Analysis

5. Skill Mapping

As mentioned above, of the 19 high growth sectors identified by NSDC, 'textiles and clothing', 'construction materials and building and hardware' and 'food processing' exists in Chitradurga district (in addition to agriculture). Sector comparison of Chitradurga with Karnataka is given in Table 89 below.

Table 185: Sectors present in Chitradurga district – comparison with Karnataka

(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Chitradurga	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		

High Growth Sectors identified by NSDC	Chitradurga	Karnataka
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		
Additional sectors	**Chitradurga**	**Karnataka**
Power		
Sponge Iron		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 186: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Textile and clothing	√	√	
Construction material and building hardware		√	√
Food processing	√	√	√
Others			
Sponge iron	√	√	
Power		√	

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Textiles and clothing industry

As of March 2010, Chitradurga district had 203 textiles based SSIs, employing 1,680 workers. This was the third highest number of units and employment under SSI category in Chitradurga. In addition, there

are around 8,000 weaving families, 10 Cotton Cooperative Societies, 39 Woollen Cooperative Societies and 14 Silk Cooperative Societies in Chitradurga district.

Table 187: Number of weavers in Chitradurga District

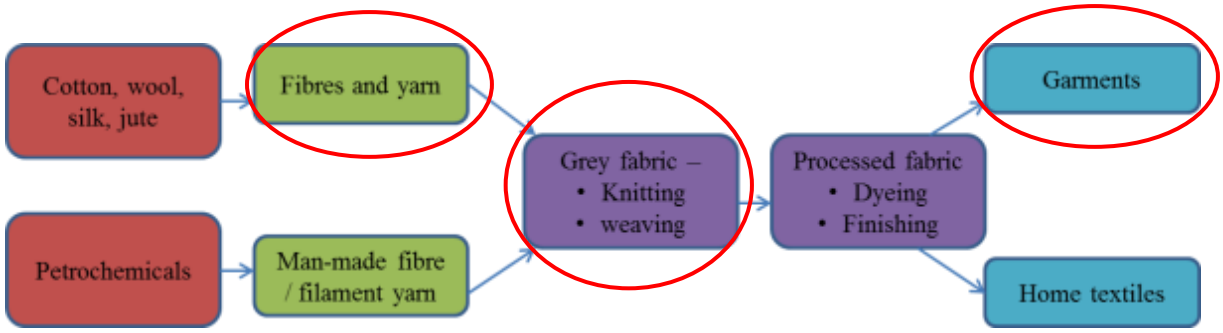
	Nos.
Individual woolen weavers (works 9 months on weaving and 3 months on agriculture work)	5650
Individual silk weavers (continuous workers)	1864
Individual cotton weavers (continuous workers)	490

Source: Department of Handloom and Textile

Based on our discussion with industry players we understand that many youth go out to Bengaluru to work in garment industry. Thus, there are opportunities to set up garment factories in Chitradurga district to leverage on the cheap labour availability.

Figure 24 given below explains the value chain of the textile and clothing industry. Of the entire value chain, only the circled part (silk, wool and garments) exists in Chitradurga district.

Figure 106: Value chain in textiles and clothing industry



Training facilities

Four government funded centres are available to train sewing machine operators providing one month training with a stipend of Rs.2,000. Around 1,000 to 1,200 candidates are trained every year. These centres have trained around 4,000 candidates in the past 4 years. However, many of them are placed in

Bangalore. In addition, few small not for profit entity also provide tailoring training. There is potential to set up garment manufacturing units in Chitradurga itself to leverage on abundant labour force available. Kambli production is mostly done by small units in Challakere cluster. Currently majority are using pit looms. One Kambli is produced by three to four weavers. Skill up gradation training programs is conducted by Ministry of Textile – 2 month handloom skill up gradation training with Rs.75/day during training period. Government training centre has 80 handlooms (2 person per handloom can be trained) and so far Handlooms are also provided to around 80 – 100 persons on completion of training, to increase their lively hood and not for everyone. However, there are around 5,650 weavers are there and currently training has been provided only to 450 weavers.

Table 188: Skill gaps in textiles and clothing in Chitradurga district

Role, educational qualification	Expected competency	Skill gaps
Supervisor (Any Graduate and/or experienced)	▪ Managing all the facilities and the functioning of the work-force. ▪ Supervising of the work conducted by operators / tailors ▪ Knowledge of stitching process ▪ Quality check ▪ People management ▪ Leadership skills ▪ Soft skills	▪ People with supervisory skills are in scarcity in Chitradurga district. Those who are educated with these skills in the district prefer to move to Bengaluru in search of better jobs and higher salary.
Operators / tailors (illiterate to 10th pass)	▪ Proficiency in tailoring / knowledge is required for stitching garments with different specifications. ▪ Good machine control – knowledge of threading of sewing machine, stitching on different shapes, seaming garment components together in various fabrics to specified quality standard	▪ Inadequate knowledge to maintain the machines

Role, educational qualification	Expected competency	Skill gaps
	▪ Knowledge of machine maintenance procedures ▪ Knowledge of pattern making, grading and draping ▪ Ability to understand instructions properly and stitch the garments based on them. ▪ Ability to work in teams / inter-personal skills. ▪ Soft skills	
Quality control executive (Graduate and/or with some experience in garment industry)	▪ Ability to inspect if the garments have been stitched as per given specifications and instructions ▪ Ability to check for quality adherence ▪ Ability to understand and prevent defects like size variations, loose threads, stains etc.	▪ On-the job training provided as such skills usually come from experience.
Helpers (illiterate to 10th pass)	▪ Ability to cut the cloth based on specifications. ▪ Ability to button the stitched garments. ▪ Ability to put labels on the stitched garments. ▪ Ability to iron the ready garments properly. ▪ Ability to iron the garments ▪ Ability to pack the garments in bundles	▪ Basic skills required for this profile, for which no / minimal training required. Mostly provided easily on the job.
Handloom operator – Kambli (Blanket)	▪ Operating of looms ▪ Maintenance of loom ▪ Deducting weaving defects	▪ Process oriented skill up gradation training is required.

Role, educational qualification	Expected competency	Skill gaps
	▪ Ability to find out the reason for loom stoppage and correcting it	
Silk weavers	▪ Operating of looms ▪ Maintenance of loom ▪ Deducting weaving defects ▪ Ability to find out the reason for loom stoppage and rectifying ▪ Knowledge to offer different/diversified products ▪ Embroidery skills ▪ Computer designing ▪ Marketing skills (including export) ▪ Dyeing techniques ▪ Quality checking ▪ Finishing and Packaging skill	▪ Currently they are using jacquard design ▪ Training is required on usage of computers in designing ▪ Ability to create diversified products – new varieties, silk by jute / silk by cotton products ▪ Export market awareness ▪ Dyeing techniques ▪ Processing techniques in terms of finishing and packaging ▪ Embroidery training

Source: IMaCS Analysis

5.2. Sponge iron industry

Currently, there are only two sponge iron and one pig iron large and medium scale companies in Chitradurga district with a total investment of Rs.32.4 crore employing around 346 candidates. Based on our discussion with industry players we understand that Prakash Sponge Iron and Power Private Limited is planning for its expansion to increase its current turnover from Rs.259 crore to Rs.1,500 crore by next five years. In addition to expansion of existing plan, they are also planning to set up integrated power plant in the next two years with a total human resource employed increasing from 110 to 600. Major requirements are 30 per cent diploma engineers, 20 per cent engineers and 50 per cent ITI – all verticals. In addition, two MoUs have been signed following GIM 2010 which is expected to create additional employment opportunity for 310 persons.

Raw material used in sponge iron industry are iron ore, coal and dolomite. These materials are either procured from nearby districts or States. Sometimes coal with lower level of pollutant, sulphur or carbon is also imported from countries like South Africa.

Figure 107: Value chain for sponge iron industry – Pre production

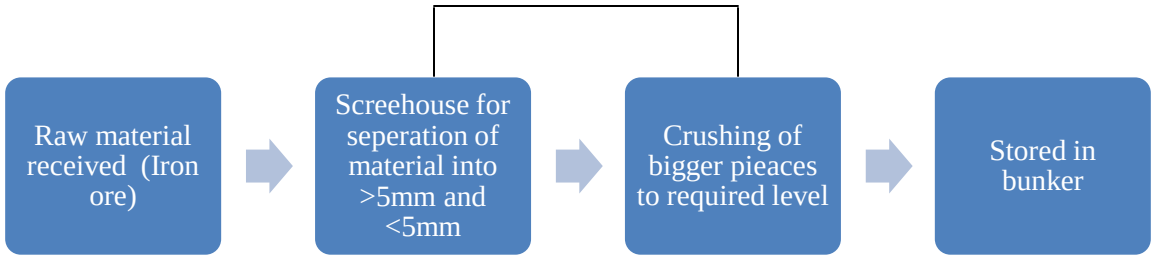


Figure 108: Value chain for sponge iron industry –Production

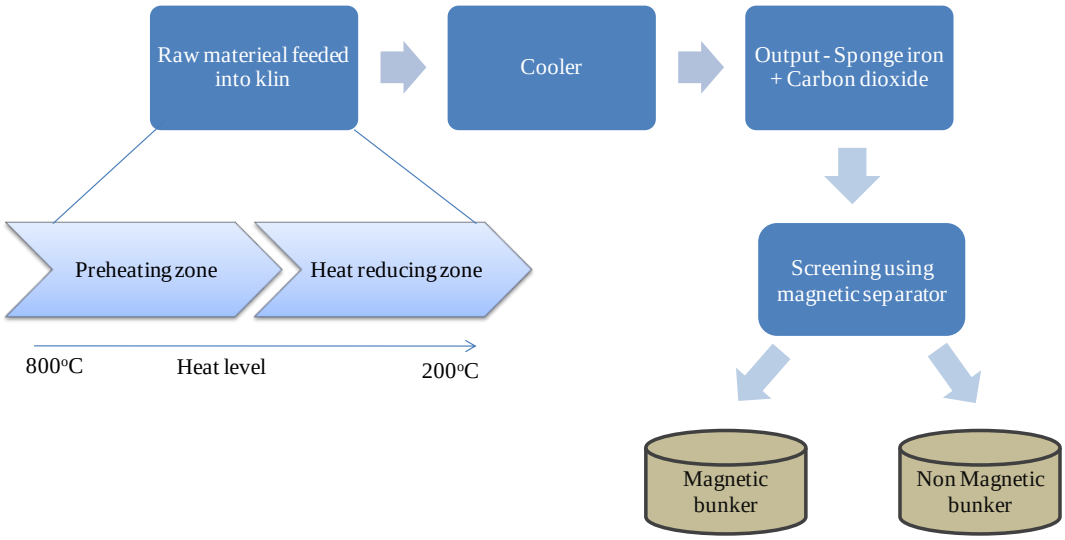


Table 189: Skill gaps in sponge iron industry in Chitradurga district

Role, educational qualification	Expected competency	Skill gaps
Plant manager (B.Tech/B.E /Diploma with experience)	▪ Raw material stock management ▪ Monitoring quality of raw material purchased ▪ People management ▪ Plan to Minimize feed loss ▪ Monitoring the production process ▪ Preparation of shift schedules ▪ Controlling operations through shift in-charge ▪ Addressing problems arising at field level	▪ Process industry related training for B.E and Diploma holders is required ▪ Technology opportunities in sponge iron industries ▪ People management
Trainee (Diploma/ITI with 0-2 years of experience – Mechanical, Electrical and Fitter)	▪ Candidates start their carrier as trainee and then move up in their organisational ladder. E.g. Trainee Fitter – Junior Fitter – Fitter – Senior Fitter - Foremen ▪ Raw material screening ▪ Using weighment system in stock house ▪ Handling furnace related activities ▪ Working in waste gas section	▪ ITI Mechanical /Diploma engineers are employed for stock house activities though the industry needs Engineering Graduates. ▪ Material science and metallurgy ▪ Power distribution system ▪ Industrial automation ▪ Adaptability to heat environment

5.3. Food processing

Chitradurga has around 425 food based SSI units employing around 3,440 persons. As mentioned in the earlier section ragi and maize are popular crops in Chitradurga district. Fruit crop production like pomegranate, sapota, mosambi, etc is also high in Hiriyuru and Holalkere sub districts. Oil seeds such as

groundnut and sunflower are also grown in the district. In addition, based on our discussions we understand that Onions and Coconuts are also grown. Availability of resource creates opportunities for food processing in Chitradurga.

Chitradurga district also has Akshay Food Park in Hiriyur promoted under Public Private Partnership model by Bangalore Food Technology and Services Park Limited, Harsha Seeds and Agro Products Limited and Food Karnataka Limited. The objective of Food Park is to strengthen existing weak food supply chain, to enable food processing and to make the food processing sector globally competitive by adopting large scale integrated operation. Apart from the common facilities, Akshay Food Park has the following specialized facilities which can be used by industries/entrepreneurs:

- Modern modular cold storage of 1200 Metric Tonnes (MT) capacity offering different temperature and humidity conditions
- Warehouse of 3000 MT capacity
- Grading and packing facility for fruit and vegetables – 4 lines with total capacity of 6 MT/hr to handle roundish fruits, Mangoes, Potatoes, Onion and other fruits and vegetables.
- Grading and packaging facilities for cereals, pulses and spices
- Analytical and quality control laboratory
- Technology transfer facilitation centre

However, based on our field visit we understand that Food Park is being used only to a very limited extent and awareness need to be created on the benefits available to farmers and cultivators through Food Park.

Thus, with availability of resource and Food Park there is adequate scope for development of food processing industry in Chitradurga district. Given the nature of the industry and the kind of skill sets required, majority of the employment will be generated for the candidates with educational qualification of 10^{th} standard and below. This will create potential opportunities for training in food processing techniques, handling food processing machines, sales and marketing, self-employment, etc.

5.4. Construction materials and building hardware (Cement)

There is no significant employment potential in the existing cement plants in Chitradurga. However, GIM 2012 has created visibility for these sectors and has attracted business opportunities which are expected to lead to employment generation.

Following GIM 2010, MoU has been signed by Reliance Cementation Private Limited to set up 5 Million Tonnes Per Annum MTPA cement plant in Chitradurga, with an investment of Rs.2500 crore. This is expected to create employment opportunity for 471 candidates. Based on our interactions with industry players the identified employment opportunity will be distributed as follows:

- Post graduation/Engineers/Diploma with experience: 17%
- Graduates (B.Com/B.Sc)/Diploma: 22%
- ITI candidates: 62%

Further following GIM 2012, Vani Vilas Cements Private Limited has also entered into a MoU to set up cement plant in Chitradurga district with an investment of Rs.800 crore and is expected to create employment opportunity for another 1,500 candidates. Though potential employment opportunities exist in the cement sector, the industry needs experienced people and are generally hired from outside the district or state.

As far as steel segment is concerned through GIM 2012, Chitradurga has received MoU and EoIs have been received and is expected to bring in investment of Rs.657 crore which will lead to total employment generation for 5,454.

5.5. Others

In addition to the sectors mentioned above, Chitradurga has reported shortage of skilled manpower in some of the key functions like mechanics, plumbers, electricians, masons, etc.

6. Recommendations

As discussed in the report, Chitradurga has a GDDP of Rs.572, 611 in 2008-09, which is around 1.86 per cent of the Karnataka's GSDP. Majority of the population (81.9 percent) live in rural areas. Agriculture is the main occupation in the district, employing 72 per cent of the labour force while the remaining is in

household industry at 3 per cent and other workers at 25 per cent. The district has potential to grow beyond agriculture; however opportunities in industries such as textile, food processing, construction material and hardware need to be tapped for the same. Thus, we have made recommendations for the following identified industries which can lead to betterment of employment opportunities:

- Textile and clothing
- Food processing
- Construction materials and hardware
- Sponge iron

In addition to the above sectors, agriculture also contributes significant number to employment generation in the district. Any kind of up skilling programs related to technology, process and market linkages will assist the farmers in increasing their livelihood income.

Key recommendations given in the below table summarizes the recommendations for private players and government separately, while the details of the same have been elaborated below the table.

Table 190: Key recommendations for Chitradurga – Summary

Sector	Government	Private training providers	Industry

Agriculture	▪ Agriculture department needs to increase the scope and coverage of the existing schemes which it is currently running in the district
	▪ Some of the focus areas can be
	  ▪ Scientific production methods
	  ▪ Water conservation
	  ▪ Soil conservation
		▪ n/a	n/a

Sector	Government	Private training providers	Industry
Textile and clothing	▪ Provide incentives for setting up of garment units ▪ Provide export market linkage ▪ Encourage movement from pit loom to handloom	▪ Setting up of training centers	▪ Set up garment manufacturing units in the district ▪ Providing market linkage through opening of retail outlets, online sales, etc
Food processing	• Encouraging medium and large scale food processing units • Creating more awareness for Akshay Food Park	• Training in areas such as food processing techniques, handling food processing equipments, etc	• Set large and medium size food processing units • Selling food processing equipments
Construction material and hardware	• Promote setting of more cement and steel industries in Chitradurga district • Faster processing of the existing MoUs	• Setting up training centers and providing training in industry specific process related areas for cement and steel segment.	• Set up cement and steel manufacturing units in Chitradurga
Sponge iron	n/a	• Training centres need to be set to bridge the demand supply gap faced by industry players	n/a
Others	▪ To upgrade the syllabus, infrastructure and faculty in ITIs	Additional areas identified for training are: • Plumber • Masons • Stenographer Quality improvement through more practical	n/a

Sector	Government	Private training providers	Industry
		exposure for • Mechanics • Electricians	

6.1. Agriculture

The district is pre-dominantly agrarian and most of the people are employed in agriculture and allied activities alone. Around 80 per cent of workers are main workers and the remaining 20 per cent are marginal workers. Ragi and maize are the key crops grown.

There isn't much scope for private training providers to participate in the training programmes in the district, as it is not financially viable. People in the rural areas are poor and do not have the capacity to pay for training. Hence the recommendations are given only for Government intervention alone.

Government

- Agriculture department needs to increase the scope and coverage of the existing schemes which it is currently running in the district.
- Some of the focus areas for training can be related to:
  - Scientific production methods
  - Water conservation
  - Soil conservation

6.2. Textile and clothing

Chitradurga district has 203 textile based SSIs, employing 1,680 workers. In addition to small garment units in Chitradurga, there are around 8,000 weaving families, 10 Cotton Cooperative Societies, 39 Woollen Cooperative Societies and 14 Silk Cooperative Societies in Chitradurga district. There are around 5650 woollen weavers and 1864 silk weavers in the district. Some of the issues faced by the sector are usage of old method of production (pit loom), lack of product variations/ new designs, lack of avenues to tap export market, fluctuations in yarn price. As far as training facilities are concerned, there are government funded training institutes for sewing machine operators in Chitradurga training around

1,000 to 1,200 candidates every year with a stipend of Rs.2,000, majority of them are placed in Bangalore due to lack of job opportunities in Chitradurga. In addition there are training centres to bring in process change from pit loom based production to handlooms. However, the available training capacity is insufficient to meet the requirement of the industry in the district.

In addition, weavers in Chitradurga need training in areas such as computer based designing, embroidery works, product diversification in terms of new products, new product material mix (currently products are being made on silk by silk basis, venturing out to variations like silk by jute or silk by cotton), finishing and packaging, etc. which will help the community to improve their livelihood. It is also observed that many weavers have quit the profession due to fluctuations in yarn prices. Some of the interventions required for the development of textile and clothing sector in Chitradurga are:

- More training avenues to bring in design interventions and product variations
- Encouragement to move from pit loom to handloom way of production
- Enabling access to export markets
- Attracting large scale garment units to leverage on abundant labour force available

Private Player

- Setting up training centres through innovative training delivery models, which don't burden the weavers with the training fees. The areas of training that can be considered are:
    - Computer based designing course
    - Embroidery courses
    - Making different varieties of end products
    - Dying techniques
    - Handloom usage and maintenance training
    - Marketing courses on how to access the open market and negotiate on prices both for raw material procurement and for sale of finished materials
    - Sewing machine operators
    - Quality checking

Government

- Increasing the capacity of existing centre to train more number of weavers on handloom and offering handlooms either under grant model or through innovative models like investing in handlooms on behalf of weavers and recovering the investment back from them through providing more market linkage, etc. that are suitable for weavers, considering their income level
- Creating avenues to enable weavers to have access to export market directly
- Encourage setting up of more garment units in Chitradurga district through various promotional initiatives.

Industry

- Set up garment manufacturing units in the district
- Providing market linkage through opening of retail outlets, online sales, etc

6.3. Food processing

Chitradurga has around 425 food based small scale industries employing around 3,440 persons. Ragi and maize are popular crops in Chitradurga district. Fruit crop production like pomegranate, sapota, mosambi, etc is also high in Hiriyuru and Holalkere sub districts. In addition onions, coconuts, and groundnuts are also grown. Availability of resource creates opportunities for food processing in Chitradurga. Akshay Food Park in Hiriyur with facilities such as cold storage, warehouses, grading and packaging for fruits and vegetables, cereals, pulses and spices, quality control laboratory, etc, which is currently under-utilised, makes food processing in Chitradurga a lucrative option. Some of the interventions required for the development of food processing sector in Chitradurga are:

- Encouraging medium and large scale food processing units
- Training in the relevant areas required for food processing industries
- Creating more awareness for Akshay Food Park

Private players

- Private players to set up food processing units in Chitradurga

- Private training centres to be established to provide training in various areas as listed below targeting both existing small scale industries and the large and medium scale units (prospective)
    - Food processing techniques
    - Handling food processing machines
    - Sales and marketing
    - Financial management
    - Self-employment

Government

- Encourage setting up of more large and medium size food processing units
- Creating more awareness for Akshay Food Park

Industry

- Set large and medium size food processing units
- Selling food processing equipments

6.4. Construction material and hardware

There is no significant employment potential in the existing cement and steel plants in Chitradurga. However, GIM 2010 and 2012 has created visibility for these sectors and has attracted business opportunities which are expected to bring in investment of Rs.657 crore in steel which will lead to total employment generation of 5,454 and Rs.1,280 crore in cement which will lead to total employment generation of 1,500. Based on our interaction with industry players the identified employment opportunity will be distributed in cement sector in the below proportion

- Post-graduation/Engineers/Diploma with experience: 17%
- Graduates (B.Com/B.Sc)/Diploma: 22%
- ITI candidates: 62%

Some of the interventions required for the development of construction material and hardware sector in Chitradurga are:

Private players

- Opportunities for private sector to offer training in following areas:
    - Cement industry process related training

- Steel industry process related training
- Safety
- People management
- Handling mining equipment

Government

- Promote setting of more such industries in Chitradurga district
- Faster processing of the existing MoUs

Industry

- Set up cement and steel manufacturing units in Chitradurga

6.5. Sponge iron

There are around two sponge iron and one pig iron large and medium scale companies in Chitradurga district with a total investment of Rs.32.4 crore employing around 346 candidates. Prakash Sponge Iron and Power Private Limited is planning for its expansion to increase its current turnover from Rs.259 crore to Rs.1,500 crore by next 5 years. In addition to expansion of existing plan, they are also planning to set up integrated power plant in the next 2 years with a total human resource employed increasing from 110 to 600. Major requirements are 30 per cent diploma engineers, 20 per cent engineers and 50 per cent ITI – all verticals. In addition, two MoUs have been signed following GIM 2010 which is expected to create additional employment opportunity for 310 persons. Some of the interventions required for the development of construction material and hardware sector in Chitradurga are:

- Training centres need to be set to bridge the demand supply gap faced by industry players

Private players

- Training can be provided in the following areas:
  - Process industry related training for B.E and Diploma holders
  - Technology opportunities in sponge iron industries
  - People management
  - Material science and metallurgy
  - Power distribution system
  - Industrial automation

6.6. Others

Based on our interaction with the stakeholders, we understand that one of the major issues faced in the district by the existing private training providers are lack of recognisable certification and branding for their courses. Intervention of NSDC in terms of certification will help the vocational training sector to address the issue.

Some of the other employment opportunities for which training can be provided by private players / NSDC in the district are:

- Mechanics
- Plumber
- Electricians
- Masons
- Stenographer

Government

- To upgrade the syllabus, infrastructure and faculty in ITIs

3.12. DAKSHINA KANNADA

1. Introduction

Dakshina Kannada, also known as South Canara, is a coastal district in the state of Karnataka in India. It is bordered by Udupi district to the north, Chikkamagaluru district to the northeast, Hassan district to the east, Kodagu to the southeast, and Kasaragod district in Kerala to the south. The Arabian Sea bounds it on the west. Mangalore is the headquarters and chief city of the district.

Dakshina Kannada district has an area of 4,770 square kilometres, and a population density of 416 persons per square kilometre. There are 354 villages in the district and it is sub-divided into five taluks – Bantwal, Belthangady, Mangalore, Puttur and Sulia. Majority of the population at 61.6 per cent lives in rural areas. Other workers[1] are major class of the workers in the district, employing 69 per cent of the labour force (as of Census 2001) followed by household industry (21 per cent) and agricultural workers (including cultivators) at 9.7 per cent.

Mangalore is also the chief port city of Karnataka, handling about 75 per cent of India's coffee exports and a bulk of cashew exports too. It is often used as a staging point for sea traffic along the Malabar Coast. Mangalore has been the centre of economic activity within Dakshina Kannada, seeing major investments in sectors like petroleum and petrochemicals and information technology. Mangalorean firms have a major presence in the tile, beedi, coffee, and cashew nut industry, although the tile industry has declined due to concrete being preferred in modern construction.

Paddy, arecanut and cashewnut are the key crops grown. Fruit production too is a major activity within agriculture with coconut being the major fruit grown within the district. Key mineral reserves include iron ore, bauxite, kyanite, limestone and silica. However, according to a Supreme Court order, iron ore mining was banned in the district in 2011. The ban is yet to be up-lifted. As the district is on the shore of Arabian sea, fishing is one of the major occupations of many people. The major fishing places are Bunder (old harbour), Panambur, Surathkal, Kotekar and Sasihitlu. Red clay tile (Mangalore Tiles) and cashew processing factories also flourish in this district.

The district is called as "Cradle of Indian banking" and is one of the most industrialised districts in Karnataka. Major nationalised banks of India such as Canara Bank, Corporation Bank, Syndicate Bank, Vijaya Bank and private sector Karnataka Bank evolved from this district. Service sector is booming with setting up of professional education institutes and information technology related services (IT & ITES). The district benefits from its location, allowing all major means of transportation – by sea, land (railways and roadways) and air.

Table 191: Comparison of Dakshina Kannada district with Karnataka – key indicators

Indicator	Year	Dakshina Kannada	Karnataka
Area, in sq.km.	2001	4,770	191,791
Percentage share in State geographical area, %	2001	2.5%	100%
No. of sub-districts	2011	5	175
No. of inhabited villages	2001	354	27,481
No. of households	2001	419,644	10,401,918
Forest area as a % of total geographical area	2001	26.9%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Dakshina Kannada district has a population of 20.8 lakh persons - 3.4 per cent of the State population. Majority of the population (46.5 per cent) is concentrated in the Mangalore sub-district, followed by Bantwal sub-district at 19 per cent and Puttur, Bellthangady and Sullya sub-districts

at 14 per cent, 13 per cent and 7.4 per cent respectively. While 66 per cent of the population in the district is in working-age group (15 to 64 years), about 50 per cent is actually working i.e. work participation rate.

The district's literacy rate is 88.6 per cent, which is much higher than the State average of 75.6 per cent as well as the All-India average of 74 per cent. Male literacy at 93.31 per cent is higher than female literacy rate at 84.04 per cent. Of the 30 districts, Dakshina Kannada ranks second on Gender Development Index (GDI), with a value of 0.714.

About 61.6 per cent of the population lives in rural areas with the balance 38.4 percent in the urban areas. Inspite of this, manufacturing and service industries are the main source of occupation for the people of the district, employing 69 per cent of the labour force.

Table 192: Key demographic indicators

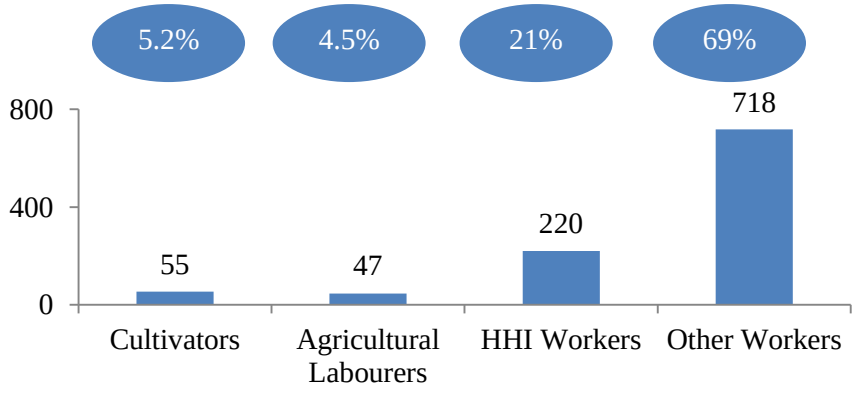
Indicator	Year	Dakshina Kannada	Karnataka
Population, No.	2011	2,083,625	61,130,704
Decadal growth rate of population, %	2001-11	9.8%	15.7%
District's share in State's population, %	2011	3.4%	100%
Urban population as a percentage of total population, %	2001	38.4%	34%
SC population, %	2001	6.9%	16.0%
ST population, %	2001	3.3%	7.0%
Sex ratio, No. of females per 1000 males	2011	1018	968
Population density, per sq. km.	2011	457	319
Literacy rate, %	2011	88.6%	75.6%
Main workers, No.	2001	841,509	19,364,759
Marginal workers, No.	2001	104,881	4,170,032
Working age population* as a percentage of total population, %	2001	66.4%	63%
Work participation rate^, %	2001	49.9%	45%
HDI	2001	0.72	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 9.5 lakh persons. Of this, five per cent are cultivators, five per cent are agricultural labourers, 21 per cent are workers in household industry and 69 per cent are other workers.

Figure 109: Dakshina Kannada district's worker profile, as of 2011, in thousands

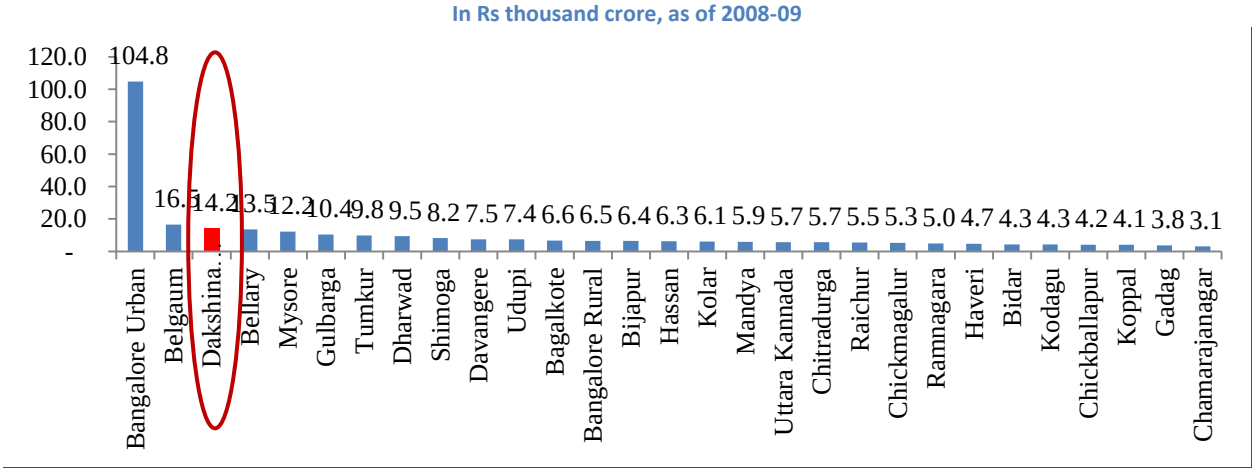


HHI: Household Industry
Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Dakshina Kannada district had the third largest Gross District Domestic Product (GDDP) in Karnataka at Rs 14,196.7 crore (4.6 per cent of the Gross State Domestic Product). In terms of per capita GDDP though, it ranked fourth amongst 30 districts at Rs 68,253. This was considerably higher than the State average of Rs 53,101.

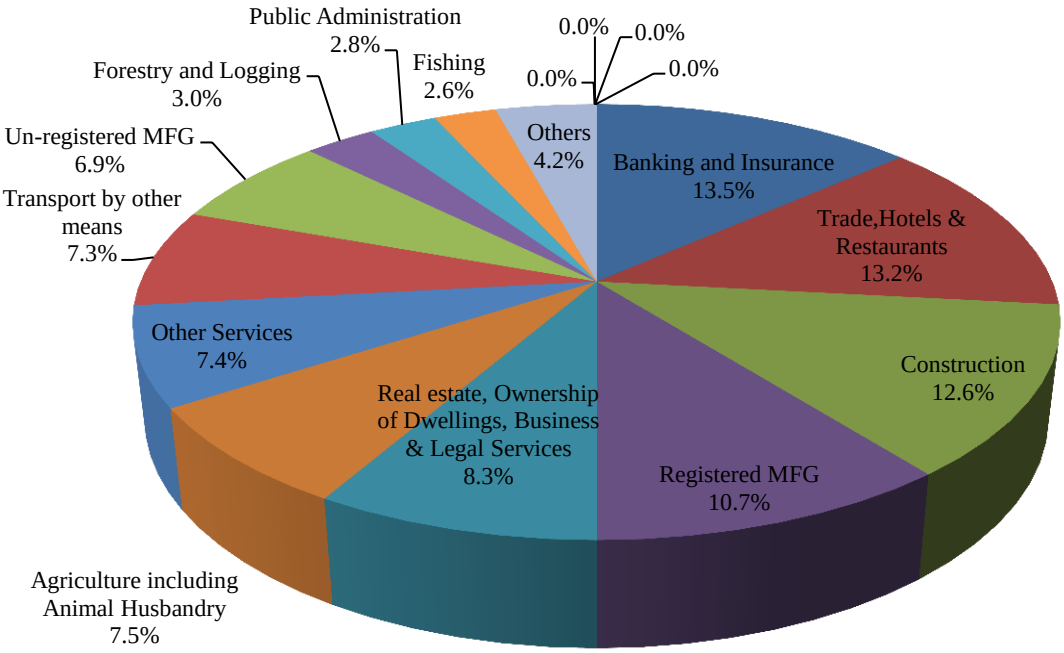
Figure 110: Gross District Domestic Product, In Rs thousand crore, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 55.5 per cent in 2008-09. This is followed by secondary sector at 31.4 per cent and primary sector at 13.1 per cent.

Figure 111: Sector wise distribution of Dakshina Kannada's GDDP, As of 2008-09, 100% = Rs 14,196.7 crore



Source: Dakshina Kannada District at a Glance 2009-10

Agriculture: Of the total area of 4,770 sq. km. in the district, over 27.4 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of paddy under food crops and cashewnut, arecanut and coconut under commercial crops. For details of crops grown in Dakshina Kannada district, refer to annexures.

Industry: As of 31st December 2011, Dakshina Kannada district had 20 large and medium scale industrial units, employing 7,523 persons. The major companies include Mangalore Refinery and Petrochemicals Ltd., Mangalore Chemicals and Fertilizers, Kudremukh Iron Ore Project, BASF India and Ruchi Soya Ltd (Refer to annexures for complete list). End products manufactured included petroleum and petro-

chemicals, chemicals, fertilisers, Liquefied Petroleum Gas filling, dyes and detergents, edible oil, other food processing based products, iron pellets etc.

Dakshina Kannada also has 18,009 Small Scale Industries (SSIs), employing 125,040 persons. As of March 2010, majority of these were food and intoxicant based industries at 21.4 per cent, followed by wood based industries at 15.8 per cent, job works and repairs based industries at 11.2 per cent, textile based industries at 9.4 per cent and remaining in others. Refer to annexures for details. Also, the district has six industrial areas, totalling 1,363.1 acres of land.

Dakshina Kannada district is attracting significant investments from industrial players. During the Global Investors Meet (GIM) held in 2010 in Karnataka, three Memorandums of Understanding (MoUs) amounting to Rs 15,857.30 crore were signed for the district. Once set up, these are estimated to employ 1,258 persons. Of the three, currently only one project is under implementation. For detailed status of these projects, refer to annexures.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 55.5 per cent of GDDP in Dakshina Kannada district. Of all the services, the key services in the district are of banking and insurance at 13.5 per cent of GDDP, followed by trade, hotels and restaurants at 13.2 per cent, and real estate, ownership of dwellings, business and legal services at 8.4 per cent.

2.3. State of education

As of March 2011, Dakshina Kannada district had 1,931 schools, with 339,864 students enrolled. The drop-out rate was low at 0.06 per cent in primary schools. This is much lower than the State average of 4.6 per cent for lower primary and 8.1 per cent for higher primary schools.

There are 155 pre-university (PU) colleges with 48,471 students. There are also 118 general colleges, 10 medical colleges, seven polytechnics (for technical education), nine engineering colleges and five dental colleges. For details of courses offered by polytechnics, refer to annexures.

Table 193: School education infrastructure in Dakshina Kannada district, as of March 2011

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Govt.	289	73,409	667	33,858	171	39,861
Aided	17	35,793	212	19,163	107	38,646
Unaided	56	55,579	213	17,768	199	25,787
Total	362	164,781	1,092	70,789	477	104,294

Source: District Information for School Education, Karnataka, 2011-12

Table 194: Higher education infrastructure in Dakshina Kannada district, as of March 2010

Colleges	No.	Students
PU Colleges	155	48,471
General	118	42,243
Medical	10	5626
Polytechnic	7	4,657
Engineering	9	13,889
Dental	5	2,245

Source: Dakshina Kannada District at a Glance 2009-10

For vocational training, Dakshina Kannada district had a total of 30 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, five were Government ITIs, 13 were private aided ITIs and remaining 12 were private unaided ITIs. All the 30 ITIs together have a seating capacity of 5,542.

Table 195: Key ITI indicators in Dakshina Kannada district, as of March 2012

Indicator	Value
Total Number of ITIs	30
Number of Government ITIs	5
Number of Private aided ITIs	13
Number of Private unaided ITIs	12
Total Seating capacity	5,542
Student pass rate	85-90%
Student drop-out rate	5%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Dakshina Kannada district, we have found that on an average, of all the students that pass out from an ITI in each year, 90 per cent find jobs in the market. For details on courses offered by ITIs in Dakshina Kannada, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and private Institutions. While the Government Department offer courses in trades such as fisheries, tailoring, agricultural practices etc., the private training institutes are mainly offering courses in nursing, hospitality, computer hardware, software and networks. For details of training institutes and courses offered, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Dakshina Kannada district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- Students from good colleges are able to get jobs locally as well as in Bengaluru and other major cities in the country. There is no particular preference to stay and work within the district itself.
- Others prefer to study at various polytechnic colleges and at ITIs post which they look to migrate either abroad or towards Mumbai and Pune.
- Though the training institutes in Dakshina Kannada have adequate infrastructure facilities they lack modern day machinery and related infrastructure for practical training.
- No adequate training is given to students in the area of industrial safety, safety to be observed while handling machinery etc.
- The ITIs face a problem of inadequate raw materials which the students can use during their practical training.
- First preference as far as work is concerned is to migrate, either abroad or to bigger cities within the country. This is quite unique in Dakshina Kannada as the district in itself has a lot of job opportunities in the manufacturing as well as service sectors.
- There is a preference for white collar jobs as compared to blue collar and manual jobs.

3. Developmental concerns

Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Shortage of skilled manpower for the manufacturing industries:** Most of the manufacturing industries in the district face a serious problem of not being able to find requisite man power locally. This is primarily because of two reasons:-
    - **Shift towards service sector jobs:** The youth within the district prefer working in organisations compared to manufacturing setups due to various reasons including better pay, better working conditions, easier physical work (as compared to manufacturing work) etc. Manufacturing companies, especially medium and small scale units are not able to compete with service organisations on the pay front.
    - **Migration of skilled labour:** The migration in the district happens on two fronts. The district has traditionally seen migration of semi skilled workers like electrician, plumber, welder etc go abroad for better pay the skill sets they posses, especially the Middle East. The other major migration happens towards other cities like Mumbai, Pune and Bangalore for better job opportunities (auto and IT companies), higher pay packages (compared to Mangalore) etc.

- **Raw material shortage to the Iron and Steel companies:** The district has many companies, both large corporations like Kudremukh Iron Ore Company Limited (that has its own mine too which was closed post Supreme Court's ban on mining in the state) and various other small companies, which are a part of the downstream iron and steel industry. These companies have been hit majorly by a huge shortage of raw materials due to a ban on mining in the state by the Supreme Court in 2011.

- **Dying small scale local industries:** Mangalore tiles are a type of tiles native to the city of Mangalore. These red tiles, prepared from hard laterite clay, were in great demand once throughout India, Myanmar, Sri Lanka, and the Far East and are even shipped to East Africa, the Middle East, Europe, and Australia. Today this industry is dying due to a shift in preference to concrete for roofing in modern construction.

SWOT analysis

Based on the diagnostics of the Dakshina Kannada district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 112: SWOT Analysis of Dakshina Kannada district

4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 4.75 lakh persons is likely to be generated in Dakshina Kannada district.

The sector with maximum potential demand in terms of employment for the period 2012-2022 is Travel, tourism and hospitality, likely to provide employment opportunities to many followed by Building, Construction industry and Real estate, Transportation, Logistics, Warehousing and Packaging and

Healthcare services. In addition, as the economy grows, the resultant urbanisation will lead to a growth in organised retail.

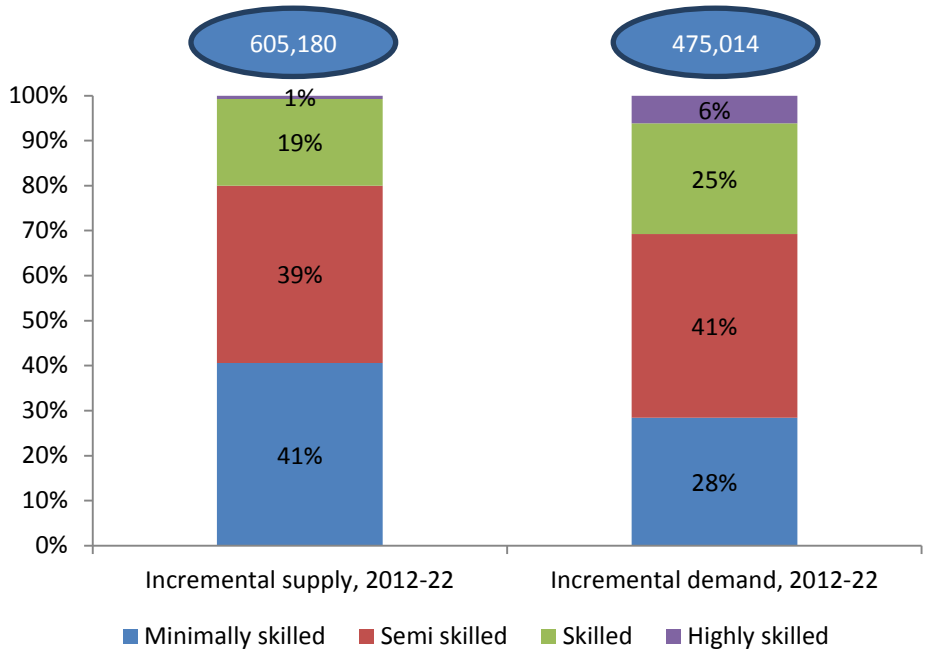
Table 196: Incremental demand in Dakshin Kannada – 2012 to 2022

SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	10,986	9,150	1,368	249	220
Auto and Auto component	1,201	120	781	240	60
BFSI	16,801	-	10,081	5,040	1,680
Building, Construction industry and Real Estate	83,943	25,183	41,972	12,592	4,197
Chemicals & Pharmaceuticals	558	112	168	168	112
Construction Materials and Building Hardware	5,213	521	3,389	1,043	261
Education and Skill Development	14,141	-	-	12,727	1,414
Food Processing	12,673	3,802	3,802	3,802	1,267
Furniture and Furnishings	980	392	392	147	49
Healthcare Services	20,015	-	2,002	14,011	4,003
IT & ITES	95,547	-	66,883	23,887	4,777
Organised Retail	21,759	2,175	15,231	3,264	1,088
Textile and Clothing	2,485	497	1,491	373	124
Transportation, Logistics, Warehousing and Packaging	47,684	9,537	27,657	9,537	954
Tourism, Travel, Hospitality & Trade	140,489	28,098	95,533	14,049	2,810
Unorganised	537	107	311	107	11
Total	**475,014**	**79,695**	**271,058**	**101,234**	**23,027**

Source: IMaCS Analysis

The incremental supply of work-force between 2012 and 2022 is estimated at 6.05 lakh persons. This is much higher than the persons needed within the district from an overall perspective. This is primarily due to the existing educational infrastructure which attracts students from all over the State as well as the country. There is a particular shortage of supply in the highly skilled manpower section, which points to the need to setup and encourage higher learning within the districts especially in the field of medical and engineering.

Figure 113: Skill wise incremental demand and supply in Dakshina Kannada district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on the diagnostics above, demand and supply numbers forecasted and our discussions with the key stakeholders in the district, we have identified sectors which will be the employment growth engines in the district in the next five years and will have skill training requirements. While services will continue to be the biggest employer, additional employment will be generated from manufacturing sectors also.

Within manufacturing and service sectors, as discussed above, Dakshina Kannada district is home to many large scale industries. However, as per our discussions with some of the existing units, there are no significant expansion plans in the next five years, which could lead to employment creation. Thus, in the section below, we have identified only those activities, which can become employment growth engines for the district in the next five years and where there is an opportunity for skill development / up-gradation. The identified sectors are given in the table below.

NSDC has conducted skill mapping studies across 19 high growth sectors earlier. Of those, 11 sectors exist in Dakshina Kannada district which have been identified as the high growth ones. There are other manufacturing and engineering industries as well, which do not have significant employment generation potential, but are facing shortage of skilled manpower for functional skills such as electrical, masonry, machining, welding, fitting etc.

Table 197: Sectors where interventions are required in Dakshina Kannada district – comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Dakshina Kannada	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		
Additional sectors	**Dakshina Kannada**	**Karnataka**
Petroleum and Petrochemicals		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 198: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Banking and Financial Services Insurance	√		√
Building, Construction industry and Real Estate services	√		√
Education and Skill Development Services			√
Food Processing	√	√	√
Healthcare	√		√
IT and ITES			√
Organised Retail		√	√
Transportation, Logistics, Warehousing and Packaging			√
Tourism, Travel, Hospitality & Trade		√	√
Unorganised sector (Fisheries)			√
Petroleum and Petrochemical	√		√
Others (Manufacturing, engineering etc.)			√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the following section.

5.1. Banking and Insurance Industry

The district is called as "Cradle of Indian banking". Two of the nineteen banks nationalised during the first half of the 20th century were established in Mangalore: Canara Bank, founded in 1906 by Late Shri Ammembal Subba Rao Pai, and Vijaya Bank, founded in 1931 by Late Shri A B Shetty. Karnataka Bank, founded in Mangalore in 1924, was one of the largest banks not taken over by the Government. In addition to these, two banks were established in nearby towns. Corporation Bank was founded in Udupi by Late Khan Bahadur Haji Abdulla Haji Kasim Saheb Bahadur in 1906, and Syndicate Bank was co-founded in Manipal by Dr. T M A Pai, Sri Upendra Ananth Pai, and the Mangalorean Sri V S Kudva in 1924.

As of March 31st, 2010 there were more than 350 commercial bank branches in the district of Dakshina Kannada with a total deposit base of Rs. 14,382 crore. Apart from the regular deposit and loan services, banks also offer a variety of other financial products through their retail branches including life and general insurance products, mutual funds, in-house wealth management services etc.

The skill gaps as observed within the banking and insurance industry of Dakshina Kannada are as follows:-

Table 199: Skill gaps in Banking Industry in Dakshina Kannada district

Role, educational qualification	Expected competency	Skill gaps
Branch Manager (Graduate or Post Graduate with relevant experience in banking)	▪ Complete knowledge of all of the banks products and operating procedures. ▪ Through understanding of all RBI guidelines and regulations. ▪ Ability to create and maintain relationships with various customers of the branch. ▪ Ability to drive employees to achieve set targets. ▪ Ability to troubleshoot any problems arising at the branch level quickly. ▪ Escalation of critical issues to the zonal/regional offices.	▪ Lack interpersonal skills and effective people management. ▪ Inadequate customer oriented focus/service management. ▪ Ineffective communication skills.
Operations Executive/Officer (Graduate)	▪ Through knowledge of bank's operations. ▪ Basic understating of the RBI guidelines related to banking operations. ▪ Understanding of the standard operating procedures ▪ Complete knowledge of how the Bank's MIS system, accounting systems, software used for recording transactions, tracking all customer accounts, preparing reports etc. ▪ Basic knowledge of computers	▪ Inadequate knowledge of banking laws and market practices. ▪ Limited computer knowledge. ▪ Inadequate understanding of the standard operating procedures of the bank.

Role, educational qualification	Expected competency	Skill gaps
	▪ Ability to communicate with co-workers and managers.	
Credit Executive/Officer (Graduate with experience/ Post Graduate)	▪ Complete understanding of RBI guidelines with relation to the products he or she is dealing with. ▪ Through knowledge of the bank's policy with relation to the products being dealt with. ▪ Ability to conduct financial analysis on customer applications received. ▪ Understanding of risk rating/scoring methods.	▪ Inadequate understanding of the product policy and RBI guidelines. ▪ Limited knowledge of risk rating, financial analysis etc.
Sales Executive (Graduate with Experience or Post Graduate with no experience)	▪ Understanding of retail bank products ▪ Knowledge of bank procedures and KYC norms ▪ Awareness of regulatory norms ▪ Excellent communication skills ▪ Ability to understand client requirements and suggest suitable product. ▪ Ability to convince customers to buy products suitable to them. ▪ Basic understanding of customer relationship management.	▪ Limited selling skills, especially cross selling and up selling ▪ Inadequate communication skills ▪ Limited understanding of the banks products ▪ Difficulty in comprehending the un stated needs of the customer

Source: IMaCS Analysis

5.2. Building, Construction industry and Real Estate services

Mangalore is the fastest growing non metro in the South India after Kochi. This is accompanied by rapid rise in infrastructure as well as real estate construction (both commercial and residential) in the district.

Construction of seven special economic zones (SEZs) has been given approval by the Board of Approval, Government of India. This apart, with a boom in organised retails urbanisation in Mangalore a large number of malls and other commercial spaces have come up. Already a few malls including City Center mall (2nd biggest mall in Karnataka), Bharath Mall , Empire Mall (Mohtisham), Avenue (Inland) are operational and many are in pipeline - Excel-Mischief Mega Mall, Time Square, Pio Mall, Golden Harvest Mall, Mangalore Central Mall, Mak Mall, Inland Galore, Golden Square, Prestige Forum, Plama Mall.

On the infrastructure front the Karnataka Government is planning to build an expressway between Sakleshpur (Hassan) and Gundia (Dakshina Kannada) including a 18.5 km multi stage tunnel through the ghat section at Rs. 4,800 crore. Also, projects like Mangalore airport runway extension are also on the anvil.

The skill gaps identified within this sector in Dakshina Kannada are:-

Table 200: Skill gaps in Building, Construction and Real Estate services in Dakshina Kannada district

Role, educational qualification	Expected competency	Skill gaps
Project Manager (Post Graduate with relevant experience of 3 to 5 years)	▪ Managing all the facilities and the functioning of the work-force. ▪ Basic knowledge of construction equipment ▪ Ability to understand technical drawings and thus the project design ▪ Basic understanding of hydraulics electrical knowledge and piping ▪ Ability to ensure compliance to construction approvals and laws and understand legal issues associated with the industry ▪ Ability to manage costs, quality and	▪ Lack of communication and team building skills ▪ Insufficient ability to manage multiple contractors and resolve conflicts ▪ Inadequate project management skills ▪ The project manager may not always know the local language creating barrier of communication.

Role, educational qualification	Expected competency	Skill gaps
	ensure on-time delivery of project ▪ Sufficient knowledge of the local language to be able to communicate with contractors and labourers ▪ Ability to effectively manage contractors and ensure that contract specifications are being met ▪ Ability to ensure that safety and health norms are adhered to. ▪ Ability to articulate project objectives to team members, coordinate and motivate the site team	
Supervisors/ Project Engineer (Engineer graduates)	▪ Knowledge of construction equipment and their functions and the ability to ensure that the equipment is maintained as per standards. ▪ Basic technical knowhow related to various aspects of construction including architecture, electrical wiring, plumbing etc. ▪ Ability to communicate effectively with all workmen and resolve disputes as and when they arise. ▪ Ability to manage skilled and unskilled workmen and allocate work properly to all. ▪ Ability to schedule preventive maintenance activities and undertake	▪ Civil engineers hired for this role usually do not have industry relevant and practical knowledge of the construction process. ▪ Lack ability to develop and comply with a Preventive Maintenance schedule. ▪ Inadequate orientation to develop and adhere to safety norms at construction site. ▪ Lack of communication and team management skills.

Role, educational qualification	Expected competency	Skill gaps
	breakdown maintenance. ▪ Ability to communicate and implement safe practices. ▪ Understanding of legal issues associated with the industry.	
Skilled worker – Mason, Carpenter, Electrician, Plumber etc. (ITI students or 10th to 12th pass with relevant experience of 2 to 3 years)	▪ Complete technical knowledge of relevant field. ▪ Ability to operate key equipment, for example cranes. ▪ Knowledge of construction specific areas, example - there is a need for carpenters engaged in the Construction industry to be aware of lining, levelling, and finishing skills. ▪ Understand machine operations and basic machine troubleshooting. ▪ Ability to comply with safety and quality measures. ▪ Basic knowledge of construction engineering. ▪ Ability to communicate and coordinate with unskilled workmen effectively.	▪ Such technicians are not abundantly available in the district because of a strong migratory pattern – abroad as well as bigger cities within the country. ▪ Inadequate knowledge of construction specific areas. ▪ Lack of basic knowledge of handling machines used in construction.

Source: IMaCS Analysis

5.3. Education and Skill Development Services

Dakshina Kannada and Mangalore city especially has become one of the important educational centres in India. Quality professional education offered by two districts of Dakshina Kannada and Udupi has attracted students from all over the country and even from abroad. Mangalore University (established in

1980) is located at Konaje about 18 km to the south-East of Mangalore & Manipal University (Udupi) are located about 60 km north of Mangalore city.

Since the 1980s, there have been a large number of professional institutions established in a variety of fields including engineering, medicine, homoeopathic medicine, dentistry, business management and hotel management. The earliest schools established in Mangalore were the Basel Evangelical School (1838) and Milagres School (1848). The Kasturba Medical College established in 1953, was India's first private medical college.

Today, Dakshina Kannada has over 17 engineering colleges, six medical colleges, five dental colleges, 14 physiotherapy colleges, 19 nursing colleges, 30 ITIs, 11 Polytechnic colleges, six hotel management institutes, 13 Bed. colleges / teacher training institutes and over 38 colleges in the field of Law, Arts, Commerce, Science and Business Management attracting students from all over the country. In addition, the district has several private training institutions. This sector is poised for growth in the near future with further demand for quality educational institutes.

The skill gaps identified in this sector include:-

Table 201: Skill gaps in Education and Skill Development industry in Dakshina Kannada district

Role, educational qualification	Expected competency	Skill gaps
Head of Department (doctorate/post graduate degree holder with over 10 years experience)	▪ Ability to manage departmental activities. ▪ Ability to allocate the right staff to the right course ▪ Knowledge of current trends, research conducted across the world in the relevant field. ▪ Ability to incorporate them in the curriculum ▪ Handling some key classes	▪ Inadequate knowledge of current trends in the research field (across the world). ▪ Inadequate teacher/ faculty management skills

Role, educational qualification	Expected competency	Skill gaps
Teachers/lecturers/training officers(Post graduate/graduate degree in the respective field)	▪ Through knowledge of the subject matter to be taught. ▪ Ability to disperse knowledge to students and effective handling of classes. ▪ Ability to appraise HoD of the progress reports ▪ Knowledge of latest techniques ▪ Understanding of various pedagogies. ▪ Ability to give industry exposure to students.	▪ Lacks knowledge of industry practices ▪ Ineffective class / student handling skills

Source: IMaCS Analysis

5.4. Food Processing Industry

As of March 2010, Dakshina Kannada district had 3,858 food processing based SSIs, employing 52,011 workers. This was the highest number of units and employment under any category in SSIs in Dakshina Kannada. Also, the district has several other large and medium sized food processing units like Adani Wilmar Limited, Ruchi Soya Limited, Kasbavi Cashews Limited, United breweries Limited etc who are involved in food processing practices ranging from cashew processing to that of edible oil, vanaspathi etc.

Cashewnut is produced over 30,957 hectares of land (18.5 per cent of the cropped area) within Dakshina Kannda. Cashew processing as an industry majorly employs unskilled to semi-skilled labour, mostly women. It is a highly labour centric work, with several large and medium scale industrial units involved in the process. Of late, such processing units have started to come up in rural areas near to the places where cashew is grown. These units face a severe shortage of power and are hence dependent on labour to complete majority of the work.

Workers in a cashew processing unit in Dakshina Kannada

Figure 24 given below explains the value chain of the cashew processing industry. The whole of the value chain is done (end to end) within Dakshina Kannada district itself. The district also has units involved in edible oil production. Within that (the other major part of the food processing industry in Dakshina Kannada), the value chain followed in Dakshina Kannada district is given in Figure 7 below.

Figure 114: Value chain in Cashew processing Industry

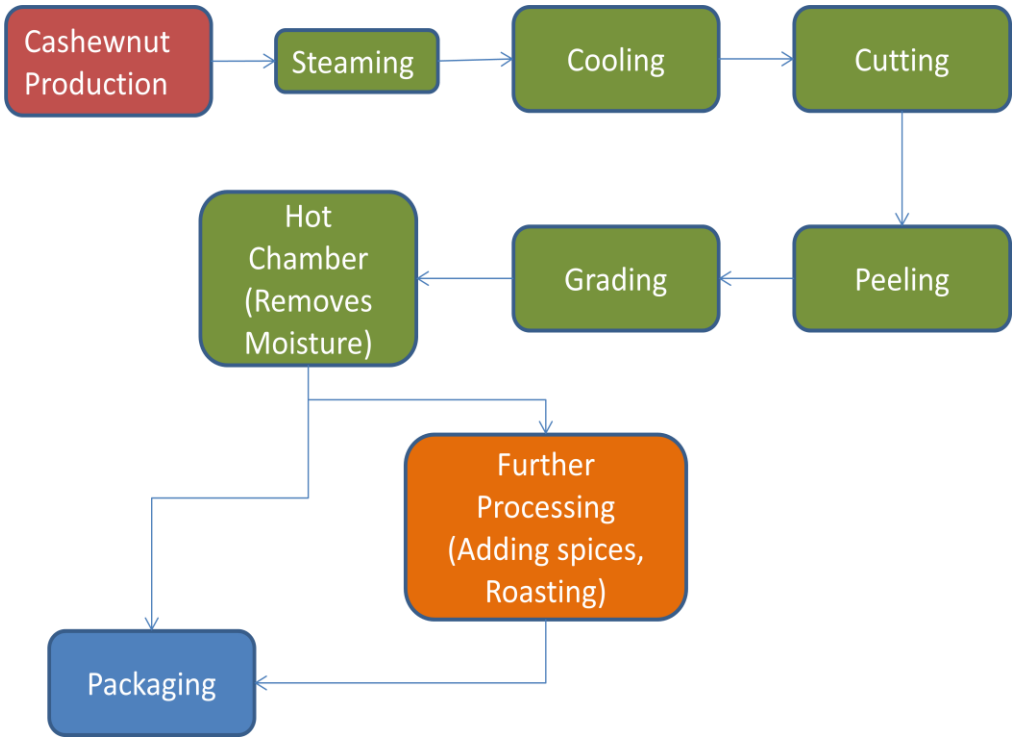


Figure 115: Value chain in edible oil industry – present in Dakshina Kannada district

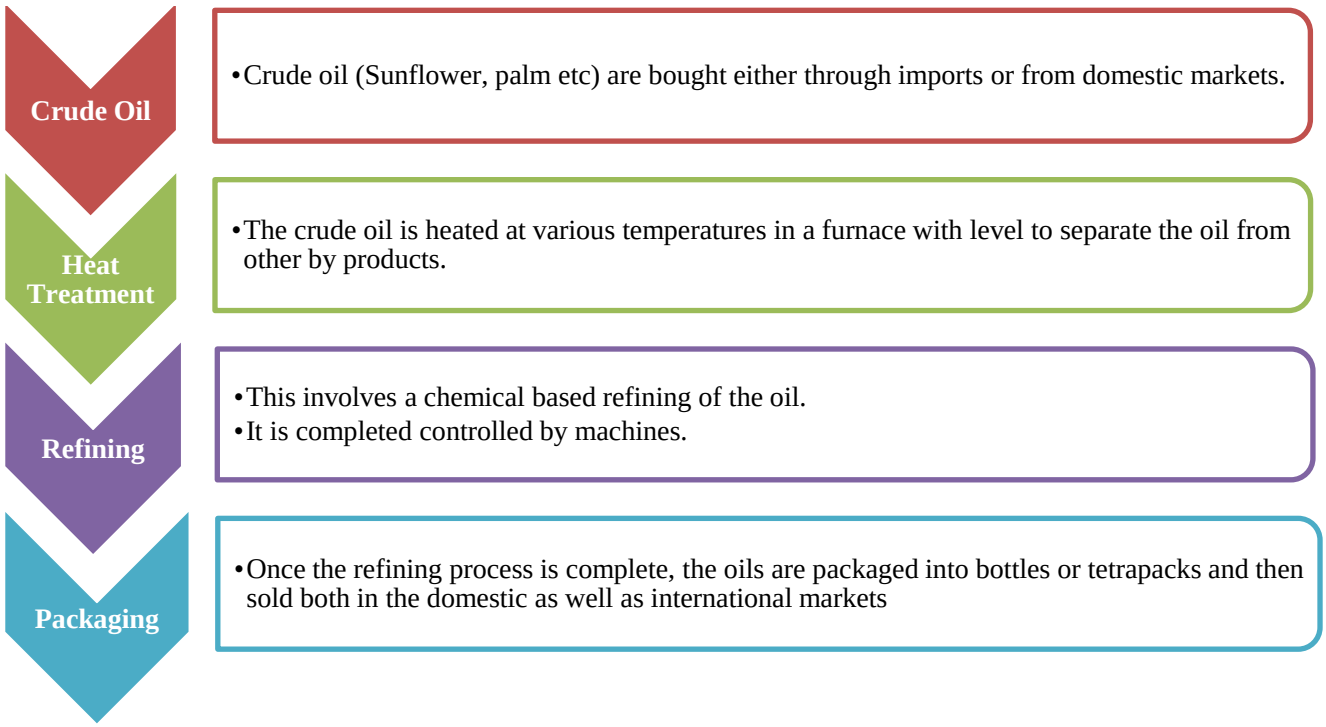


Table 202: Skill gaps in Food Processing Industry in Dakshina Kannada district

Role, educational qualification	Expected competency	Skill gaps
Manager / supervisor / Factory-shop floor in charge (Graduate)	▪ Managing all the facilities and the functioning of the work-force. ▪ Supervising of the work conducted by operators / workers and conducting quality checks. ▪ Knowledge of machine operations as well as grading of cashews. ▪ Ability to undertake inspection, production planning and control. ▪ In-depth knowledge of production processes and inspection methods. ▪ Leadership skills ▪ Soft skills and interpersonal skills	▪ Most of the managerial / supervisory staff is hired from Bengaluru, as people with such skills are in scarcity in Dakshina Kannada district. Those who are educated with these skills in the district prefer to move to Bengaluru in search of better jobs.

Role, educational qualification	Expected competency	Skill gaps
Machine Operators (High school to 12th pass)	▪ Basic knowledge of various machines in use for heating, steaming, refining of oil etc. ▪ Ability to communicate clearly on the shop floor with co-workers and Manager ▪ Expertise in particular machine being handled by the said operator. ▪ Basic technical know-how of Edible Oil processing. ▪ Ability to adjudge the quality of output.	▪ On the job training provided for two to three months, on joining of job to explain requirements and basic skill-up gradation. ▪ Even those who are trained before the job have to be re-trained, especially on running of machines, as the training institutes do not have good machine infrastructure.
Food Inspection (Quality control) executive (Graduate and Post Graduates with degrees in Food Technology)	▪ Ability to inspect the output (Oils, cashew etc) and adjudge for quality. ▪ Ability to check for quality adherence ▪ Technical know-how of Oil and Fats. ▪ Ability to understand and prevent defects like different grades mixing up, shells not remove properly etc.	▪ Very few people available who are food technologists. ▪ On-the job training provided as such skills are lacking in persons trained at training institutes.
Other technical workers – electrician, fitter etc (ITI candidates, 10th to 12 pass with relevant	▪ Technical knowledge of respective fields (e.g.- Electrician) ▪ Ability to repair and maintain various machines within the factory ▪ Soft skills	▪ Students from ITIs lack practical skills with modern day tools. ▪ Most training is provided on the job where candidates are taken as apprentices.

Role, educational qualification	Expected competency	Skill gaps
experience)		

Source: IMaCS Analysis

5.5. Healthcare Services

Over the years healthcare has grown as an important segment within Dakshina Kannada district, in and around the Mangalore region. One of the major contributors to the same has been creation of an ecosystem where there are sufficient medical colleges and nursing institutions churning out the requisite doctors and nurses as required by the hospitals that have come up in the district. Mangalore serves as a preferred destination for people from all nearby districts for all health care related services due to availability of many good quality hospitals.

Mangalore currently has about five Government hospitals and more than 20 private hospitals and nursing homes. Various national and international companies present in the sector too have evinced interest in setting up medical centres within the district. The human resource spread generally seen in this sector is –

1. Doctors: 15 to 20%
2. Nurses: 45 to 55%
3. Technicians: 15 to 20%
4. Attenders and Helpers: 15 to 20%
5. Administration and support staff: 5%

The skill gaps perceived for this sector within Dakshina Kannada are as follows:

Table 203: Skill gaps in Healthcare Services in Dakshina Kannada district

Role, educational qualification	Expected competency	Skill gaps
Consultant Specialists/ Super Specialists	▪ Advanced knowledge in the specialised domain. ▪ Ability to perform preventive, curative,	▪ Inadequate communication skills. ▪ Improper coordination skills

Role, educational qualification	Expected competency	Skill gaps
(PG in Medical Specialty)	and surgical healthcare services as applicable ▪ Ability to guide medical officers / residents and interns in their work. ▪ Ability to plan healthcare delivery services ▪ Manage and plan manpower and resources ▪ Co ordinate with other specialists on treatment and guide junior doctors/interns ▪ Effective communication skills (to communicate with patients, fellow doctors etc.) ▪ Knowledge of modern equipment used during medical procedures. ▪ Ability use computers and access hospital information systems.	when a patient is treated by various other specialists. ▪ Unable to fulfil the mentor role towards resident doctors and other interns. ▪ Difficulty in using computers
Resident Doctors (Minimum MBBS)	▪ Ability to diagnose and to perform preventive, curative, surgical medical procedures and advices ▪ Knowledge of infection control, bio medical waste, and other hospital quality control norms ▪ Ability to prepare patient diagnosis and medical advice reports. ▪ Participate in quality audits ▪ Ability to explain the medical problems to the patients ▪ Prescribe medicines, referrals, ambulatory	▪ Inadequate ability to prescribe medicines by the molecular name as against by the brand name ▪ Inadequate skills in working as a team ▪ In sufficient knowledge of hospital infection control management procedures

Role, educational qualification	Expected competency	Skill gaps
	service, diagnostic service and diet ▪ Calm, composed and pleasing demeanour with patients and their family.	
Head Nurse (Experienced Qualified Nurse)	▪ Provide expert advice on nursing services to other nurses ▪ Co ordinate and plan the nursing activities, duty charts, nursing schedule, specialist nursing schedule ▪ Knowledge of various standard operating procedures of the hospital ▪ Co ordinate activities between different departments including housekeeping, pharmacy, diagnostics etc ▪ Supervise housekeeping and infection control activities ▪ Knowledge of Cardio Pulmonary Resuscitation, Neonatal Resuscitation, first aid, etc ▪ Effective communication skills (to communicate with the nurse, doctor, patient, their relatives etc.)	▪ Limited knowledge of infection prevention and control norms ▪ Inadequate communication skills ▪ Partial knowledge of hospital protocols
Staff Nurse (Nursing Graduate)	▪ Adequate knowledge of technology so as to be able to operate medical equipment. ▪ Ability to address queries posed by patients / their relatives ▪ Complete understanding of the hospital regulations regarding admission /	▪ Unwillingness / hesitation in interacting with patients and their family. ▪ Lack of language skills (English or Hindi); as they are able to speak only in their regional

Role, educational qualification	Expected competency	Skill gaps
	discharge and treatment of patients and ability to handle the documentation related to the same. ▪ Ability to identify / report and treat needle stick injuries, cross infection, blood transfusion reactions etc. ▪ Knowledge of Cardio Pulmonary Resuscitation, Neonatal Resuscitation, first aid, etc ▪ Effective communication skills (to communicate with the head nurse, doctor, patient, their relatives etc.)	language. ▪ Inability to handle medical equipment and instruments properly. ▪ Inadequate knowledge of drugs as well as administration of the same.
Lab Technician (Diploma / B Sc in Medical Lab Technology)	▪ Knowledge of lab testing methodologies in one or more fields such as bio chemistry, pathology, microbiology, bacteriology, virology, pathology, pharmacology etc ▪ Ability to organise laboratory and operate it as per SOP and safety standards ▪ Knowledge and adherence to Bio Medial Waste control norms ▪ Ability to undertaken basic and advanced research ▪ Ability to document diligently the results of observation ▪ Knowledge of various medical instruments used in the market to conduct diagnosis ▪ Understanding of IPR and its implications ▪ Knowledge of drug approval and the	▪ Inadequate domain knowledge ▪ In sufficient documentation skills ▪ Cleanliness, and sanitation management ▪ Knowledge of IPR and drug approval process ▪ Inadequate knowledge of global standards including USFDA

Role, educational qualification	Expected competency	Skill gaps
	procedures related to the same ▪ Co ordinate with multiple teams inside the organisation	

Source: IMaCS Analysis

5.6. IT & ITES

In 2007, Alsbridge – a US based outsourcing firm named Mangalore amongst the top five emerging cities in India for outsourcing. The Information Technology and Information Technology Enabled Services (IT and ITES) space has indeed seen a boom in Dakshina Kannada in the last few years. Major information technology and outsourcing companies have started locating their facilities in Mangalore. Mangalore is home to over 15,000 IT professionals and more than 55 large and small companies. IT major Infosys was one of the first to move in and establish a large presence. The other major companies to have setup offices in Mangalore include Polaris, Invergor Technologies, Wipro, TATA Consultancy Services and MPhasis BPO.

Three dedicated IT parks are currently under construction. Two such parks are under construction, one Export Promotion Industrial Park (EPIP) at Ganjimutt and a second IT SEZ near Mangalore University. A third IT SEZ is being proposed at Ganjimutt. Another IT SEZ of 2 million square feet (180,000 m^2) is under construction at Thumbe. This will include a business centre, convention centre, mall and helipad facility.

Following are the skill gaps identified within the IT and ITES space for the district of Dakshina Kannada:

Table 204: Skill gaps in IT industry in Dakshina Kannada district

Role, educational qualification	Expected competency	Skill gaps
Project Manager (Post Graduate with 3 to 5 years of experience)	▪ Thorough domain knowledge. ▪ Adequate technical knowledge. ▪ Ability to interface with customer and on-site teams. ▪ Ability to communicate and manage the	▪ No structured training programs undergone for this role. ▪ Inadequate domain knowledge. ▪ Lacks customer handling skills.

Role, educational qualification	Expected competency	Skill gaps
	team working on the project. ▪ Poses good knowledge of process and quality compliance – ISO/SEI/Security processes and the ability to align team processes to meet process compliance requirements. ▪ Adequate project management skills and ability to use various project management tools available. ▪ Process management and Risk Management skills – covering time, cost, quality and delivery	
Software Engineer (Graduate)	▪ Basic programming skills with proficiency in atleast one language /platform (example C, Java, .NET etc) ▪ Ability to think logically and understand the nature of job/ program given to be written in terms of knowing the end result expected. ▪ Ability to communicate clearly with other team members as well as the project manager.	▪ Inadequate soft skills especially if the job also involves interaction with clients. ▪ Inadequate knowledge of programming languages. College students who are hired are generally made to go through a three to six month training program ▪ Lack of knowledge of corporate culture.
Business Analyst (Graduate with three years of experience or Post Graduate)	▪ Ability to capture customer requirements completely. ▪ Communicate the said customer requirements properly to the development team. ▪ Basic understanding of the software	▪ Lack of proper communication skills. ▪ Inadequate proposal writing or presentation skills. ▪ Lack of proper analytical skills to understand customer

Role, educational qualification	Expected competency	Skill gaps
	development concepts – technology aspect of the development team. ▪ Understanding of business functionality of the project. ▪ Complete understanding of the company's processes. ▪ Ability to write RfI/RfP/RfQ documents and make proposals. ▪ Ability to make pre-sales pitches / presentations	requirements completely and translate the same into technical requirements for the product development team.

Source: IMaCS Analysis

Table 205: Skill gaps in ITES (BPO and KPO) industry in Dakshina Kannada district

Role, educational qualification	Expected competency	Skill gaps
Process manager (Post Graduate with six to eight years of experience)	▪ High level of understanding of key outsourced business processes ▪ Understanding of the best practices with regard to quality management and information security. ▪ Complete understanding of client needs. ▪ Ability to handle clients properly and create more opportunities to outsource business processes from the client end. ▪ Ensuring quality output from the teams on the basis of both time and error-free output. ▪ Ability to manage and motivate the teams. ▪ Effective communication skills.	▪ Lack of understanding from a business perspective. ▪ Lack of proper communication and customer handling skills. ▪ Inadequate knowledge of the best practices in the market within each of the processes.

Role, educational qualification	Expected competency	Skill gaps
Domain Specialist / Team Leads (Post Graduate with two to three years of experience)	▪ Expertise in the domain, the person is working in. ▪ Effective communication skills. ▪ Ability to manage teams / projects efficiently. ▪ Ability to plan, control and monitor the output of his or her team members to ensure quality. ▪ Basic understanding of the best practices followed industry-wide within his / her domain. ▪ Ensuring customer expectations (deliverables) are met on time and of requisite quality.	▪ Inadequate business and process related knowledge. ▪ Inability to manage team members along with project deliverables. ▪ Lack of proper communication skills.
Analyst - KPO (Graduate with experience / Post Graduate)	▪ Adequate domain and technical knowledge in the field of operation. ▪ Aptitude for knowledge intensive work. ▪ Ability to communicate effectively with clients, team members as well as team leads. ▪ Ability to write / present reports on time. ▪ Ability to analyse the data given.	▪ Inadequate domain knowledge especially for the markets the customer belongs to. ▪ Lack of proper communication (oral and written) skills. ▪ Inability to do repetitive work with equal consistency and quality.
Voice process executives – BPO (Graduates – any stream)	▪ Basic process / product knowledge in order to provide requisite technical support. ▪ Ability to handle all kinds of customers. ▪ Effective communication skills in the language of the customer. ▪ Basic computer skills.	▪ Inadequate communication skills. ▪ Inability to handle disgruntled customers effectively. ▪ Lack of proper process/ product knowledge. ▪ Inadequate process compliance.

Role, educational qualification	Expected competency	Skill gaps
	▪ Ability to complete work in the stipulated turnaround time and of requisite quality. ▪ Ability to empathise with customer. ▪ Aptitude to undertake repetitive tasks. ▪ Active listening skills	
Non voice process executives – BPO (Graduates – any stream)	▪ Ability to use business related tools (softwares). ▪ Basic process / product knowledge. ▪ Strong analytical skills. ▪ Ability to deliver output on time and error free. ▪ Ability to communicate effectively with team leads as well as other team members.	▪ Inadequate knowledge of business related tools. ▪ Lack of proper understanding of the process / product being handled. ▪ Inadequate communication skills. ▪ Inability to do repetitive tasks.

Source: IMaCS Analysis

5.7. Organised Retail

With the boom in the economy, organised retail saw one of the fastest growths over the last ten years. Construction of mall space is the one of the best indicators of the growth of organised retail in any region. As already discussed earlier, Mangalore too has seen a tremendous surge in mall space post 2006. Already a few malls City Center mall (2nd biggest mall in Karnataka), Bharath Mall , Empire Mall, Avenue are operational and many are in pipeline - Excel-Mischief Mega Mall, Time Square, Pio Mall, Golden Harvest Mall, Mangalore Central Mall, Mak Mall, Inland Galore, Golden Square, Prestige Forum, Plama Mall etc.

The city currently has over 9 lakh square feet of retail space within malls alone with another 20 lakh square feet of space in the pipeline. This apart a lot of stand-alone retail stores in the clothing as well as grocery segment will be setup across the city as the economy booms.

The skill gaps as identified for the organised retails segment within Dakshina Kannada are:-

Table 206: Skill gaps in Organised Retail Industry in Dakshina Kannada district

Role, educational qualification	Expected competency	Skill gaps
Store Manager / Department Manager (MBA with experience)	▪ Understanding various aspects of customer behaviour. ▪ Detailed knowledge of products being offered at the store along with that of offerings by competing stores / brands. ▪ Ability to devise and execute sales promotion programmes depending on the sales analysis. ▪ Ability to handle difficult / demanding clients. ▪ Knowledge of inventory management. ▪ Basic understanding of the logistics and supply chain associated with the product being sold at the store. ▪ Ability to motivate sales teams effectively to promote sales within the region. ▪ Good communication skills in order to effectively communicate with employees, customers as well as vendors.	▪ Inadequate understanding of cross functional activities like logistics, supply chain management, in-store marketing, merchandising etc. ▪ Ineffective in communicating with customers. ▪ Lack of proper knowledge of the market conditions, competitors etc. ▪ Lack of proper team management skills.
Customer service representative / Sales Associate (Graduates, 12th pass with relevant	▪ Ability to convince the customer about the product / service offering and completing the sale. ▪ In depth knowledge of store offerings as well as those of competitors.	▪ Inadequate product specific knowledge. ▪ Inability to communicate effectively with the customers as well as team members.

Role, educational qualification	Expected competency	Skill gaps
experience)	▪ Knowledge of current sales promotion schemes of the company and the ability to communicate the same to customers. ▪ Knowledge of various aspects related to the product like warranties, colour options, shelf life, safety features etc. ▪ Ability to handle difficult /demanding clients. ▪ Knowledge of the locations of all products in a store (especially in supermarkets and hypermarkets) in order to guide any customer. ▪ Good communications skills.	▪ Inadequate understanding of the sales promotion and other marketing activities related to the product being sold.
Merchandising Manager (Grauates with four to five years of experience)	▪ Responsible for the overall feel of the stores and for creating a pleasant shopping ambience. ▪ Ability to understanding of visual merchandising concepts, designing store layouts, visual displays in store windows and on the sales floor. (This is required as retail space in a store is limited and has to ensure that the "retail brand" is communicated properly.) ▪ Ability to conceptualise and execute window and in-store display. ▪ Ability to position signage at key locations. ▪ Understanding and knowledge of current market trends - ability to ensure	▪ Shortage of people with knowledge of merchandising concepts. ▪ Inadequate understanding of merchandising and its impact. ▪ Lack of proper communication and inter personal skills.

Role, educational qualification	Expected competency	Skill gaps
	that items in high demand get more share of the shelf space. ▪ Knowledge of products and customer behaviour. ▪ Good oral communication and interpersonal skills to liaison with marketing/purchase and other departments	
Purchase manager (Graduates with four to five years of experience)	▪ Clear understanding of the products purchased and displayed / sold in the store. ▪ Knowledge of various sourcing alternatives and ability to search and select from various vendors. ▪ Ability to track inventory levels. ▪ Ability to liaise with logistics as well as merchandising departments. ▪ Good communications skills needed.	▪ Inadequate negotiation skills. ▪ Shortage of skilled people especially at the manager levels. ▪ Soft skills required for co-ordinating with other departments.

Source: IMaCS Analysis

5.8. Transportation, Logistics, Warehousing and Packaging

Mangalore's location makes it accessible by all forms of transport: road, rail, air and sea. The existence of a good sized port along with good connectivity in all forms makes it the ideal destination for import and export activities. The traffic at the New Mangalore Port was about 329.41 lakh tonnes in the year 2011-12.

Four national highways pass through Mangalore connecting it to Mumbai, Cochin, Bangalore, Solapur and Villupuram. Rail connectivity in Mangalore was established in 1907. Mangalore was also the starting point of India's longest rail route.

The city has two railway stations—Mangalore Central (at Hampankatta) and Mangalore Junction (at Kankanadi). The city is well connected to all major cities including Mumbai, Bangalore and Chennai.

The Mangalore Harbour has shipping, storage, and logistical services, while the New Mangalore Port handles dry, bulk, and fluid cargoes. The New Mangalore Port is also well equipped to handle petroleum oil lubricants, crude products and LPG containers. It is also the station for the coast guard. This artificial harbour is India's ninth largest port, in terms of cargo handling, and is the only major port in Karnataka.

In terms of connectivity by air, Mangalore Airport is the second airport in Karnataka to operate flights to international destinations as well. It is the only airport in Karnataka to have two runways.

The connectivity advantage and the existence of a port make Mangalore a growing hub for the logistics and warehousing industry. The skill gaps identified in this sector include:-

Table 207: Skill gaps in Transportation, Logistics, Warehousing and Packaging industry in Dakshina Kannada district

Role, educational qualification	Expected competency	Skill gaps
Driver / Helpers – Road Transport (Illiterate with experience in truck driving)	▪ Ability to understand routes and the geographical profile of the route being covered. ▪ Excellent driving skills. ▪ Ability to handle increasing tonnage and heavier trucks. ▪ Knowledge of road safety practices, basic knowledge of the tax regime (region wise), traffic permit rules, etc. ▪ Ability to handle dangerous and sensitive cargo	▪ Lack of knowledge of tax regimes, permit rules etc. ▪ Inadequate knowledge of hygiene, safety and first aid. ▪ Inadequate exposure to handle increasing tonnage and higher capacity trucks ▪ Poor language / communication skills.

Role, educational qualification	Expected competency	Skill gaps
	▪ Basic spoken language skills for communication with supervisors and fellow drivers or unloaders and supervisors at the customers end ▪ Ability to understand basic sanitation and hygiene requirements ▪ Ability to carry basic cleaning and maintenance of the truck.	
Supervisor – Warehousing and Shipping (Graduates)	▪ Ability to ensure pick up of the cargo by customer or delivery at customer's doorstep according to the consignments' terms and conditions ▪ Ability to understand and use basic and advanced features of Warehouse Management Systems (WMS). ▪ Understanding of Bill of Lading and Letter of Credit (LCs). ▪ Ability to ensure pick up of the cargo by customer or delivery at customer's doorstep according to the consignments' terms and conditions ▪ Ability to assist customer service staff in tracking the vehicle at different points in time. ▪ Advanced computer usage skills, including the use of tools such as MS Excel and ERP software such as SAP.	▪ Inadequate ability to verbally communicate and timely co-ordinate with the customer service staff ▪ Inadequate knowledge of Bill of Lading and Letter of Credit (LCs) ▪ Inadequate knowledge of procedures related to Container Freight Stations (CFS) and Inland Container Depots (ICD) ▪ Inadequate ability with using WMS
Import and Export Manager	▪ Domain knowledge of logistics as well as knowledge of the laws governing inter	▪ Inadequate practical knowledge of the logistics sector, especially

Role, educational qualification	Expected competency	Skill gaps
(Graduates with three to four year of relevant experience)	country export-import deals for dealing with agents. ▪ Ability to interact with customers and showcase the company's competitive edge of services provided as compared to other providers ▪ Key networking skills, since multi-level and multi-organisation contact has to be established ▪ Ability to negotiate – clients are typically well networked and well versed with the operations and thus the ability to negotiate and finalise terms and conditions of the deal is critical ▪ Ability to coordinate between department and ensure that there is seamless data and information flow within department members and between departments ▪ Adequate ability to use computers and the required software – many air and road express-courier service providers now give online track and trace facilities and all documentation is computer based, thus making this ability critical.	at the entry level ▪ Inadequate ability to coordinate among diverse agencies, leading to inadequate knowledge of the status of goods – this leads to inadequate ability to indicate the transaction status to customers. ▪ Inadequate technical knowledge of specialised software

Source: IMaCS Analysis

5.9. Tourism, Travel, Hospitality & Trade

Mangalore has many tourists' attractions ranging from temples to beaches to churches and forts. The main tourist attractions include Sri Mangladevi temple, Shri Dharmasthala Manjunatheswar temple,

Kukke Subramanium temple, Shri Durgaparameshwari temple, Panabur beach, Tannirbavi beach, St. Aloysius chapel, Sultan Battery etc.

Mangladevi – the deity of Mangalore

The Sultan Battery in Mangalore, built in 1784 by Tipu-Sultan to defend the city from British warships entering the Gurupura river

Table 208: Key spots in Dakshina Kannada:

Tourist Spot	Brief Description
Mangladevi Temple	The city got its name as Mangalore because of its deity Mangladevi. It is situated 3 Km. away from main City Bus stand. This temple was built by the

Tourist Spot	Brief Description
	Ballal family of Attavar in memory of a Princess of Kerala.
St. Aloysius Church	The walls of the church are covered with the paintings of the artist Antony Moshaini of Italy. The Church was built in the year 1899-1900. St. Aloysius College Chapel, an architectural gem, comparable with the Sistine chapel in Rome, is situated on lighthouse hill.
Kadri Manjunath Temple	Kadri is another ancient historic spot in Mangalore. The Kadri Temple dating back to about 1068 A.D. with its nine tanks, its square temple, nestling at the foot of the highest hill, draws to Mangalore hundreds of visitors annually. The Lokeshwara bronze statue of the Kadri Manjunatha Temple is tipped to be the best bronze statue in India.
Sultan Battery	It is situated in Boloor 6 Km. away from Mangalore City Bus Stand. It was built in Black Stones by Tippu Sulthan to prevent warships to enter Gurpur river. Now the remaining part of the fort is called as Tippu's Well.

Over the year 2011 – 2012, the number of tourists who visited the main tourists attractions in Dakshina Kannada are:-

Table 209: Tourist information of locations in Dakshina Kannada:

PLACE	DOMESTIC	FOREIGN	TOTAL
Shri Durgaparameshwari Temple	1,729,000	304	1,729,304
St. Aloysious Chapel	6,857	579	7,436
Shri Dharmasthala Manjunatheswar Temple	4,502,000	125	4,502,125
Shimanthi Bai Memorial Govt Museum	3,587	0	3,587
Venoor Shri Gomateeshwara Bahubali	39,868	0	39,868
Kukke Subramanium Temple	1,898,000	0	1,898,000
Thousand Pillar Jain Basadi	56,130	38	56,168
Hotels in Mangalore	327,696	5,063	332,759
Pilikula Nisargadama Moodshedde	584,555	2,114	586,669
Panabur Beach Mangalore	624,000	0	624,000
Tannirbavi Beach	57,600	36	57,636
Someshwar Beach	0	0	0
TOTAL	**9,829,293**	**8,259**	**9,837,552**

Source: Karnataka Tourism Office, Mangalore

The supply chain as observed for the Tourism sector is:-

Figure 116: Tourism supply chain

The skill gaps identified within this sector are:-

Table 210: Skill gaps in Tourism, Trade and Hospitality industry in Dakshina Kannada district

Role, educational qualification	Expected competency	Skill gaps
Front Desk Manager – Hotels (Graduate / Diploma in Hotel Management)	▪ Ability to maintain guest history and network. ▪ Facilitate smooth client check-ins and check-outs. ▪ Ability to quickly resolve any customer grievances. ▪ Effective communication and coordination skills to coordinate with other departments – Food and Beverage, Housekeeping etc. ▪ Good knowledge of the local region to guide all guests and tourists.	▪ Inadequate customer handling skills. ▪ Lack of proper communication skills. ▪ Inadequate knowledge of local region.
Restaurant Manager (Graduate / Diploma in Hotel Management with experience)	▪ Complete knowledge of the dishes served at the restaurant at various times. ▪ Basic understanding of the cooking procedures of each of the dishes. ▪ Ability to market the restaurant. ▪ Effective communication and coordination skills to coordinate with other	▪ Lacks people management skills. ▪ Inadequate understanding of the cooking procedures of dishes and inability to explain the same to the guests. ▪ Lacks communication skills.

Role, educational qualification	Expected competency	Skill gaps
	departments. ▪ Interacting with guests and explaining the speciality of the cuisines. ▪ Manage the team of waiters / servers.	
Housekeeping Executive (Graduate / Diploma in Hotel Management with experience)	▪ Ability to ensure smooth functioning of the housekeeping activities while causing least / no hassles to the guests. ▪ Broad knowledge of using housekeeping equipments. ▪ Ability to groom, train and manage the housekeeping staff. ▪ Ability to resolve any issues pertaining to guests quickly. ▪ Good communication skills.	▪ Lacks people management skills. ▪ Inability to groom and train the housekeeping staff.
Tour operators / guides (illiterate to 10th pass, trained by Tourism department)	▪ Route planning and optimisation ▪ Ability to liaison with airline, hotels and local community ▪ Ability to manage tourist expectations ▪ Customer Relationship Management ▪ Soft skills ▪ Understanding of local and English speaking skills	▪ The district lacks a large number of professionally trained guides. ▪ Lack of soft skills

Source: IMaCS Analysis

5.10. Fisheries

The boat building and fishing industry have been the traditional businesses in Mangalore for generations. The Old Mangalore Port is a fishing port located at Bunder in Mangalore, where a large number of mechanised boats anchor. The fishing industry employs thousands of people, their products being exported too.

The district has more than 30 cold storages with a capacity of over 4,000 metric tonnes. Also, Karnataka Fisheries Development Corporation has come up with various initiatives for the industry in the district:-

- Two ice plants of 30 ton capacity each were installed at Mangalore fishing harbour by utilizing government of India grand and state government share capital.
- A shopping complex comprising of 15 rooms is constructed and is being used by the boat owners and fish merchants.
- Also, a 40mt ice plant building at Mangalore was constructed and the machineries for the same tendered and finalized for a total cost of Rs. 82.13 Lakh.

The skill gaps existing in this sector are:-

Table 211: Skill gaps in Fisheries industry in Dakshina Kannada district

Role, educational qualification	Expected competency	Skill gaps
Fisherman (illiterate)	▪ Ability to undertake fish breeding and rearing ▪ Ability to handle the fishing boats in all kinds of weather. ▪ Knowledge of various means of catching the fish. ▪ Ability to clean the fish ▪ Understanding of modern methods of fish farming ▪ Knowledge of the feeds and supplements required ▪ Basic knowledge on the value addition and processing	▪ Not aware of the latest scientific methods of fish breeding and rearing. ▪ Inadequate knowledge of handling boats. ▪ No knowledge of value addition / processing.
Fish farm owners/ managers(fish management degree/ fish processing technology knowledge)	▪ Knowledge of Post- Harvest fish management ▪ Packaging skills ▪ Skills for marketing of fish ▪ In depth knowledge of various value addition processes ▪ Soft skills	▪ Very few managers are available. ▪ Inadequate knowledge of packaging process. ▪ Lack of knowledge on storage of the fish. ▪ Lacks marketing skills.

Source: IMaCS Analysis

5.11. Petroleum and Petrochemical Industry

The petroleum industry includes the processes of exploration, extraction, refining, transporting (often by oil tankers and pipelines), and marketing petroleum products. The largest volume products of the industry are fuel oil and petrol. Petroleum (oil) is also the raw material for many chemical products, including pharmaceuticals, solvents, fertilizers, pesticides, and plastics. Petrochemicals are chemical products derived from petroleum.

Within Dakshina Kannada district, the processes are restricted to refining and marketing alone. This includes both petrol as well as other by-products obtained during the refining process. The products refined and marketed from within Dakshina Kannada include LPG, kerosene, naphtha, diesel, fuel oil, bitumen, petrol and aviation turbine fuel.

This sector has assumed importance in the district due to major investment by Mangalore Refineries and Petrochemicals Limited and Oil and Natural Gas Corporation and the setting up of the Mangalore – SEZ. MRPL itself is looking to expand its capacities (MoU signed during GIM 2010) from its current 9.69 Million Metric Tonne Per Annum (MMTPA) to 15 MMTPA through an additional investment of Rs. 15,798 crore

Figure 117: Value chain in Petroleum and Petrochemical industries in Dakshina Kannada district

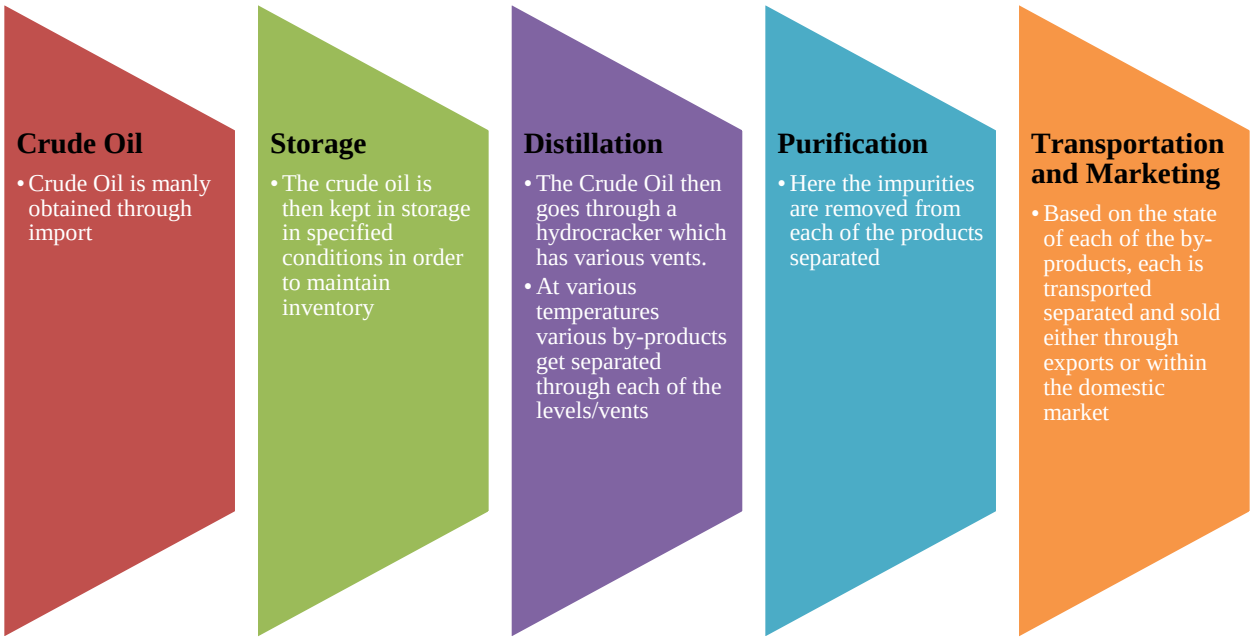


Table 212: Skill gaps in Petroleum and Petrochemical industries in Dakshina Kannada district

Entity	Role, educational qualification	Expected competency	Skill gaps
Production Manager	Manage / supervisor (Chemical Engineer)	▪ Practical know-how of the entire refining and processing of petroleum and petro-chemical processes ▪ Ability to manage safety and regulatory aspects of the petroleum and petrochemical products produced by the company ▪ Ability to ensure compliance to chemical regulatory requirements and guidelines. ▪ Ability to break down the production plan further based on the production target and ensure achievement of the targeted production ▪ Adequate knowledge of chemistry, chemical hazards and safety measures ▪ Ability to monitor operators, communicate effectively with them, assign specific jobs and ensure that the assigned jobs are carried out	▪ Lack of practical knowledge of the industry, products and processes and specific petrochemical knowledge. ▪ Inadequate understanding of relevant chemical processes that will complement maintenance and repair activities. ▪ Inadequate exposure to current tools, technology and processes. ▪ Lack of orientation of shop-floor culture
Operator	Technician (Diploma in	▪ Working knowledge of refinery machinery, filtration systems,	▪ Inadequate exposure to tools, technology, and

Entity	Role, educational qualification	Expected competency	Skill gaps
	Chemical)	instruments used in processing of petrochemicals ▪ Knowledge of conversion factors – required when adding ingredients. ▪ Ability to handle instruments. ▪ Ability to use computer simulation software. ▪ Ability to communicate properly with co-workers and managers. ▪ Basic knowledge of safety and fire-fighting skills.	processes in chemical plants. ▪ Inadequate understanding of basic refining and chemical processes. ▪ Inadequate safety orientation and compliance to safety. ▪ Inadequate knowledge of conversion factors.
Workers/Helpers	High school to 12th pass with relevant experience	▪ Basic knowledge of machine cleaning and maintenance. ▪ Knowledge of plant safety and fire fighting skills. ▪ Loading and unloading of bulk chemical trucks, chemicals, catalysts, etc.	▪ No special skills required ▪ On the job training provided.

Source: IMaCS Analysis

5.12. Others

In addition to the sectors mentioned above, Dakshina Kannada district is also home to many manufacturing and engineering based industries. While most of them don't have any employment generation or expansion plans in the next few years, they have reported shortage of skilled manpower in some of the key functions like mechanics, plumbers, electricians, masons, welders, metallurgy (diploma / engineer) etc.

6. Recommendations

Recommendations for Dakshina Kannada focus on the following sectors:-

1. Banking and Financial Services Insurance
2. Building, Construction industry and Real Estate services
3. Education and Skill Development Services
4. Food Processing
5. Healthcare
6. IT and ITES
7. Organised Retail
8. Transportation, Logistics, Warehousing and Packaging
9. Tourism, Travel, Hospitality & Trade
10. Fisheries
11. Petroleum and Petrochemical
12. Agriculture
13. Others

Recommendations are made from the perspectives of both Government of Karnataka and private players. The objective of the recommendations is to create more skilled man power as well as up skill the existing one in order to meet the existing and future demand of the industries thus increasing the employment potential in the district.

One observation to be made though is in relation to the technically skilled youth from various ITIs and Polytechnic colleges. These people skilled in trades like welding, fitting, electrical, plumbing etc have a tendency to migrate abroad or to bigger cities like Mumbai and Pune in order to get a better pay. Hence it is very essential to increase the seating capacities for such trades in order to eventually feed the local industries who are in dire need of the same.

A summary of all recommendations has been collated in the below table followed by detailed recommendations for each of the above mentioned sectors:-

Table 213: Summary of Recommendations made for Dakshina Kannada district

Sector	Recommendations to the Government	Recommendations to the private sector / NSDC	Recommendations to the Industry
Banking and Financial Services Insurance	▪ NA	▪ Short duration courses based on each specific job roles focusing on :- – Customer handling and customer relationship management. – RBI regulations and guidelines (product wise) – Soft skills training programs – Sales and recovery. – Banking softwares used by respective banks.	▪ Need to encourage in-house training initiatives relating to:- ○ RBI regulations ○ Bank Policy and Procedures ○ KYC Norms ▪ Build on Corporate banking verticals within the district.
Building, Construction industry and Real Estate services	▪ Setup a construction sector specific skill training institute which addresses the skill needs of the bottom of the pyramid workmen – masons, carpenters, plumbers, bar bender etc. ▪ Training be conducted at various construction sites which will ensure	• Target the skill sets as required by the supervisor and above category: – Project Management skills – Labour laws – Safety management – Conflict management	• Encourage training and skilling initiatives from the government and private players by allowing on-site training. • Improve the soft aspects relating to the job to attract more people to work in construction.

Sector	Recommendations to the Government	Recommendations to the private sector / NSDC	Recommendations to the Industry
	greater participation as the workers can continue to work and earn. ▪ Create construction specific trades to be taught at the existing ITIs. ▪ Subsidising various training programs to be implemented by various private players.	– Budgeting and cost control – Inventory management – Topics in geology, hydrology, hydraulics, electrical etc – Surveying	
Education and Skill Development Services	▪ NA	• Teacher training institutes to be setup which focus on: – Training in usage of various tools, visual, audio etc., while teaching. – Training in verbal delivery of subject matter. – Training in soft skills. – Training in effective testing / examination systems	NA
Food Processing	▪ Setup food technology	▪ Colleges and	▪ Tie-up with educational

Sector	Recommendations to the Government	Recommendations to the private sector / NSDC	Recommendations to the Industry
	institutes ▪ Provide short duration courses in areas like food safety, packaging and marketing, specific food products' processing ▪ Setup training institutes at rural locations	Universities to offer structured courses in food technology ▪ Smaller training institutes to provide certification courses in areas like food safety and standards, quality management in food processing etc.	institutes to deliver industry specific courses in food technology and subsequently provide internships for better practical learning.
Healthcare Services	Recommendations for the Directorate of Medical Education:- • Increase the number of seats in post graduate and super specialised courses in Government medical colleges. • Improve medical infrastructure facilities to give doctors hands on experience in modern medical equipments. ▪ Implement advanced medical software systems to provide exposure to the students undergoing	▪ Create training centres to cater to courses in:- – Nurse training – Training of support staff – Courses in hospital administration practices – Training in various patient management softwares – Soft skills and effective communications training	▪ Invest into setting up speciality hospitals and medical centres ▪ Promote Mangalore a preferred destination for medical tourism in India and abroad.

Sector	Recommendations to the Government	Recommendations to the private sector / NSDC	Recommendations to the Industry
	MBBS / MD		
IT and ITES	Recommendations to the Department of Information Technology, Biotechnology and Science and technology:- ▪ Setup institutes in rural areas to provide courses in:- – English speaking courses – Customer handling skills – Other soft skills – Basic computing skills	▪ Provide up-skilling courses to the lower and middle level management in the sector:- – Project Management – Domain specific training (for e.g. – SAP) – Team Management techniques – Courses in Information Security – Business analyst / Business Intelligence related training – Quality management in IT organisations etc.	▪ Need to setup more IT parks and related infrastructure to encourage further the growth of the sector in the district. ▪ More IT and ITES companies to open offices at Mangalore.
Organised Retail	▪ NA	▪ Colleges and universities to provide full time industry specific degrees. ▪ Short term courses for	▪ Rapid urbanisation of Mangalore presents with a lot of opportunities for the organised retail segment

Sector	Recommendations to the Government	Recommendations to the private sector / NSDC	Recommendations to the Industry
		entry level jobs in the sector:- – Customer relationship management – Customer service – Store management – Positioning of products in stores – Handling customer complaints – Effective communication etc.	to invest into multi-format spaces. ▪ Focus on segments:- ○ Entertainment and Leisure ○ Food and beverage ○ Textile
Transportation, Logistics, Warehousing and Packaging	▪ NA	▪ Colleges and universities to provide full time industry specific degrees. ▪ Short term courses for up-skilling in the sector:- – Import and Export documentation – Tax and Legal regulations – Transportation models – Inventory management etc	▪ Setup more warehousing and storage facilities. ▪

Sector	Recommendations to the Government	Recommendations to the private sector / NSDC	Recommendations to the Industry
Tourism, Travel, Hospitality & Trade	Recommendations for the Department of Tourism:- ▪ Create a tourism support infrastructure and market the existing tourist spots. ▪ Training to be provided for:- ○ Tourists Guides ○ Tourists Operators ○ Tourist cab drivers	▪ Provide short duration courses in the field of hospitality:- – Housekeeping – Front desk management – Chef training – Travel desk operators etc.	▪ Invest in setting up more business hotels in the district. ▪ Create tie-ups with private training institutes in the hospitality sector to provide employment opportunities.
Unorganised sector (Fisheries)	Recommendations for the Department of Fisheries:- ▪ Government support in the form of creating infrastructure facilities to help the sector grow further:- ○ Cold storage facilities ○ Fish breeding and rearing ○ Fish processing ○ Modernisation of boats	NA	▪ Setup more cold storage facilities in the district. ▪ Tie up with Government to provide better boats and fishing equipment to the fishermen at affordable rates.
Petroleum and Petrochemical	▪ Introduce petroleum, petrochemical and chemical industry specific courses.	NA	NA

Sector	Recommendations to the Government	Recommendations to the private sector / NSDC	Recommendations to the Industry
	▪ Increase number of seats in Diploma / Engineering in Chemical. ▪ Training in :- – Fire and other industrial hazard safety training – Soft skill training		
Others (Manufacturing, engineering etc.)	▪ Need to increase in number of seats for trades like electricians, masons, welders etc. in ITIs and ITCs to provide for needs of medium and small scale industries	NA	NA

6.1. Banking, Financial Services and Insurance

Dakshina Kannada is known as the “Cradle of Indian banking”. Five banks were founded from as early as 1906 within the erstwhile district (four of which were subsequently nationalised) and today there are more than 350 bank branches within the district with a total deposit base of Rs. 14, 382 crore. The presence of a strong banking ecosystem provides the push for growth of several manufacturing and service industries within the district.

Though there are no distinct quantitative gaps in terms of man power required by the sector, it continuously faces the need to up-skill its manpower in order to meet the changing requirements of the customers as well as that of the operating environment. The main need for training currently is for all the job roles which have a customer facing nature. This sector provides ample opportunities for training and up-skilling to be done by the private sector.

Private Players

There are many private institutions which provide 1-6 months short term courses as well as 6-24 months certification courses within the domain of banking and insurance. Many banks also have their own internal training teams which take care of the organisational learning and development aspects. What is lacking though inspite of such a formal training is the lack of skill focused training which needs to be imparted and the quality of such trainings too. The recommendations for private players in this space are:-

- Job role / skill specific training: The skill sets required for each job role needs to be elaborated and courses must be designed to address the specific skill set requirements of each of the courses.
- Training in customer handling and customer relationship management.
- Training in RBI regulations and guidelines (product wise)
- Specific soft skills training programs
- Training in sales and recovery.
- Training in banking softwares used by respective banks.

Industry

Banking as a sector has been in existence in the district for over a century with five banks owing their origin to the Mangalore – Udupi region, four of which were subsequently nationalised. The recommendations thus focus on the need of the current times in the district:-

- Develop more corporate banking related verticals/teams within the district. Dakshina Kannada is the third largest district in the State in terms of GDDP and is seeing a greater rate of growth in both the industry and well as the services sector. It also enjoys the advantage of being connected through all means of transportation as a result of a major port. Thus, a large number of companies have come up and grown in the region. Of late the services sector (IT, organised retail etc) is seeing a major spurt in growth. All of this points towards building the corporate banking divisions of various banks within the district, most of which is currently concentrated in Bangalore.

- There is a need amongst all bank employees to have a thorough knowledge of RBI guidelines, Bank's product policies and KYC norms as stipulated by the Reserve Bank. Hence in order to

facilitate this process, banks must focus on creating internal training teams who can train all the employees in the above mentioned areas specific to banking as an industry.

6.2. Building, Construction Industry and Real Estate Services

Though construction as an industry is the second largest contributor to the GDP of India and provides employment to almost 16 per cent of the working population, there are not many formal training programs conducted for the construction workers except for those conducted by various corporates for their captive requirements, that too at a very small level. There is considerable need for a push in training of construction workers from the Government's end as unlike other sectors, the workmen for whom the training is intended come from a very poor economic background and do not have the means to pay for any such training.

Government

There is a need for a pro-active participation from the side of the Government in order to setup the training infrastructure and further encourage private players to be able to do the same. The efforts for the same need to be undertaken on both training as well as certification sides. Certification of the workers is required in order to be able to effectively understand the quality of construction workers in the State and the district. Some steps to be taken by the Government are:-

- Setup a skill training institute which addresses the skill needs of the bottom of the pyramid workmen – masons, carpenters, plumbers, bar bender etc.
- To the extent possible, this training be conducted at various construction sites which will ensure greater participation as the workers can continue to work and earn at the construction sites as well as this will enable better practical training.
- Create construction specific trades to be taught at the existing ITIs. This will enable further use of existing infrastructure without much of additional capital expenditure from the side of the Government and also create a means of getting the youth to join the construction industry.
- The Government may also look at subsidising various training programs to be implemented by various private players, even employers in order to encourage participation in this space.

- The focus must be at creating skilling programs which can be delivered over a period of 6 to 9 months and conducted either after the working hours or in collaboration with their employers.

Private players

Due to infeasibility in targeting the bottom rung of the pyramid within the construction space, the private players may look at targeting the other critical human resource requirements within the industry – Supervisors, Project Managers etc. The recommendations are as follows:-

- Target the skill sets as required by the supervisor and above category:
  - Project Management skills
  - Labour laws
  - Safety management
  - Conflict management
  - Budgeting and cost control
  - Inventory management
  - Topics in geology, hydrology, hydraulics, electrical etc
  - Surveying
- Provide corporate sponsored training in:
  - Soft skills
  - Safety management
  - Personal health management

Industry

The construction industry faces with two very important challenges, both related to its man power requirements – lack of interest amongst the local people to work in construction sector and the availability of skilled man power. Thus the recommendations to tackle these problems are as follows:-

- Tie up with training institutes to provide construction specific training at their own job sites. This can be done on an industry wide level to have the desired impact. Most construction workers do not undergo training because they cannot afford the fees related to such training and also they do cannot afford to take off from work to get trained. Thus creating partnerships with the State Government and other agencies to sponsor such training programs and to impart such training at various job sites has many advantages:-

- The workers do not lose out on their pay
- There is more practical / on-the-job training as is the need for the sector.
- The quality of output of the workers itself increases directly benefitting the builder.

The only concern area in the whole value chain is to able to find parties to sponsor the training exercise.

- Improve the softer aspects related to the job like providing uniforms, ID cards, employer branded tool kits etc. which help in increasing the prestige attached to the job by the worker in effectively attracting more people to the sector.

6.3. Education and Skill development services

Mangalore has over the years come to be one of the preferred hubs of education with students coming from all over the State and country to complete their studies. As explained earlier, the district has over 17 engineering colleges, six medical colleges, five dental colleges, 14 physiotherapy colleges, 19 nursing colleges, 30 ITIs, 11 Polytechnic colleges, six hotel management institutes, 13 B Ed. colleges / teacher training institutes and over 38 colleges in the field of Law, Arts, Commerce, Science and Business Management.

The main problem arises with relation to the quality of the faculty which need to be addressed quickly in view of the growing number of institutes in the district. The recommendations here focus on the participation of the private players in this space.

Private Players

There is a need to enhance the teaching skills of the faculty and the recommendations focus on the teaching skills to be developed:-

- Teacher training institutes to be setup which focus on:
  - Training in usage of various tools, visual, audio etc., while teaching.
  - Training in verbal delivery of subject matter.
  - Training in soft skills.

- Training in effective testing / examination systems) – including techniques of setting up question papers, various means of conducting exams and evaluation methods that will facilitate learning better.
- Giving some industry exposure to the faculty who can further share it with students.

6.4. Food Processing Industry

The presence of the port in Mangalore clubbed with the presence of agrarian districts all around it (and huge growth of cashews within the district) has turned it into a huge base for food processing industries. As of March 2010, Dakshina Kannada district had 3,858 food processing based SSIs, employing 52,011 workers. This was the highest number of units and employment under any category in SSIs in Dakshina Kannada.

The district also has several large and medium sized food processing units like Adani Wilmar Limited, Ruchi Soya Limited, Kasbavi Cashews Limited, United breweries Limited etc who are involved in food processing practices ranging from cashew processing to that of edible oil, vanaspathi etc.

Currently there are very few educational institutes which focus on training or skilling in this sector even though it has great potential to provide employment especially to the rural folk.

Government

There is a need for a structured educational infrastructure within the sector. The central government has over the years setup institutes like the Central Food Technological Research Institute (CFTRI) in Mysore and National Institute of Food Technology Entrepreneurship and Management (NIFTEM- under the Ministry of Food Processing Industries) in Sonipat, Haryana. But as the sector has grown the need for such institutes has become very high:-

- The State Government too should look at setting up food technology institutes, probably in partnership with the Ministry of Food Processing Industries, Government of India as there is a great demand for courses in:
  - Bachelor of Science / Engineering in Food Technology
  - Master of Science / Engineering in Food Technology
  - PhD program in Food Technology
  - Food Safety and Standards

- Food Project Planning
- Entrepreneurship and Food Business Management etc.

- There is also a need for various short term courses which focus on specific needs of the food processing industry:
  - Essentials of packaging technology for distribution and marketing of food products
  - Basics of flour milling with focus on quality and safety aspects of flour
  - Concepts of hygiene and quality in processing of meat and meat products
  - Baking science and technology
  - Analysis of pesticide residues
  - Approach in processing of fruits and vegetables into value added products
  - Drying of food products: Principles, practices and industrial applications

- The need for proactive role of the Government in this sector is essentially to setup such training centres in various rural locations in order to encourage their participation and enhance their knowledge base – as an extension to agriculture.

Private Sector

Considering the increasing demand for food technologists and food safety specialists in the industry, there is tremendous opportunities for the private players. This essentially comes in two forms:-

- Various private colleges and deemed universities can offer structured courses in food technology in the form of a Bachelors / Masters of Science course as well as in the form of an engineering degree (B Tech. / M Tech.). This can be done in tie-up with various corporates as it gives a two way advantage – one of ensuring that the courses remain industry relevant with sufficient practical exposure and second of creating a channel to place them into these companies once they complete their graduate / post graduate courses.

- The other form of imparting training is for the smaller focused training institutes who can provide short term certifications in various aspects of food processing and technology like food safety and standards, product specific training like for cashew processing or chilli processing etc.

Industry

One of the major concerns of the industry is that they are not being able to find skilled people with specific focus on the food industry like food technologists, food safety and standards professionals etc. Thus the recommendation for the industry is to create tie-ups with various colleges and educational institutes in order to deliver the industry specific courses like:-

- Bachelor of Science / Engineering in Food Technology,
- Master of Science / Engineering in Food Technology,
- Certification in Food Safety and Standards etc

This should involve internship opportunities at various food processing companies within the district in order to ensure sufficient practical exposure and subsequent employment at the companies.

6.5. Healthcare Services Industry

Over the years healthcare has grown as an important segment within Dakshina Kannada district, in and around the Mangalore region. But one of the for the same has been as a result of good quality educational infrastructure with sufficient medical colleges and nursing institutions churning out the requisite doctors and nurses as required by the hospitals that have come up in the district.

The training need though arises on two fronts – quality of doctors and nurses available and the need for more speciality doctors. The recommendations in this sector are as follows:

Government

The recommendations for the Directorate of Medical Education are:-

- Increase the number of seats in post graduate and super specialised courses within Government Medical Colleges in order to allow people from economically weak backgrounds too to enter these streams and also increase the overall output of specialised doctors.
- Improve upon their medical infrastructure facilities in order to give doctors hands on experience in modern medical equipments.
- Implement advanced medical software systems and give sufficient exposure to the students undergoing MBBS / MD courses to these softwares.

Above everything else there is a dire need for many more Government colleges in the field of medicine in order to allow broader access to medical courses to meritorious students at affordable rates. This will

in turn help create a large pool of doctors and nurses and subsequently bring down the cost of healthcare within the state.

Private players

There is a huge opportunity for the private players in terms of setting up:-

- An ecosystem based medical colleges which are attached to hospitals. But this requires a huge investment both in terms of setting up a modern hospital as well an attached educational institution and hence this is possible only for private player s with big investment capacities.
- For smaller private players looking to setup training institutes within the space the areas to target include:-
  - Nurse training
  - Training of support staff
  - Courses in hospital administration practices
  - Training in various patient management softwares
  - Soft skills and effective communications training
  - Training in hospital infection control procedures

Industry

The district has already emerged as the preferred destination for healthcare services for all people from the surrounding districts. One of the major contributors to this is the existence of many medical colleges and nurse training institutes in the district thus churning out good quality skilled man power. The recommendations for the industry are as follows:-

- In order to further grow from here on as well as to create a niche for itself within the State, there is a need to setup more speciality and super speciality hospitals which focus on select areas and has the requisite trained and highly skilled doctors and support staff. This will lead to attracting people from all parts of the state as well as the country.

- Secondly, the industry players / association must work in tandem with the State Government to look at avenues to promote the district / Mangalore region as an attractive and beneficial place for medical tourism. This will help the sector grow by attracting many foreigners who look at India and other Asian countries as cheaper options to be treated for various ailments as well as mix it up with local sightseeing.

6.6. IT and ITES Industry

The IT and ITES space has grown multi-fold in Dakshina Kannada in the last few years with almost all major information technology and outsourcing companies having opened facilities in Mangalore. Mangalore is home to over 15,000 IT professionals and more than 55 large and small companies. As mentioned before, Alsbridge (a US based outsourcing firm) named Mangalore as one of the top five emerging cities in India for outsourcing.

Training within the IT and ITEs space is conducted in a very structured manner. The companies hire graduates from various streams depending on the job profiles they are looking to fill and then train them for a period of 3 to 6 months depending on the person's skill sets and the job requirements. But there exists no specific training approach as the people grow into higher roles within the organisation. In view of this the recommendations for the Government (Department of Information Technology, Biotechnology and Science and Technology (IT, BT and S & T)) as well as for the private sector are as follows:-

Government

IT and ITES as a sector has tremendous possibilities within our country in terms of providing jobs to a large number of people. IT Enabled Services which include various BPO and KPO companies do not require very high level of skill sets and hence the Government can look to leverage these advantages in providing employment to the rural population. The recommendation here is towards setting up various institutes in rural areas by the Department of IT, BT and S & T which will train the people in various courses like:-

- English speaking courses
- Customer handling skills
- Other soft skills
- Basic computing skills

This will create a possible workforce who can handle voice based and certain non-voice based process in a BPO / KPO company. This can also enable setting up of low cost BPOs by various corporates and create further jobs within the district.

Private players

Three dedicated IT parks are currently under construction within Dakshina Kannada district. This creates good potential for further IT companies coming up within the region thus creating more jobs for the people. This in turn presents a great opportunity to the private sector for training and up-skilling:-

- Setting up of IT centric educational institutions like International Institute of Information Technology in Bangalore which focus on structured courses (Graduation as well as Post Graduation) for the IT sector alone. This ensures greater focused programs for the youth and better employability from the companies' perspective.
- There are also great opportunities in the up-skilling space where private training centres as well as corporate trainers can look at the lower and middle level managements and provide up-skilling in areas like:-
  - Project Management
  - Domain specific training (for e.g. – SAP)
  - Team Management techniques
  - Courses in Information Security
  - Business analyst / Business Intelligence related training
  - Quality management in IT organisations
  - Pre-sales and Sales of software product / services
  - Customer management
  - Effective presentation skills
  - IT infrastructure management etc.

Industry

Mangalore is already being recognised as the next preferred destination for the IT and ITES companies already having a base in Karnataka. The district already boasts of 15,000 people strength within this sector. One of the prime contributors to this is the availability of skilled professionals due to the availability of the large number of colleges in the district and the adjoining regions. The recommendations for the industry within the district are as follows:-

- Setting up of more IT parks / IT related infrastructure across various commercial premises being built in the district. This is very essential for the growth of the industry within the district as existence of all IT related support infrastructure is very crucial for IT companies to setup their businesses.

- Create partnerships with the State Governments and industry associations across other geographies in order to market Dakshina Kannada as an ideal destination for IT and ITES companies. It is very important for additional number of companies, medium and large in size to be brought in as once they setup their offices, they realise the advantages offered by the district and naturally then look to increase the number of offices / seats at their locations.

6.7. Organised retail

With the boom in the economy, organised retail has seen one of the fastest growths over the last ten years within the country. Mangalore too has been no exception. This is seen in the growth of the number of malls as well as standalone retail store. The city currently has over 9 lakh square feet of retail space within malls alone with another 20 lakh square feet of space in the pipeline. This apart there is a tremendous growth in the standalone stores in the garment, grocery and food and beverage segments. This offers a tremendous opportunity for the private sector in training and up-skilling:-

Private players

There are various institutes which offer courses in retail marketing (as a part of their MBA programs) but that apart there exists no structured training programs for this sector in the district especially for the workforce who are part of the entry level jobs within this sector.

- The existing colleges and private universities can conduct various courses within the space of retail management which focus on all aspects related to organised retail both on the front end (merchandising, store layout, sales etc) as well as at the back end (logistics, supply chain management, inventory management etc).
- There is also a lot of opportunities for other training institutes to design and offer courses which address the skill requirements for the entry level jobs in the sector like:-
  - Customer relationship management
  - Customer service
  - Store management
  - Positioning of products in stores
  - Handling customer complaints
  - Effective communication

Industry

Rapid urbanisation of Mangalore city in the last few years has led to a big spurt in the growth of the organised retail sector across various categories. This phase is expected to continue with more mall spaces under construction in the region. The recommendation for this sector is as follows:-

- Facilitate construction of various open, commercial premises with a focus of letting out to various players in the organised retail space. This could be varied in nature and structure to aide the different formats of retail stores and space.

- For future growth, the industry must look to invest into the following segments:-
  - Entertainment and leisure
  - Food and Beverage
  - Textile (or Clothing)

6.8. Transportation, Logistics, Warehousing and Packaging

The location of Mangalore and the existence of all forms of connectivity to the district has been a boon for this sector. The Mangalore Harbour has shipping, storage, and logistical services, while the New Mangalore Port handles dry, bulk, and fluid cargoes. The New Mangalore Port is also well equipped to handle petroleum oil lubricants, crude products and LPG containers. This has enabled creation and growth of other sectors / industries within the district.

Currently there are not many structured / formal training available in the market to address the needs of this sector and hence it provides the private players with a huge opportunity to train or upskill the manpower:-

Private players

There is a great demand for various personnel skilled in the roles specific to the logistics and warehousing sectors:-

- Private colleges and Deemed Universities should look to introduce specific courses like:-
  - BBA and MBA in Logistics and Supply Chain management
  - Import and Export business management
  - Certification in Inventory and Warehouse management

  - Certification in Transportation and Logistics management
  - MBA (Port and Shipping Management)

- Also, it is essential to train the current employees within the sector in short duration courses like:-
  - Import and Export documentation
  - Tax and Legal regulations
  - Transportation models
  - Inventory management
  - Team management
  - Procurement and Purchasing
  - Softwares available for Logistics and Supply Chain Management

Industry

Though Mangalore has a major port, is connected by roadways and railways and has an international airport with two runways (only airport in Karnataka to have two runways), this sector has not yet grown to its full potential to complete take advantages of the connectivity options available. The existence of a strong 'Transportation, Logistics, Warehousing and Packaging' industry is very essential for the overall growth of the manufacturing industries in the region as it then specifically attracts various export oriented manufacturing units like it already has.

There is thus a need to invest into setting up more warehousing and storage facilities in the district which cater to various export related products. The industry can look to do this by entering into partnerships with the State Government in order to bring down their cost of setting up the infrastructure.

6.9. Tourism, Travel, Hospitality and Trade

The Shri Dharmasthala Manjunatheswar temple, the Kukke Subramanium temple and Shri Durgaparameshwari temple are the main attraction for the domestic tourists within Dakshina Kannada. This is followed by the Panabur beach and the Pilikula Nisargadama which is a part of the Government's (Department of Tourism) eco-tourism initiatives. Though the district has several places of historical and

religious importance they are not very well known throughout the country. Hence there is a need on the part of the Department of Tourism to develop and market these places as tourist destinations.

The recommendations for this sector are as follows:-

Government

There is a need on the part of the Department of Tourism to create a better tourism infrastructure including tourist information centres, local sight-seeing planning centres, taxis (cabs, buses etc) specifically for the purpose of tourists etc. On the training front the Government needs to implement programs in order to train people in:-

- Tourist guides: These people need specific training in:-
  - Knowledge of the significance of each of the places they operate in.
  - Effective communication skills with proficiency in English and Hindi languages
  - Ability to help out foreign tourists especially to travel around the district

  It is essential to provide certification to such trained guides as it will enhance the credibility of the people and further the confidence of the tourists

- Tourist Operators: These people need specific training in:-
  - Route planning and optimisation
  - Ability to liaison with airline, hotels and local community
  - Ability to manage tourist expectations
  - Ability to converse in English and Hindi languages

- Tourist cab Drivers: There people need specific training in:-
  - Effective driving skills
  - Complete knowledge of all routes within the district to all major tourist locations
  - Ability to converse in English and Hindi languages

It is also important on the part of the Government to bring in initiatives where such people can be funded to own cabs.

Private players

There is a huge scope for training and up-skilling within the hospitality segment from a private training institution point of view:-

- Provide short duration intensive courses in the subject areas of :-
  - Housekeeping
  - Front desk management
  - Chef training
  - Travel desk operators
  - Communication skills
  - Training in languages like English and Hindi
  - Basic computer courses

- Also, there is a need for specialised personnel trained in :-
  - Sea diving professionals
  - Adventure sports etc. (Para-gliding, Para-sailing, cliff-diving etc.)

  Training in these areas also creates further business opportunities in the segment and enhances the image of the region amongst the youth as a preferred tourist destination.

Industry

The hospitality industry in the district gains from two aspects:-

1. Availability of various tourists spots within the district
2. Emergence of Dakshina Kannada as business hub.

This provides with the opportunity to the sector to open business hotels which specifically cater to the needs of various corporates visiting the district.

Also, there is an urgent need for skilled professionals with adequate hands on experience specific to the industry. Thus the industry should look to tie up with various training institutes which cater to the needs of the hospitality sector and partner to provide internship and employment opportunities to the students

6.10. Fisheries

The boat building and fishing industry have been the traditional businesses in Mangalore for generations. The Old Mangalore Port is a fishing port located at Bunder in Mangalore, where a large number of mechanised boats anchor. The fishing industry employs thousands of people, their products

being exported too. But the government needs to do an intervention in both the infrastructure and the training space in order to facilitate further growth and generate more jobs in this sector:-

Government

For the fisheries as an industry to grow further it is important to create an ecosystem with modern amenities which requires creation of infrastructure supported by Department of Fisheries. The needs of the sector on the infrastructure front are:-

- Creation of more cold storage facilities within the district. This is very important for the fishermen as it helps increase the shelf life of the fishes caught leading to increased sales.
- Setting up of facilities to encourage fish breeding and rearing.
- Investing in creating more fish processing based industries as well as fish processing vessels within the district. A fish processing vessel is a large ocean-going vessel with extensive on-board facilities for processing and freezing caught fish.
- Helping the fishermen by providing modern boats which will enable them to conduct further deep sea fishing activities.
- The Department of Fisheries may also look to fund various private players / small fishermen who may want to setup any of the above mentioned facilities.

On the up-skilling front there is a strong need for the Government to train the fishermen and other people employed within the district in the fields of:-

- Fish processing.
- Fish breeding and rearing
- Usage of cold storage facilities
- Marketing related training which will help them sell their wares better.

Industry

The recommendations for the Fisheries industry is as follows:-

- Enable setting up of more cold storage facilities in the district for the purpose of storing fish. This will encourage the fishermen to further process the fish and store them for longer periods of time as well as lesser wastage.

- The industry should also look to approach the State Government and tie up to provide the fishermen with better fishing equipment, bigger – modern boats etc. This will in utrn help the fishermen in increasing their catch (of the fishes) every time they go into the sea.

6.11. Petroleum and Petrochemical Industry

This is a very specialised industry requiring advanced skill sets in chemicals (Diploma and Engineering) apart from the usual skilled man power in the form of machine operators and other support staff. The petroleum industry includes the processes of exploration, extraction, refining, transporting (often by oil tankers and pipelines), and marketing petroleum products. Within Dakshina Kannada district, the processes are restricted to refining and marketing alone. This includes both petrol as well as other by-products obtained during the refining process.

While the industry is able to meet its manpower requirements by hiring both within the district and the state it faces a problem of having to train them for a period of 6 to 9 months in order to give the candidates an industry specific exposure. Also, one of the major areas where the industry faces issues and hence has to give out training is with regards to safety, especially fire safety as the risk of fire hazards are the highest in such plants.

This sector will help create more jobs in the district at the back of major investments by Mangalore Refineries and Petrochemicals Limited and Oil and Natural Gas Corporation and the setting up of the Mangalore – SEZ. Both GIM 2010 and 2012 has seen MRPL and ONGC look at setting up a new petrochemical unit as well expand on current capacitates.

Government

These industries require a large amount skilled manpower with knowledge of petroleum refinery operations and chemical handling processes. The recommendation for the government is as follows:-

- There is an immediate need to increase the number of seats in the Diploma in Chemical at the polytechnic institutes as well as Chemical Engineering (B Tech.) at the government engineering colleges in order to create a steady supply which can be used by the industries in the district and remove the need of these companies of hire from outside.
- Introduce petroleum, petrochemical and chemical industry specific courses within the educational institutions with adequate practical exposure like:-
  - B. E. / B. Tech in petroleum engineering

  - M. E. / M. Tech in petroleum management
  - B. E. / B. Tech in petrochemical engineering
  - B. Tech. (Applied Petroleum Engineering) with specialization in Upstream
  - B. Tech. (Chemical Engineering with specialization in Refining & Petrochemicals)
  - BBA and MBA (Oil and Gas)
- The above mentioned courses are ones offered currently by various private institutions but not of sufficient quality or industry recognition and hence it is important for the government to recognise the need and introduce them into main stream education.
- Also, for the lower order skilled labour like electrician, machinist, fitter etc who are required throughout the plant it is essential to provide an industry specific practical exposure to the students to make them readily hireable.
- There is also a need to include certain other subject areas in the focused education to the petroleum and petrochemical industry. These relate to:-
  - Fire and other industrial hazard safety training
  - Soft skill training
  - Effective communication training.

6.12. Others

Dakshina Kannada district is also home to many small and medium scale manufacturing and engineering based industries which face an acute shortage of skilled manpower of various skill sets. Some of them in immediate demand are mechanics, plumbers, electricians, masons, welders etc. There is a need to increase the number of students who graduate out of the existing ITIs and ITCs in the district from within each of these trades in order to meet the incumbent demand in the district. Also, there is a need to impart certain basic skills such as effective communication skills, English speaking skills and other soft skills that have been found to be lacking in manpower across all sectors.

3.13. DAVANAGERE

1. Introduction

Davanagere was formed as a separate district in the year 1997. It has a total land area of 5,976 sq. km., which is 3.2 per cent of the total State area. It is bordered on north by the Bellary district, on the east by the Chitradurga district, on the south by Chikmagalur district and on the west and north-west by the districts of Shimoga and Haveri.

It is sub-divided into six sub-districts and has 810 villages. Majority of the population at 69.7 per cent lives in rural areas. Agriculture is the main occupation, employing 65 per cent of the labour force (as of Census 2001). The remaining is in household industry (four per cent) and other workers[23] at 31 per cent.

Cereals and minor millets are the principle crops in Davanagere district. The percentage of gross cropped area allocated for the cereals and minor millets is significantly more in Davanagere district (75.77) compared to Karnataka state (43.43). Paddy and maize are the major crops grown in the district and account for about 65 percent of the gross cropped area of the district. This has led to setting up of

[23] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers are 'Other Workers'.

many agro based industries in the district. It has numerous rice based industries such as rice mills, beaten rice mills and puffed rice mills. Trading of agro based products is a major activity in the district. The district lacks industrial activity and is industrially backward. The district was classified as one of the country's 250 most backward districts in 2006 by the Ministry of Panchayat Raj.

Table 214: Comparison of Davanagere district with Karnataka – key indicators

Indicator	Year	Davanagere	Karnataka
Area, in sq.km.	2001	5,976	191,791
Percentage share in State geographical area, %	2001	3.2%	100%
No. of sub-districts	2011	6	175
No. of inhabited villages	2001	810	27,481
No. of households	2001	337,484	10,401,918
Forest area as a % of total geographical area	2001	15.1%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Davanagere district has a population of 19.5 lakh persons – 3.2 per cent of the State population. Majority of the population (34 per cent) is concentrated in Davanagere sub-district, followed by Channagiri sub-district at 16 per cent and Harapanahalli sub-district at 15 per cent, Harihar sub-district at 14 per cent and Honnali and Jagalur sub-districts at 12 and nine per cent respectively. While 63 per cent of the population in the district is in working-age group (15 to 64 years), about 44 per cent is actually working i.e. work participation rate.

The district's literacy rate is 76.3 per cent, which is slightly higher than the State average of 75.6 per cent, and also higher than All-India average of 74 per cent. Male literacy at 83.02 per cent is significantly higher than female literacy rate at 69.39 per cent. Of the 30 districts, Davanagere ranks 13th on Gender Development Index (GDI), with a value of 0.621.

Most of the population (69.7 per cent) lives in rural areas. In fact, as mentioned earlier, agriculture is also the main occupation of the people of the district, employing 65 per cent of the labour force as either cultivators or agricultural labourers.

Table 215: Key demographic indicators

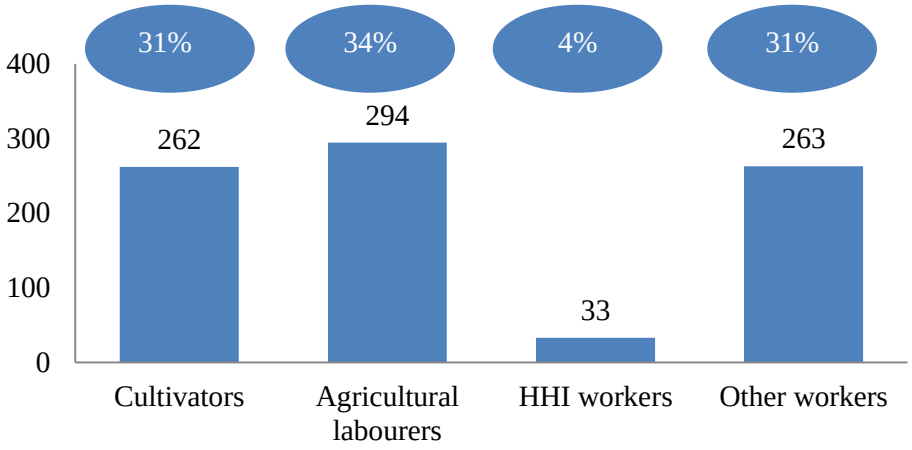
Indicator	Year	Davanagere	Karnataka
Population, No.	2011	1,946,905	61,130,704
Decadal growth rate of population, %	2001-11	8.2%	15.7%
District's share in State's population, %	2011	3.2%	100%
Urban population as a percentage of total population, %	2001	30.3%	34%
SC population, %	2001	18.6%	16.0%
ST population, %	2001	11.7%	7.0%
Sex ratio, No. of females per 1000 males	2011	967	968
Population density, per sq. km.	2011	329	319
Literacy rate, %	2011	76.3%	75.6%
Main workers, No.	2001	631,726	19,364,759
Marginal workers, No.	2001	152,055	4,170,032
Working age population* as a percentage of total population, %	2001	63.2%	63%
Work participation rate^, %	2001	43.8%	45%
HDI	2001	0.635	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 8.5 lakh persons. Of this, 31 per cent are cultivators, 34 per cent are agricultural labourers, four per cent are workers in household industry and 31 per cent are other workers.

Figure 118: Davanagere district's worker profile, as of 2011, in thousands

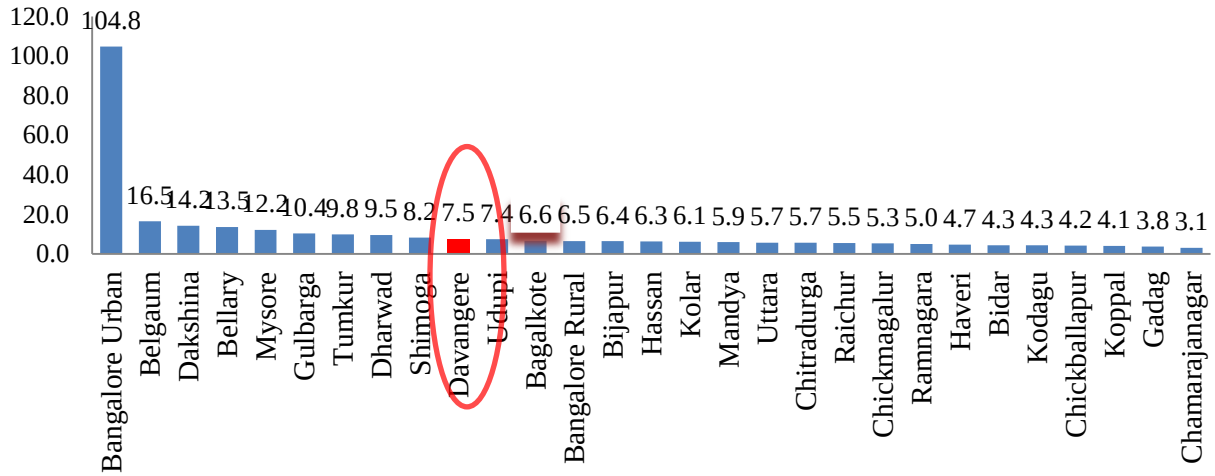


HHI: Household Industry
Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Davanagere district had the tenth largest Gross District Domestic Product (GDDP) in Karnataka at Rs 7,469.33 crore (2.4 per cent of the Gross State Domestic Product). In terms of per capita GDDP though, it ranked 14th amongst 30 districts at Rs 38,051. This was lower than the State average of Rs 53,101.

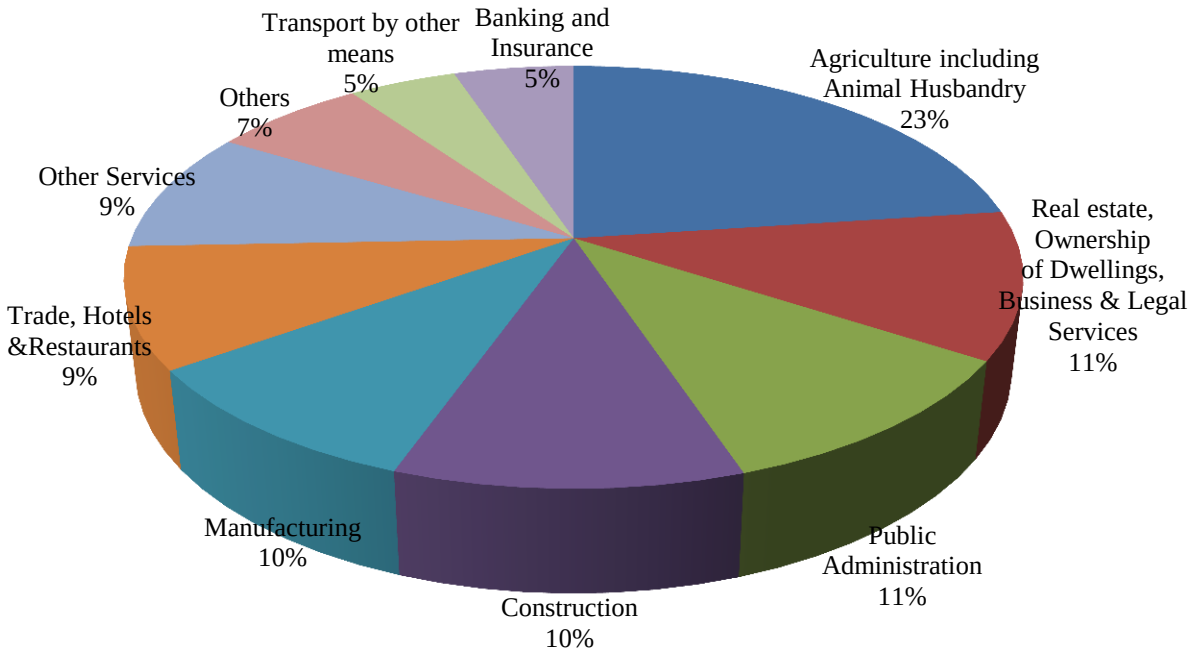
Figure 119: Gross District Domestic Product, in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 52 per cent in 2008-09. This is followed by primary sector at 26 per cent and secondary sector at 22 per cent

Figure 120: Sector wise distribution of Davanagere's GDDP, as of 2008-09, 100% = Rs 7,469.33 crore



Source: Karnataka Directorate of Economic and Statistics

Agriculture: Of the total area of 5,976 sq. km. in the district, over 66 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of paddy and maize under food crops and arecanut and coconut under commercial crops. For details of crops grown in Davanagere district, refer to annexures.

Industry: As of 31st December 2011, Davanagere district had six large and medium scale industrial units, employing 1,926 persons. These included companies such as Davanagere Sugar Company Limited, Anjaneyha Agro Tech Private Limited, Aradya Steel Wires (P) Limited, etc. (Refer to annexures for complete list). End products manufactured included sugar, refined rice bran oil, steel wire ropes, etc.

Davanagere also has 438 Small Scale Industries (SSIs), employing 1,460 persons. As of March 2010, majority of these were job works and repairs based industries at 31 per cent, followed by food and

intoxicants based industries at 20 per cent, mechanical engineering based industries at 10 per cent, wood based industries at eight per cent and remaining in others. Refer to annexures for details.

The district has four industrial areas, totalling 289 acres of land and has two industrial estates consisting of 62 acres. For details, refer to annexures.

Davanagere district is not able to generate investments from industrial players compared to most of other districts in the state. During the Global Investors Meet (GIM) held in 2010 in Karnataka, two Memorandums of Understanding (MoUs) amounting to Rs 452 crore were signed for the district. Once set up, these are estimated to employ 856 persons. For detailed status of these projects, refer to annexures. In the recently conducted Global Investors Meet (GIM) 2012, three MoUs were signed for the Davanagere district in the power and food processing sectors amounting to Rs. 2,164 crore. For details of the project, refer to annexures

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 52 per cent of GDDP in Davanagere district. Of all the services, the key services in the district are of 'real estate, ownership of dwellings, business and legal services' and 'public administration' at 11 per cent each of GDDP, followed by 'trade, hotels and restaurants' and other services at 9 per cent each and 'banking and insurance' at five per cent.

2.3. State of education

As of September 2011, Davanagere district had 2,378 schools, with 331,355 students enrolled. The drop-out rate was 3.25 per cent both for lower and higher primary schools. This is lower than the State average of 4.6 per cent for lower primary and 8.1 per cent for higher primary schools.

There are 116 pre-university (PU) colleges with 35,709 students. There are also 17 general colleges, two medical colleges, three polytechnics (for technical education), three engineering colleges and one dental college. For details of courses offered by polytechnics, refer to annexures.

Table 216: School education infrastructure in Davanagere district, as of March 2010

Type	Lower Primary	Higher Primary	High
Government	670	706	155
Aided	11	127	173

Type	Lower Primary	Higher Primary	High
Unaided	130	227	137
Others	4	20	18
Total	**815**	**1,080**	**483**

Source: District Information System for Education (DISE) 2011-12

Table 217: Higher education infrastructure in Davanagere district, as of March 2010

Colleges	No.	Students
PU Colleges	116	35,709
General	17	11,114
Medical	2	1,919
Polytechnic	3	2,047
Engineering	3	1,944
Dental	1	678

Source: Davanagere District At a Glance 2009-10

For vocational training, Davanagere district had a total of 52 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, three were Government ITIs, six were private aided ITIs and remaining 43 were private unaided ITIs. All the 52 ITIs together have a seating capacity of 5,792.

Table 218: Key ITI indicators in Davanagere district, as of March 2012

Indicator	Value
Total Number of ITIs	52
Number of Government ITIs	3
Number of Private aided ITIs	6
Number of Private unaided ITIs	43
Total Seating capacity	5,792
Student pass rate	70-75%
Student drop-out rate	15-20%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Davanagere district, we have found that on an average, of all the students that pass out from an ITI in each year, 70 per cent find jobs in the market. For details on courses offered by ITIs in Davanagere, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions.

The government department offer courses in trades such as agriculture, textiles, education, etc. In agriculture sector, 'District Agriculture Training Centre' conducts courses relating to the district agricultural status such as soil, crops, water, etc. Also, commodity based training program is given on crops such as paddy, arecanut, maize, sunflower and cotton by the state agricultural marketing board.
The district institute of education training provides courses on personality development, adult education and training of teachers. Under Swarna Jayanti Shahari Rozgar Yojana (SJSRY) scheme, step up programs on various trades are conducted by the District Urban Development Cell (DUDC). Directorate of Municipal Administration has set target for districts (DUDC) to train people on various courses such as turning, milling, carpentary, plumbing, welding, etc. The state run KEONICS offers computer related courses in the district.

The private training centres are offering computer courses. The courses offered by them includes Computer basics, MS office, Desktop Publishing (DTP), Tally, Programming languages (java, c), hardware courses, etc. There are few private training centres offering textile based courses such as sewing machine operator, tailoring, quality checker and garment finishing. The trainees are mostly placed with textile firms in Bengaluru. There also few other training centres providing training on beautician, typing, etc. For details of training institutes and courses offered, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Davanagere district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- Students from good colleges are able to get jobs in Bengaluru and prefer getting placed in Bengaluru only. Lure of city life and better lifestyle is high.
- Students, who are not able to get admissions in good colleges, prefer ITIs. The latter are also preferred because ITI certification helps in obtaining Government and even private jobs. The low fee is an added advantage.

- Students prefer government ITIs than private because of low fees, better infrastructure and adequate facilities
- Students are able to choose their preferred course as variety of options is available in the district.
- The important criteria for choosing any trade are the job opportunity for that trade and their interest in a particular field.
- Practical exposure is lacking in the training institutes.
- Quality of courses and teachers is good. Quality of infrastructure needs improvement.
- First preference is to work within Davanagere district. However, they are ready to shift to any new places (mainly Bengaluru) if they are offered a job.
- Some students along with their main course, pursue additional training courses on computer to increase their job opportunity
- Preferred sectors to work are manufacturing and IT

3. Developmental concerns

Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Industrial backwardness of the district:** The district continues to remain as an agrarian economy and industrial progress is lacking. People continue to work in agriculture and allied sectors. More than 65 percent of the working population of the district continues to depend on agriculture whereas it is about 55 percent in the state. The manufacturing sector of the district is contributing only 9.59 percent to the Gross Domestic Product of the district against 18.51 percent of the state. The Number of Persons Employed in the Factory per 1000 Population (NPEF/1000 P) was 22.76 in the entire state but it was only 4.3 in the district. These data clearly indicates the relative backwardness of industrial sector in the district[24]. Also, the few industries available in the district are also concentrated in the Davanagere and Harihar taluks and other taluks are industrially very backward. New industries need to be established which can act as a catalyst for the economic growth in the region.
- **Shortage of skilled manpower within the district:** The district has many educational institutions providing education and training to the locals. However, locals, especially youth are more prone to moving to places such as Bengaluru for better job opportunities along with higher

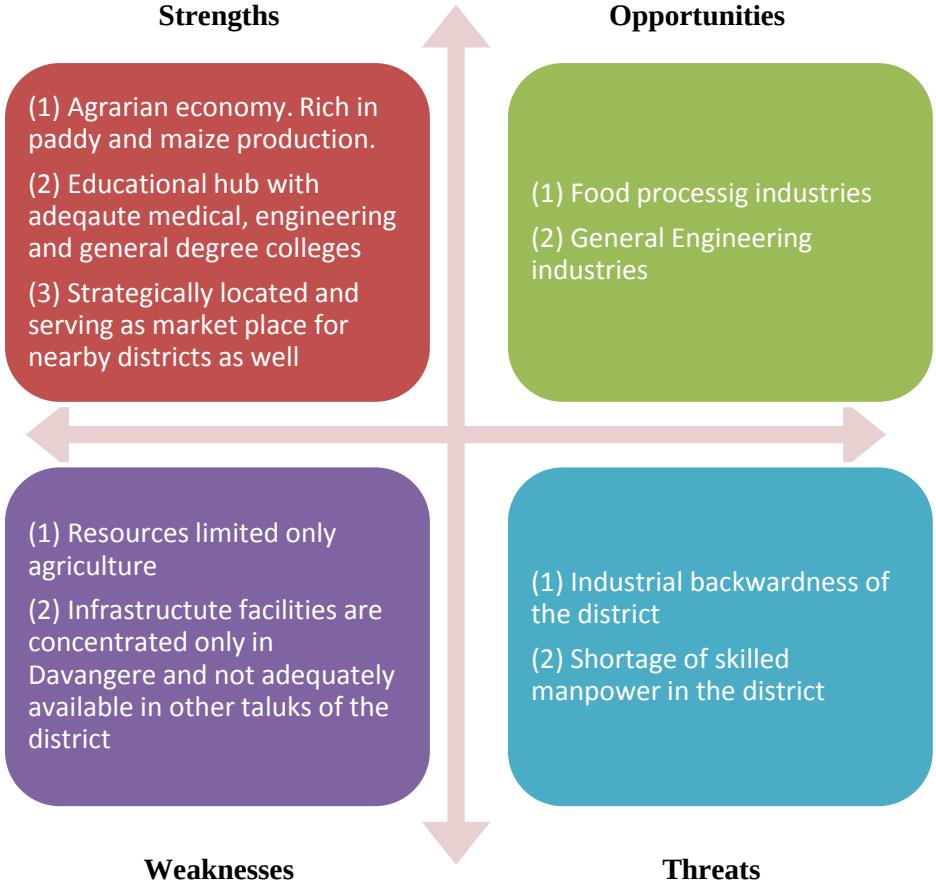
[24] Source: Davanagere district 12th five year plan by Zilla Panchayath, Davanagere

compensation packages and standard of living. One of the major reasons for this situation is that there are not many industries available in Davanagere district to provide employment to them. They move out of the district and thereby resulting in a shortage of skilled manpower within the district. When new industries start to function in the district, there may be a scenario that they might not be able to get the required skilled manpower with experience locally within the district.

SWOT analysis

Based on the diagnostics of the Davanagere district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 121: SWOT Analysis of Davanagere district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 1.64 lakh

persons is likely to be generated in Davanagere district. Agriculture and allied activities are expected to remain the biggest employers. As the economy grows, employment demand in supporting sectors such as construction, transportation, healthcare and education is also expected to increase at a faster rate. However, sectors which are unique to Davangere and where skill up-gradation will be required within Davanagere are food processing, and engineering based industry.

Table 219: Incremental demand in Davanagere – 2012 to 2022

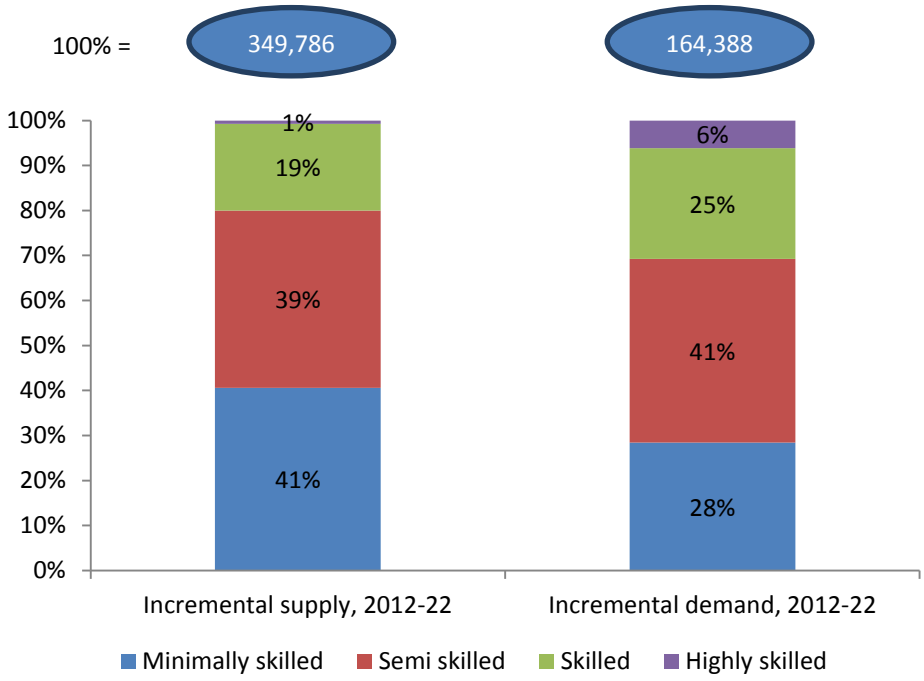
SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	60,947	50,761	7,587	1,380	1,219
BFSI	5,829	-	3,497	1,749	583
Building, Construction industry and Real Estate	36,982	11,095	18,491	5,547	1,849
Construction Materials and Building Hardware	2,297	230	1,493	459	115
Education and Skill Development	12,872	-	-	11,585	1,287
Food Processing	220	66	66	66	22
Furniture and Furnishings	285	114	114	43	14
Healthcare Services	23,024	-	2,302	16,117	4,605
Textile and Clothing	263	53	158	39	13
Transportation, Logistics, Warehousing and Packaging	14,862	2,972	8,620	2,972	297
Tourism, Travel, Hospitality & Trade	6,701	1,340	4,557	670	134
Unorganised	96	19	55	19	2
Total	**164,388**	**66,650**	**46,947**	**40,649**	**10,141**

Source: IMaCS Analysis. Note: Numbers for sectors will not add up to the total due to very small numbers accounted for by sectors such as auto and auto components.

The incremental supply of work-force between 2012 and 2022 is estimated at 3.49 lakh. This is higher than the demand, indicating that some of the workforce available in the district will not be absorbed within the district alone. People will continue to move to Bengaluru and other parts of the State, where demand is higher. As mentioned earlier, industrial activity in the district is low compared to other district and most of the persons are involved in agriculture and allied activities. It is believed that industrial activities in the district will improve in the future and the skilled manpower in the district will be absorbed by them. Also, demand for highly skilled people is estimated to be more than the supply going forward. Davanagere district has adequate educational institutions training skilled workforce. However, currently most of the people are migrating to Bengaluru and other cities for opportunities on

completion of their education. If industries are set up and opportunities are provided, this migration can be controlled and demand for highly skilled people can be filled.

Figure 122: Skill wise incremental demand and supply in Davanagere district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on our field surveys in Davanagere district, we have found out that sectors where skilling interventions are required are mainly agriculture and allied, food processing, and engineering based industry. While new jobs are likely to be generated in agriculture allied sector, textile and clothing and tourism; interventions in handloom sector are mainly from the skill up-gradation perspective. In addition, the district also has other manufacturing industries, which do not have significant employment generation potential, but are facing shortage of skilled manpower for functional skills such as electrical, turning etc.

Table 220: Sectors where interventions are required in Davanagere district – comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Davanagere	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		
Additional sectors	**Davanagere**	**Karnataka**
Engineering based industry		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 221: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Food processing - Food grain milling			√
Others (Engineering industry)	√		√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Food processing – Food grain milling

Cereals and minor millets are the principle crops in Davanagere district as well as in Karnataka. But the percentage of gross cropped area allocated for the cereals and minor millets is significantly more in Davanagere district (75.77) compared to Karnataka state (43.43). Irrigated areas of the district are concentrating only on paddy. In Harihar taluk, 71 per cent of gross cropped area has been allocated for paddy 2008-09 and it was 43 per cent in Davanagere taluk. Nearly 3/4th of the dry land area is under the maize crop. Thus, paddy and maize together account for about 65 percent of the gross cropped area of the district[25]

As mentioned above, paddy is grown in abundance in the district. As of 2008-09, area covered under paddy production in the district was 130,208 hectares which constitutes more than one-fourth (28.26 percent) of the total area under cultivation of all crops. Harihar and Davanagere are the taluks where paddy cultivation is high.

This high production of paddy has led to several rice based industries in the district. There are almost around 160 – 180 rice mills, 60 – 80 beaten rice mills and 800 small puffed rice manufacturing units in the district.[26] The value chain and skill gaps prevailing in this industry are mentioned below.

Rice milling plant

[25] Source: Davanagere District 12th Five year plan (2012-13 to 2016-17)
[26] Source: District Industries Centre (DIC), Davanagere

Figure below gives the value chain of the rice based industries present in Davanagere district.

Figure 123: Value chain within the food grain milling segment in Davanagere district

Source: NABARD and IMaCS Analysis

Table 222: Skill gaps in rice milling industries in Davanagere district

Role, educational qualification	Expected competency	Skill gaps
Manager / Supervisor/ Quality control (any degree)	▪ Visual examination skills for faster segregation and checking of input/output ▪ Ability to record the results as they are observed and reporting on adherence to standards ▪ Ability to effectively communicate with the team and brief them of production objectives ▪ Supervise the entire process flow ▪ Managing other workers in the mill	▪ Lack managerial capabilities ▪ Inadequate knowledge about machineries used ▪ Lack of understanding about modern technology used in rice milling
Operator (10th / 12th pass with 1-2 years of Experience)	▪ Ability to handle breakages/breakdown in machine parts ▪ Technical knowledge of milling machinery ▪ Knowledge about various types of rice and variation in the process flow for each type ▪ Ability to check and maintain the	▪ Lack knowledge about modern machineries (imported machines used in milling) ▪ Inadequate planning of work schedules

Role, educational qualification	Expected competency	Skill gaps
	machinery on a regular basis	
Helpers (8th standard/ illiterate)	▪ Knowledge of basic controls and settings of machines being worked on ▪ Knowledge about types of rice and process required for each type ▪ Ability to stitch gunny bags neatly so as to avoid leakage ▪ Basic importance of quality maintenance in terms of consistency with respect to. following rules / guidelines	▪ No special skills required ▪ Inability to understand the instructions given by supervisor/operator ▪ Inability to follow best hygienic practices

Source: IMaCS Analysis

5.2. Engineering based industry

Davanagere district has a number of general engineering and fabrication units. These units manufacture various supplies that are used in many sectors such as auto and auto components, manufacturing industries, etc. There are roughly about 800 -900 general engineering and fabrication units in the district[27].

Most of these units are concentrated around Davanagere and Harihar taluk. Harihar is known for general engineering industry units and it has around 60 – 80 machine tool units (involved in making precision instruments like gears, milling machine, etc.) and around 30 foundry units. Foundry units in the taluk are popular for their quality products (castings) and some foundry units are also involved in export. Cylinder liner is the major casting done in these foundries.

These industries are facing difficulty in getting skilled manpower in the district. There are only few skilled people available. People join and work for few years here and enhance their skills through experience. Then, most of the experienced and skilled personnel migrate to cities such as Bengaluru.

[27] Source: District Industries Centre (DIC), Davanagere

They migrate to cities due to higher salary and better standard of living. These units face a shortage of skilled manpower. There are some skill gaps prevailing among the workers and is explained below in

Table 223.

A Foundry unit in Harihar Taluk

Figure 124: Value chain in foundry industry

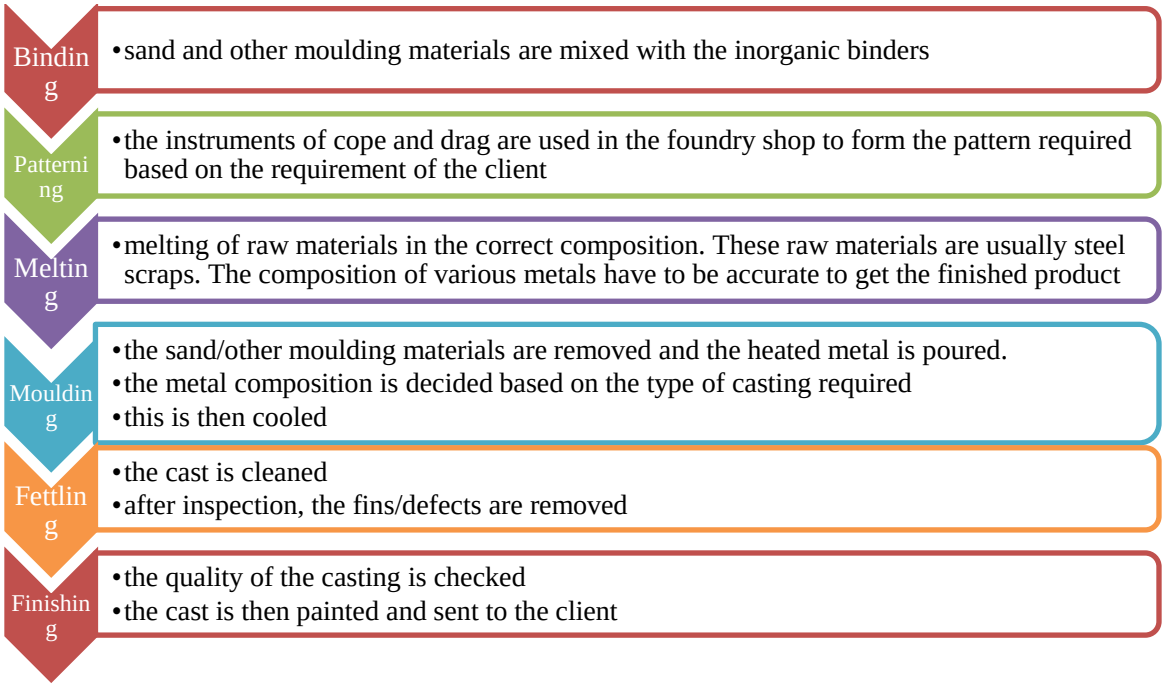


Table 223: Skill gaps in foundry industry in Devanagere district

Role, educational qualification	Expected competency	Skill gaps
Supervisors (Diploma in electrical, mechanical, ITI qualified)	▪ Ability to supervise activities conducted in the department for which responsibility is entrusted. ▪ Ability to train the new comers ▪ Overseeing the safety of all workers ▪ Complete understanding of all safety regulations and ability to handle safety issues ▪ Knowledge of PRC systems ▪ Knowledge about metals and steel ▪ Give the specifications to the operators and welders/fitters ▪ Understand the latest technology followed in the industry	▪ Inability to adapt to the latest technology used in shop floor ▪ Lack of knowledge about various metals and composition to be mixed for melting
Fitters, foundrymen turners, (ITI or 10th std with experience in the foundry industry)	▪ Basic ability to handle the machines ▪ Understand the basic safety aspects ▪ Understand the instructions from the supervisor and perform work accordingly ▪ Basic knowledge about the industry and value chain process ▪ Regular checking and maintenance of machines ▪ Adhere to the quality standards fixed ▪ Reduce the wastage	▪ Inability to adapt to the latest technology used in shop floor ▪ Lack the discipline to come and put in the required hours of work ▪ Inability to produce quality work consistently
Helpers / machinery	▪ Ability to help operators with their day to day functions	▪ Lack of knowledge about the machines

Role, educational qualification	Expected competency	Skill gaps
attendants (High school pass)	▪ Help in cleaning the machines ▪ Help in loading and un-loading ▪ Understanding of various materials and machines used in the industry	▪ Inability to perform work as per the instructions at first instance

Source: IMaCS Analysis

6. Recommendations

Recommendations for Davanagere district focuses on the industries that have employment generation potential and also facing skill gap of manpower. The industries that are taken into consideration are Food processing – rice milling units, and Engineering based industries in the district. There are also recommendations provided based on the general industrial scenario in the district.

Davanagere district is basically an agrarian economy and significant percentage of employment is concentrated in agriculture, thus, major up-skilling can be done for those workers, updating them of latest techniques of farming. This will help them improve their livelihood opportunities and will increase their income levels. While the detailed recommendations follow, summary is given in the table below.

Table 224: Key recommendations for Davanagere - summary

Sector	For Government	For private players	For Industry
Food Processing / Agriculture and allied activities	▪ Government can offer short term course milling through its various schemes ▪ Training on milling machine operation,	▪ Training in food processing ▪ Up skilling training program for existing food processing units such as gherkin	▪ Establishing new units in the proposed food park ▪ Existing units can aid farmers through training them on modern

Sector	For Government	For private players	For Industry
	process requirement on various types of rice ▪ Assistance can be provided for setting up of food processing units	processing, arecanut processing, etc.	farming practices
Engineering based industry	▪ Government ITIs can upgrade their courses to meet industry standards	▪ Existing institutes can improve the infrastructure facilities (equipments and lab) and impart practical exposure to students ▪ Training students on latest technology and equipments	▪ Employ students from training institutes ▪ Participate in training students through guest lectures and field visits
Others	▪ Take measures to improve the industrial activities in the district by providing incentives and impetus to new industries in the district.	n/a	▪ New industries can be set up in the district ▪ Scope for agro based and engineering based industries

6.1. Food Processing – Food grain milling

Paddy is grown in abundance in the district and the crop accounts for over one-fourth of the total area under cultivation of all crops. Irrigated areas of the district are concentrating on paddy only. Many rice milling units are available in the district and they process various types of rice for consumption. Some of the milling units are also involved in the export market. Davanagere is also strategically located centrally in the state and has traditionally been a market place for trading of grains and cotton. There are many people in the district employed in these milling units. Most of the workers are classified under the semi-skilled workers category. There is also a plan of developing a food processing industrial zone as per the Karnataka Industrial Policy 2009 – 14. If this food processing zone is established, capacity building for this sector is essential based on the type of products produced.

Government

Government can play a major role in improving the skill of the man power involved in this industry. There are some training given by the state government in relation to agriculture such as commodity based training program by Karnataka state agricultural marketing board and district agriculture training centre.

Department of Agriculture can also assist and encourage the training provided by other private players to the farmers. Similar short term courses can be offered on rice milling based on the requirement such as:

- Milling machine operation
- Knowledge about various machines used in milling
- Different types of rice and processing requirement for each type

If the food processing zone is established, courses on food processing can be introduced for capacity building in the sector. Government could also assist the industry players in setting up their units in the proposed food park.

Private players

In Rice milling units, semi-skilled and unskilled workers are employed. The industry is mechanised and they learn the operation through experience. Based on our discussions with the industry players, it is observed that there is no major skill gap faced by the rice milling units. There is less scope for training in this sector. However, if the food processing zone is established, private training centres can involve in

capacity building for the sector. Food processing courses can be offered based on the type of industries and products established.

Training providers can also train people in the existing food processing industries in the district. Up skilling courses can be conducted for the existing employees. The food processing units currently in the district includes Gherkin processing, marigold dyes processing, oil extraction and arecanut processing units.

Industry

The proposed food park in Davanagere is believed to have units in areas such as fruit pulping & processing, cereal processing, oil seed extraction and herbal extraction[28]. Industries currently operating in these areas can establish their units in the proposed parks. These units will require semi-skilled and skilled workers for processing. These industries could tie up the training providers and could recruit people required for the units. They could also consult these training providers on the courses conducted.

These industries could aid farmers through measures such as contract farming. They could also conduct training program for farmers on modern farming practices, irrigation, usage of fertilizers and pesticides, etc. This would result in increase of productivity from farmers.

6.2. Engineering based industries

Davanagere district has a number of general engineering and fabrication units. These units manufacture various supplies that are used in many sectors such as auto and auto components, manufacturing industries, etc. There are roughly about 800 -900 general engineering and fabrication units in the district[29].Most of these units are concentrated around Davanagere and Harihar taluk. Harihar is known for general engineering industry units and foundry units in the taluk are popular for their quality products (castings) and some foundry units are also involved in export. Cylinder liner is the major casting done in these foundries. These industries are facing difficulty in getting skilled manpower in the district. There are only few skilled people available. People join and work for few years here and enhance their skills through experience. Then, most of the experienced and skilled personnel migrate to cities such as

28 Source: Karnataka State Industrial & Infrastructure Development Corporation Limited and Food Karnataka Limited

29 Source: District Industries Centre (DIC), Davanagere

Bengaluru. They migrate to cities due to higher salary and better standard of living. These units face a shortage of skilled manpower.

Private players

Engineering based industries require skilled manpower. The engineering based industries recruit students from ITI for workers like turner, fitter, electrician, etc. There is adequate number of ITIs in the district. However, the quality of these institutes needs to be improved. There are some private training institutes in the district which do not have adequate infrastructure facilities (equipments and lab) to meet industrial standards. These facilities needs to be upgraded to impart practical knowledge to the trainees. The private ITIs need to focus on the following:

- Improve the infrastructure facilities (equipments) and enhance the practical exposure of students
- Training students on handling latest equipments and machineries
- Industrial exposure to students by guest lecture from industry people, field visit to industry, etc.

Government

Government can also help in capacity building in this sector. There are adequate institutes in the district to provide man power to the industries. The quality of the courses can be upgraded and similar measures mentioned for private institutions can be implemented in Government ITIs as well. District Urban Development Cell (DUDC) conducts step up programs on various trades. Similar programs can offer courses on these engineering based industries as well to generate employment.

Industry

Some of the measures that can be taken by the industrial units in the district are:

- Employ students coming out of training institutes such as ITI, ITC
- They can have tie up training institutes and can convey the industry requirements and suitable training may be provided
- Participation in training through guest lectures and arranging field visits for students to the industries

6.3. Others

In Davanagere, there is not much of industrial activity and it continues to remain as an agrarian economy. More than 65 percent of the working population of the district continues to depend on agriculture whereas it is about 55 percent in the state. The industrial sector of the district is contributing only 23.2 percent to the Gross Domestic Product of the district against 28.9 percent of the state. The Number of Persons Employed in the Factory per 1000 Population (NPEF/1000 P) was 22.76 in the entire state but it was only 4.3 in the district. These data clearly indicates the relative backwardness of industrial sector in the district[30]. Also, the few industries available in the district are also concentrated in the Davanagere and Harihar taluks and other taluks are industrially very backward. New industries need to be established which can act as a catalyst for the economic growth in the region. Davanagere is known as an educational hub and there are many educational institutions in the city. However, these people upon completion of their education migrate to cities such as Bengaluru for job opportunities as there are not many industries in the district.

Government

The government can take initiatives on promoting new industries in the district. If new industries are started in the region, students coming out of educational institutions can find a job within the district. By this way, migration of skilled manpower in the district can also be controlled. There have been measures taken by the government in this aspect. In the comprehensive district development plan for Davanagere (12th five year plan – 2012-13 to 2016-17), there are developmental plans made for the industrial sector. It is mentioned that it is desirable to increase the number of factory units to 600 and the NPEF per 1000 population to at least 20 by the year 2025. The government can take measures to achieve this vision and also can provide impetus and incentives for encouraging the industrial units to set up a venture in the district.

Industry

New industrial units can be set up in the district. There is adequate availability of manpower in the district. Davanagere is referred as an educational hub and skilled manpower is available. This is also evident in our projection of incremental demand and supply of human resources in the district. The supply is higher than the demand and setting up of new industries in the district can help in balancing the gap.

[30] Source: Davanagere district 12th five year plan by Zilla Panchayath, Davanagere

The district has favourable conditions for industries. There is a good scope for agro based industries, food processing industries and engineering based industries. New industrial units can be set up and this will help in improving the general industrial scenario that is prevailing in the district.

3.14. DHARWAD

1. Introduction

The district of Dharwad is located in the northern part of Karnataka. Dharwad has historically been known as a place that connects the Malanad (the Ghat section) portions of the state and the plains. The name Dharwad by itself is derived from Sanskrit word that means door (to the northern part of India). The district headquarters of Dharwad city and its twin counterpart Hubli have been known as cultural and educational centers. The district is spread over an area of 4,265 square kilometres. Dharwad district lost some of its land when the districts of Haveri and Gadag were carved from it. The district is bounded on the North by the District of Belgaum, on the East by the district of Gadag, on the South Haveri district and on the West by Uttara Kannada district.

It is sub-divided into five sub-districts and has 361 villages. About 45 per cent of the population lives in rural areas. About 55 per cent of the population (as of Census 2001) works in agriculture. The remaining is in household industry (three per cent) and other workers[31] at 44 per cent.

[31] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

Dharwad has been a renowned centre of learning, with many famous high schools, colleges and universities. The famous Karnatak University has its campus in the district.

Jowar, maize, wheat and paddy are the key crops grown. Apart from agriculture, Hubli-Dharwad has been known as a center for commerce rather than an industry hub. Today, the district is at the threshold of change. New industries, especially in the arena of auto and auto components are being established in the district. This is slowly changing the profile of the district from a culture and knowledge center to industry hub.

The main factor that is propelling this shift is the locational advantage that Dharwad reaps, as it is centrally located between Bangalore and the Mumbai corridors.

Table 225: Comparison of Dharwad district with Karnataka – key indicators

Indicator	Year	Dharwad	Karnataka
Area, in sq.km.	2001	4,265	191,791
Percentage share in State geographical area, %	2001	2.2%	100%
No. of sub-districts	2011	5	175
No. of inhabited villages	2001	361	27,481
No. of households	2001	297,494	10,401,918
Forest area as a % of total geographical area	2001	8.2%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Dharwad district has a population of 18.46 lakh persons – 3.02 per cent of the State population. About 50 per cent of the population is concentrated in the Hubli Dharwad Municipal Corporation. This is followed by the Navalgund taluka with 11 per cent. While 64 per cent of the population in the district is in working-age group (15 to 64 years), about 43 per cent is actually working i.e. work participation rate.

The district's literacy rate is 80.3 per cent, which is higher than the State average of 75.6 per cent, and also the All-India average of 74 per cent. Male literacy at 86.83 per cent is significantly higher than female literacy rate at 73.57 per cent. Of the 30 districts, Dharwad ranks 11th on Gender Development Index (GDI), with a value of 0.626.

Table 226: Key demographic indicators

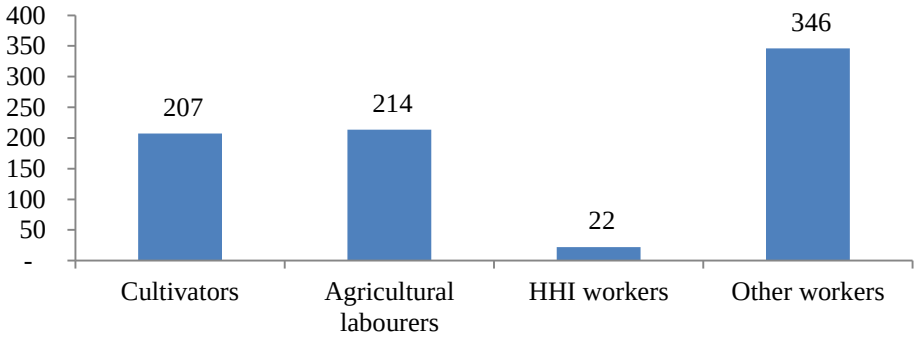
Indicator	Year	Dharwad	Karnataka
Population, No.	2011	1,846,993	61,130,704
Decadal growth rate of population, %	2001-11	15.13%	15.7%
District's share in State's population, %	2011	3.02%	100%
Urban population as a percentage of total population, %	2001	55%	34%
SC population, %	2001	8.2%	16.0%
ST population, %	2001	4.4%	7.0%
Sex ratio, No. of females per 1000 males	2011	967	968
Population density, per sq. km.	2011	434	319
Literacy rate, %	2011	80.3%	75.6%
Main workers, No.	2001	587,018	19,364,759
Marginal workers, No.	2001	97,474	4,170,032
Working age population* as a percentage of total population, %	2001	64%	63%
Work participation rate^, %	2001	43%	45%
HDI	2001	0.642	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 6.85 lakh persons. Of this, 26 per cent are cultivators, 27 per cent are agricultural labourers, three per cent are workers in household industry and 44 per cent are other workers.

Figure 125: Dharwad district's worker profile, as of 2011, in thousands

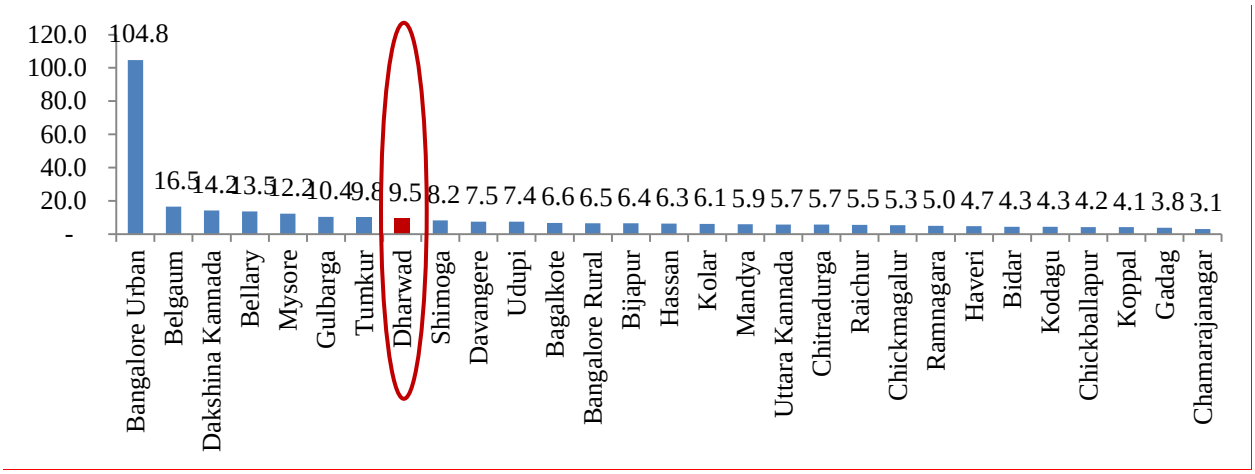


HHI: Household Industry
Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Dharwad district had the eighth largest Gross District Domestic Product (GDDP) in Karnataka at Rs 9,503.99 crore (3.08 per cent of the Gross State Domestic Product). In terms of per capita GDDP though, it ranked seventh amongst 30 districts at Rs 54,049. This was higher than the State average of Rs 53,101.

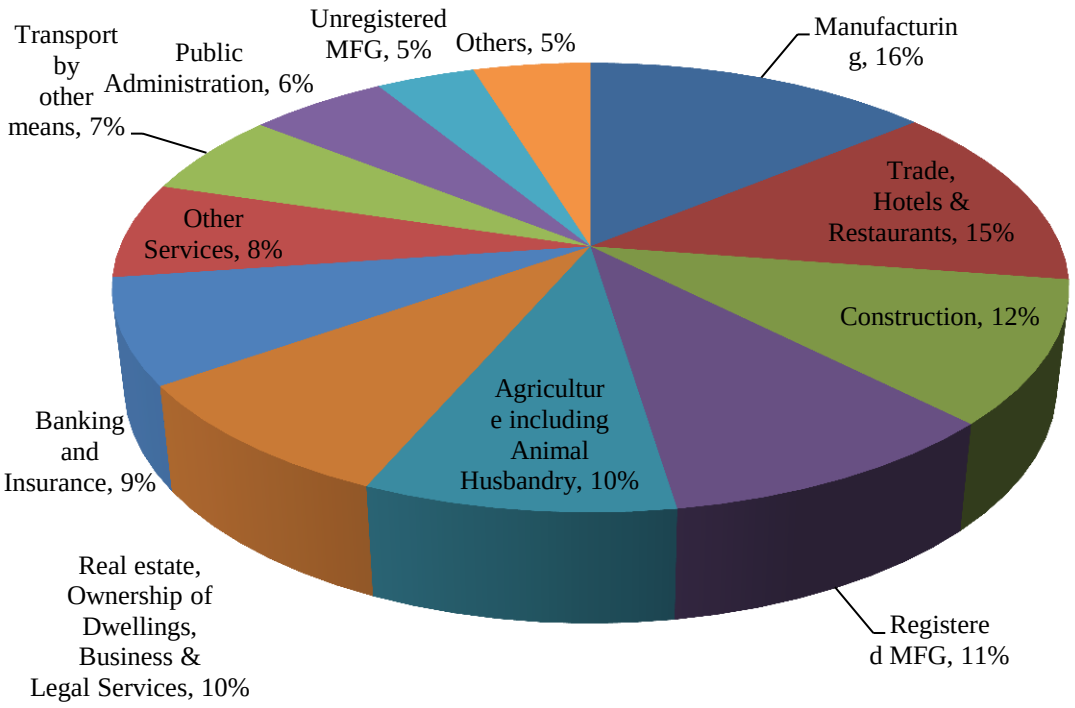
Figure 126: Gross District Domestic Product, in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 59 per cent in 2008-09. This is followed by secondary sector at 29 per cent and primary sector at 12 per cent.

Figure 127: Sector wise distribution of Dharwad's GDDP, as of 2008-09, 100% = Rs 9,503.99 crore



Source: Dharwad District At a Glance 2009-10

Agriculture: Of the total area of 4265 sq. km. in the district, over 72 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of jowar and maize under food crops. Tobacco is also grown in the district as commercial crop. For details of crops grown in Dharwad district, refer to annexures.

Industry: As of 31st December 2011, Dharwad district had 14 large and medium scale industrial units, employing 3,745 persons. These included organizations of repute like the Gujarat NRE Coke Ltd., Tata MarcoPolo, Kirloskar Electrical Company, Telco, etc (Refer to annexures complete list).

Dharwad also has 924 Small Scale Industries (SSIs. As of March 2010, majority of these units were job works units and small electrical units. Refer to annexures for details.

This is the key challenge area for the Dharwad district. In spite of its locational advantage, it has not made great strides in the arena of industrial development. The main reason for this is that the district is known for being for cultural hub than an industrial hub. This is one aspect that the district administration is trying hard to change.

The district has seven industrial areas, totalling 4,779 acres of land. The Gokul industrial area situated near the airport has many industries. For details on industrial areas, refer to annexures.

Dharwad district attracted investments in the sectors of storage, biomass fuel and automobile in the GIM 2010. Totally seven MoUs were signed. For detailed status of these projects, refer to annexures.

Karnataka held its second GIM in June 2012. During this event, 11 MoUs / Expressions of Interest / Registrations of Interest happened for the district. These MoUs are mainly across the sectors of hospitality and automobile, reiterating the district becoming an auto hub. For details of these projects, refer to annexures.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 59 per cent of GDDP in Dharwad district. Of all the services, the key services in the district are of trade and hotels at 15 per cent and real estate, ownership of dwellings, business and legal services at 10 per cent of GDDP.

2.3. State of education

As of March 2010, Dharwad district had 1,418 schools, with 315,117 students enrolled. There are 102 pre-university (PU) colleges with 35,102 students. There are also 106 general colleges, two medical colleges, 12 polytechnics (for technical education), three engineering colleges and one dental college. For details of courses offered by polytechnics, refer to annexures.

Table 227: School education infrastructure in Dharwad district, as of March 2010

	Lower Primary		Higher Primary		High	
Type	No.	Students	No.	Students	No.	Students

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Govt.	773	105,068	199	54,432	89	26,240
Aided	93	18,719	1	22,138	129	38,865
Unaided	254	52,719	8	22,549	124	20,434
Total	1,120	176,506	208	99,119	342	85,539

Source: Karnataka Education Department

Table 228: Higher education infrastructure in Dharwad district, as of March 2010

Colleges	No.	Students
PU Colleges	102	35,102
General	106	16,834
Medical	2	1,052
Indian System of Medicine Institutions	5	751
Polytechnic	12	7,203
Engineering	3	7,213
Dental	1	244

Source: Dharwad District At a Glance 2009-10

For vocational training, Dharwad district had a total of 57 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, four were Government ITIs, 15 were private aided ITIs and remaining 38 were private unaided ITIs. All the 57 ITIs together have a seating capacity of 6,660.

Table 229: Key ITI indicators in Dharwad district, as of March 2012

Indicator	Value
Total Number of it is	57
Number of Government it is	4
Number of Private aided it is	15
Number of Private unaided it is	38
Total Seating capacity	6,660
Student pass rate	85%
Student drop-out rate	3-5%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Dharwad district, we have found that on an average, of all the students that pass out from an ITI in each year, 75 per cent find jobs in the market. For details on courses offered by ITIs in Dharwad, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions. The Government Departments offer courses in trades such as machinist, tool room training, vocational training, poultry farming, dairy, motor driving, computers etc.

The private training institutes are offering courses in hospitality, computer, multimedia, nursing, physiotherapy, Ayurveda and pharmacy. For details of courses offered by private training institutes in Dharwad district, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Dharwad district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- Are very keen on moving out their base from Hubli-Dharwad to other cities as the youth has the perception that Hubli-Dharwad is a place to settle after retirement.
- Mumbai is the preferred destination
- Students, who are not able to get admissions in good colleges, prefer ITIs. The latter are also preferred because ITI certification helps in obtaining Government and even private jobs. The low fee is an added advantage.
- Quality of courses and teachers is average. Quality of infrastructure is below average.
- Prefer to remain unemployed rather than joining jobs with lower salaries.
- Preference for white collar jobs as compared to blue collar and manual jobs.
- Want to master communication in English
- Also, the youth expect special course for interviews
- Want enhanced computer training

3. Developmental concerns

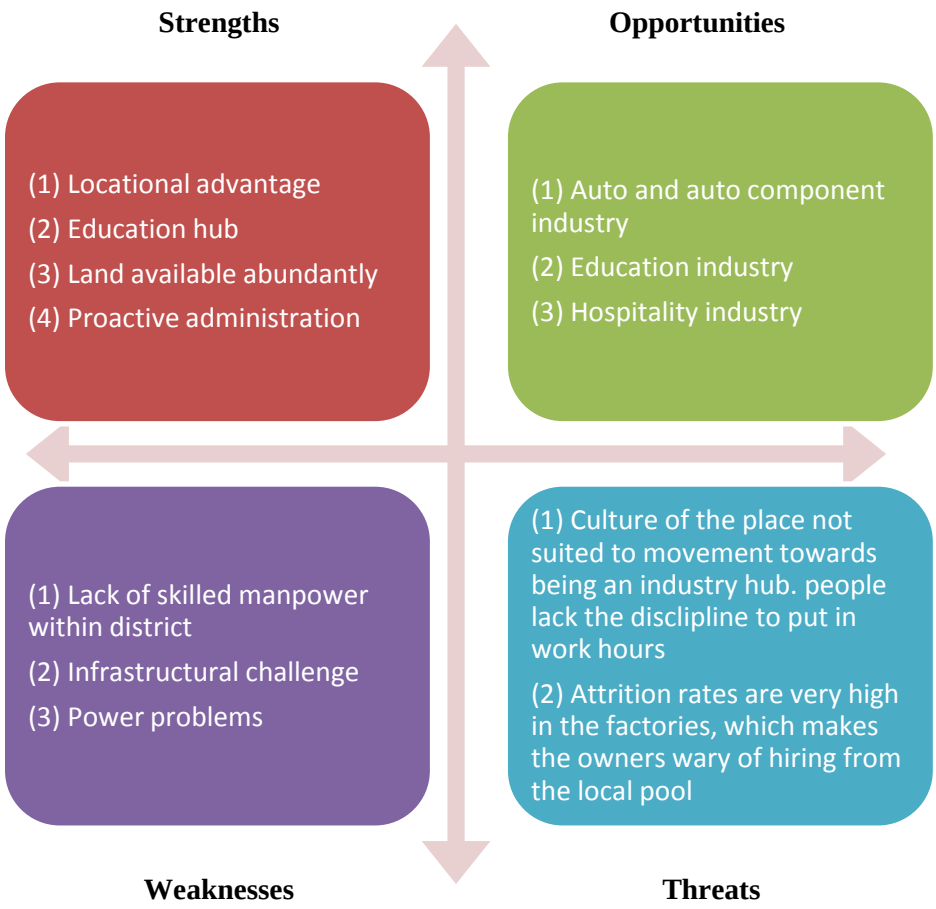
Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Lack of market relevant educational courses:** With the paradigm shift on the cards for the district, the educational atmosphere also needs to change. Though the education in the district is renowned, certain aspects of it need to change. The question here is not of quality but the relevance. The courses are not echoing the burgeoning demands of the industry in terms of the technical skills. This aspect needs to be changed.
- **Infrastructural challenges:** The roads that connect key industrial hubs in the district need better repair and maintenance. Also, the industrial prospects are largely hit by the lack of fully functional airport infrastructure. Also, the proposed Hubli-Ankola railway link has not moved forward. There is also power shortage which affects the industrial productivity.
- **Low motivational levels:** The catchment area for unskilled and semi-skilled is the towns that surround the twin cities. The youth here prefer migrating and not taking up factory level jobs. This has made the cost of labour rise for the available labour force. Also, there is high attrition from the factories, which is again attributed to the low motivation of the human resource.

SWOT analysis

Based on the diagnostics of the Dharwad district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 128: SWOT Analysis of Dharwad district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 1.93 lakh persons is likely to be generated in Dharwad district. Agriculture and allied activities are expected to remain the biggest employers. But, with Dharwad emerging as auto hub, the sector is expected to

generate employment. As the economy grows, employment demand in supporting sectors such as construction, transportation, healthcare and education is also expected to increase at a faster rate. There is also maximum demand for semi-skilled people, especially in welding, fitting and masonry. However, sectors which are unique to Dharwad and where skill up-gradation will be required within it are hospitality, education and skill development and auto and auto component.

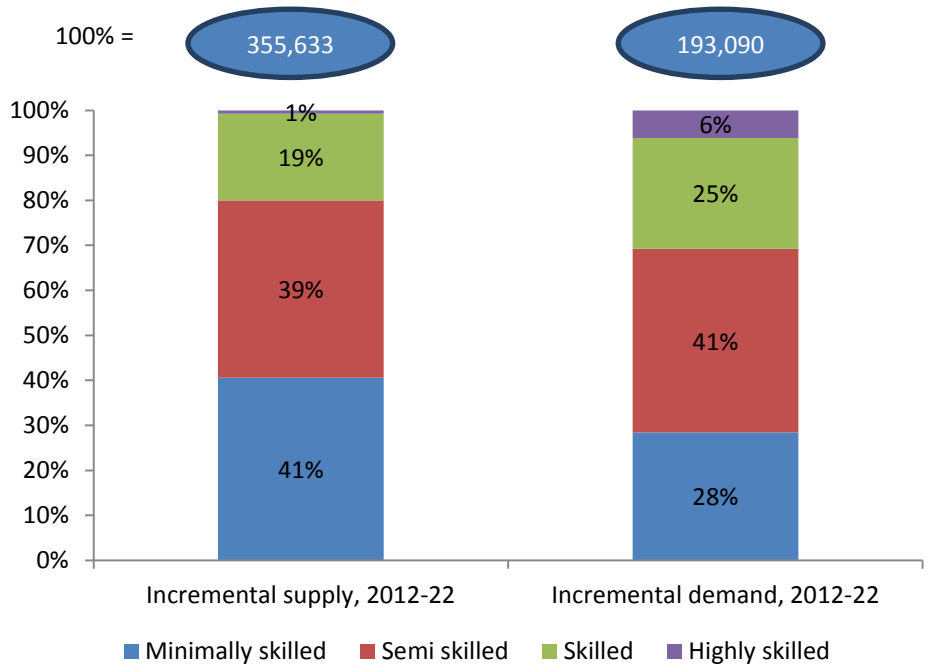
Table 230: Incremental demand in Dharwad – 2012 to 2022

SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	43,246	36,018	5,384	980	865
Auto and Auto component	10,748	1,075	6,986	2,150	537
BFSI	10,758	-	6,455	3,227	1,076
Building, Construction industry and Real Estate	53,002	15,901	26,501	7,950	2,650
Construction Materials and Building Hardware	3,292	329	2,140	658	165
Education and Skill Development	12,660	-	-	11,394	1,266
Food Processing	162	49	49	49	16
Furniture and Furnishings	608	243	243	91	30
Healthcare Services	21,337	-	2,134	14,936	4,267
Transportation, Logistics, Warehousing and Packaging	31,722	6,344	18,399	6,344	634
Tourism, Travel, Hospitality & Trade	5,231	1,046	3,557	523	105
Unorganised	197	39	114	39	4
Total	**193,090**	**61,064**	**72,011**	**48,383**	**11,632**

Source: IMaCS Analysis. Note: Numbers for sectors will not add up to the total due to very small numbers accounted for by sectors such as electronics and IT hardware and food processing.

The incremental supply of work-force between 2012 and 2022 is estimated at 3.55 lakh. This is higher than the demand. This higher supply results in skilled workforce migrating from the district. Given the proximity to Mumbai many go there. But, some also traverse to Bangalore. These people are employed across various sectors like manufacturing, engineering and IT.

Figure 129: Skill wise incremental demand and supply in Dharwad district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on our field surveys in Dharwad district, we have found out that sectors where skilling interventions are required are mainly agriculture and allied, hospitality, education and skills and auto and autocomponent. In addition, the district also has youth migrating to find jobs in manufacturing and engineering industries. So, skilling the manpower for functional skills such as fitting, electrical, welding, metallurgy, masonry etc is required. These trades also need to be offered to the youth.

Based on the diagnostics above and our discussions with the key stakeholders in the district, we have identified sectors which will be the employment growth engines in the district in the next five years and will have skill training requirements. While agriculture will continue to be the biggest employer, additional employment will be generated from non-agricultural sectors as well.

Thus, in the section below, we have identified only those activities, which can become employment growth engines for the district in the next five years and where there is an opportunity for skill development / up-gradation. The identified sectors are given in table below.

Table 231: Sectors where intervention are required in Dharwad district – comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Dharwad	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 232: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Auto and auto component	√	√	√
Tourism, Travel, Hospitality & Trade	√		√
Education and Skill Development Services	√	√	√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Auto and auto components

The auto and auto component manufacturing industry in Dharwad district is given fillip by the presence of Tata Motors and Tata Marcopolo. The former has established its production on 900 acres of land in Dharwad. This industry is poised for more growth with the Tata group looking for more growth. Over Rs. 1,000 crore has been invested by the group in the district and it is already offering employment to over 8,000 people. In addition to the core business, the support activities are also expected to generate employment in the district. The total number of prospective employment that can be generated looks to be of the order of 15,000 people. The best way to exploit this will be for most of the locals to find a place in the manufacturing giant.

Within the auto and auto component industry, the value chain followed in Dharwad district is given in Figure 7 below. The parts of the value chain that exist within the district are circled in red.

Also, the district is home to several valve making units that serve as components to the chemical process and oil refinery industry. The reason why valve making is flourishing in Dharwad is again due to its central location – between the Mumbai and Bangalore corridor.

There are several established valve making units in Dharwad like the Weir Valves, Microfin Valves, etc. This is estimated to be Rs. 500 crore segment in Dharwad and is poised to grow to Rs. 750 crore in the near future.

Figure 130: Value chain in auto and auto component industry

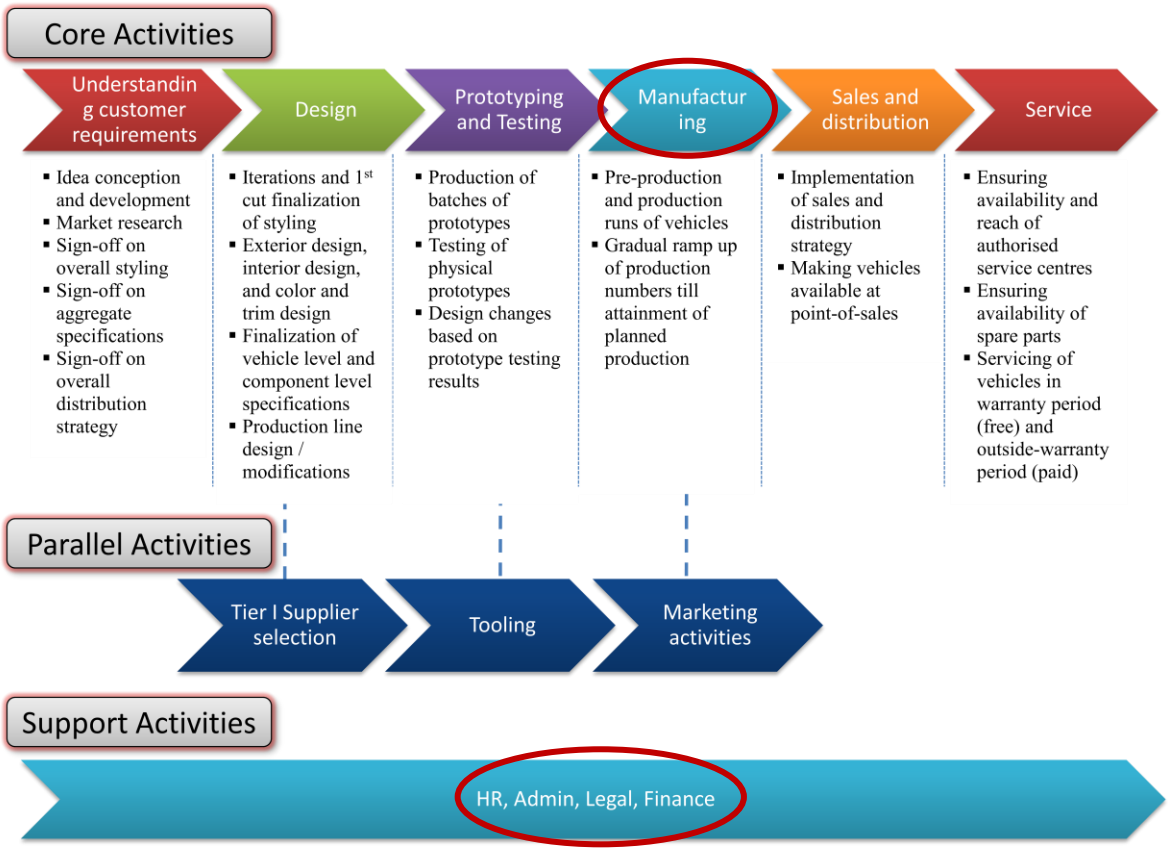


Table 233: Skill gaps in auto and auto component in Dharwad district

Role, educational qualification	Expected competency	Skill gaps
Managers (management degree holders/experienced industry leaders)	▪ Ability to manage the workforce ▪ Ability to give strategic ideas ▪ Knowledge of market trends ▪ Knowledge of training required ▪ Record maintenance ability ▪ Highly qualified in personnel and soft skills	▪ No skill gap observed here. Most of the managers are able to handle their responsibilities effectively

Role, educational qualification	Expected competency	Skill gaps
Engineers (electrical, mechanical, auto)	▪ Knowledge of machinery and tools ▪ Ability to trouble shoot ▪ Shop floor management ▪ Compliance to quality measures like six sigma ▪ Soft skills	▪ Not able to adapt to the latest technology quickly ▪ Lack the soft skills – in terms of report writing, documentation of faults, etc ▪ The district's education system is not able to produce enough engineers
Supervisors (Diploma in electrical, auto, mechanical, ITI qualified)	▪ Ability to supervise activities conducted in the department for which responsibility is entrusted. ▪ Ability to train the new comers ▪ Overseeing the safety of all workers ▪ Complete understanding of all safety regulations and ability to handle safety issues ▪ Give the specifications to the operators and welders/fitters	▪ Not able to adapt to the latest technology used in shop floor ▪ Not enough mechanical and electrical diploma holders available
Fitters (experience based), Welders, machinists, lathe operators	▪ Basic ability to handle the machines ▪ Understand the basic safety aspects ▪ Do the given module of the assembly line to them to the specifications	▪ Not able to adapt to the latest technology used in shop floor ▪ Less number of fitters, which forces the managers to recruit from outside ▪ Lack the discipline to come and put in the

Role, educational qualification	Expected competency	Skill gaps
		required hours of work
Helpers / machinery attendants (High school pass)	▪ Ability to help operators with their day to day functions ▪ Help in cleaning the machines ▪ Help in loading and un-loading	▪ Lack the discipline to come and put in the required hours of work

Source: IMaCS Analysis

5.2. Education and Skill Development Services

The district of Dharwad has been known as center for education. The Karnatak University the second oldest university in the state has its main campus here. Also, the renowned University of Agricultural Sciences is located in Dharwad. In addition, the district has a whopping 106 general colleges which offer degrees across various disciplines. Students from districts in northern Karnataka and other places flock to Dharwad to pursue their education.

The challenge that now confronts this sector is to make it modern and robust; a system that reflects the industry demands. Also, the technical education in the district has to be brought up to the mark. The common issue that is highlighted by the industry representatives is that the students trained in the institutes are not able to cope with the shop-floor expectations. If Dharwad is going to develop into an industry hub, this aspect needs to be reconciled.

Table 234: Skill gaps in education and skill development industries in Dharwad district

Role, educational qualification	Expected competency	Skill gaps
Principal/Vice Chancellor (doctorate/post graduate degree holder with over 15 years experience)	▪ Management of overall functioning of the educational institute ▪ Ability to give strategic ideas ▪ Knowledge of market demands ▪ Knowledge of training required ▪ Ability to hire the right professors ▪ Ability to enforce the academic rigour and discipline ▪ Ability to build the 'brand' of the institute	▪ No skill gap observed here.
Head of Department (doctorate/post graduate degree holder with over 10 years experience)	▪ Ability to manage department ▪ Ability to allocate the right staff to the right course ▪ Knowledge of current trends ▪ Ability to incorporate them in the curriculum ▪ Handling some key classes	▪ No skill gap observed here.
Teachers/lecturers/training officers(Post graduate/graduate degree in the respective field)	▪ Ability to conduct classes ▪ Ability to appraise HoD of the progress reports ▪ Knowledge of latest techniques ▪ Understanding of various pedagogies ▪ Good communication skills ▪ Ability to give industry exposure to students	▪ Not able to adapt to the latest technology used in shop floor ▪ Need to improve the communication skills ▪ Variety of pedagogy need to be explored

Source: IMaCS Analysis

5.3. Travel, tourism and hospitality

The reason why the travel and hospitality industry is taking center stage in this district is not only because of the tourist spots but also due to the central location of the twin cities. Also, the district enjoys a pleasant climate.

Sunset in the Unakal Lake in Hubli

Table 235: Key spots in Dharwad district

Tourist Spot	Brief Description
Unakal Lake	3 kilometres from Hubli, this lake is known for boat rides and picturesque sunsets. This also has the Chandramouleshwara temple.
Bhavanishankar temple	A temple that depicts the Dashavatar of Lord Vishnu
Annigeri	Temples left from the Cahlukya period.
Kundgol	About 15 kilometres from Hubli, this is known for temple and being a center of Hindustani music

Table 236: Skill gaps in hospitality industry in Dharwad district

Role, educational qualification	Expected competency	Skill gaps
Hotels and other hospitality establishments (hospitality management degree, basic degree)	▪ Managing all the facilities and the functioning of the work-force. ▪ Supervising of the work conducted by housekeeping ▪ Soft skills and interpersonal skills ▪ Ability to connect with the guest and solve their problems ▪ Knowledge of the local attractions ▪ Ability to brand their offerings ▪ Overall etiquette	▪ Less managerial staff ▪ English speaking difficulties ▪ Customer relationship management difficulties ▪ Lack of professionally trained adventure sport teachers
Tour operators / guides (illiterate to 10th pass, trained by Tourism department)	▪ Route planning and optimisation ▪ Ability to liaison with airline, hotels and local community ▪ Ability to manage tourist expectations ▪ Customer Relationship Management ▪ Soft skills ▪ Understanding of local and English speaking skills	▪ Lack of soft skills ▪ Lack of many professionally trained guides

Source: IMaCS Analysis

6. Recommendations

Recommendations for Dharwad focus on the sectors of auto and auto components, education and skill development and hospitality. Some of these sectors will have recommendations for the private sector which will directly translate to skills being developed and the others will need government intervention to facilitate improvements. The educated youth move to Mumbai to primarily work in engineering units and IT/ITeS sectors. Interventions for skilling in these can also be explored.

While the detailed recommendations follow, summary is given in the table below.

Table 237: Key recommendations for Dharwad – summary

Sector	For private players	For Government players	For industry
Auto and auto component	▪ Skilling based on functional roles like shop floor worker, manager and supervisor	▪ Give auto increased thrust as policy ▪ Motivate by the youth to take up jobs in auto sector locally with the help of melas and job fairs	▪ Training programmes can be conducted by the industry player
Travel, Tourism and Hospitality	▪ Skilling based on the functional roles such as front office personnel, manager and housekeeping ▪ To increase the overall customer relationship management of the personnel	▪ Infrastructure development especially roads and increasing capacity of the airport	▪ The hospitality sector is booming due to Dharwad emerging as a business hub. There are enough establishments that cater to the clientele
Education and skill development	▪ Faculty development courses, which can also be	▪ Updation of curriculum to reflect market demands	▪ The industry is the training provider in this

Sector	For private players	For Government players	For industry
	explored partnering with Karnatak University	▪ Infrastructure updation in polytechnics and ITI	sector

6.1. Auto and auto components

Dharwad district has been traditionally known for small scale industries and cultural activities. But the scenario is changing with it becoming an auto hub. With the growth of the auto sector, the ancillaries also will grow, requiring skilled work force. Already Dharwad has the presence of the TATA group and several valve making units. These employ more than 8,000 people cumulatively.

The pertinent skill gaps that are observed here mainly fall into two broad segments:

1. Lack of sufficiently qualified people within the sector
2. And, those who are skilled and are the outturn from the educational institutes are not up to the mark. They lack employability.

This has resulted in the cost of labour rising in the district, making the entrepreneurs wary. The opportunities are ripe for the private sector/NSDC to skill the people.

Private player

The training can be offered for the auto and auto component based on functional roles that would be required in the factories.

Functional role	Training required
Shop floor worker	1. Basic assembly line activities 2. Skills like welding, fitting and fabrication 3. Painting skills (which is not offered in ITI in Dharwad) 4. Work culture modules
Supervisor	1. Quality control tools 2. Basic principles of lean manufacturing

Functional role	Training required
	3. Soft skills 4. Leadership modules
Higher management	1. Management modules crash course 2. Implementation of quality and productivity enhancing tools like six sigma 3. Courses to form and lead quality circles 4. Leadership modules

Industry

Majority of the training programmes can be conducted in partnership with the auto company itself. This will ensure that the market requirements will be reflected in the course. The TATA Group already is conducting courses which are required in its plant. Corporate involvement in training workers for the automotive industry will help create a labour pool that is customized for meeting specific company need.

6.2. Education and skill development services

Dharwad has always been known for its cultural roots. The educational institutes in the district are renowned and attract students from all over the state. The challenge for this sector now is to rejuvenate its type of functioning across the three prongs. The reason as to why this change is required is to make the education market oriented. The feedback we have received across our primary survey is that this sector is an intrinsic strength of the district. But, this now needs thrust across the following three prongs:

1. Faculty
2. Infrastructure
3. Curriculum

Private player

The presence of quality faculty is a must for the education and skill development sector. There is need to skill the faculty at both the school level as well as the higher and technical education level. The

government of Karnataka has already recognized the importance of this and has decided to set up the Karnataka State Academy of Higher Education for imparting training in teaching, capacity building and skill development to fresh arts, commerce and science postgraduates of various universities. The academy will start a training programme on an experimental basis at Tumkur University from the forthcoming academic year.

As far as the Dharwad district is concerned, programme along similar lines can be structured with the Karnatak University in Dharwad. The main gap in Dharwad is at the technical education level. Thus, the programme should focus on fixing those gaps. Some of the key areas that the programme should focus on are:

- The teachers learning various pedagogy to impart the basic concepts
- Usage of various teaching aids
- Ease of usage in technology in teaching
- Course delivery methodologies
- Overall communication development – especially the English language
- Laboratory expertise

Government

The role of the government – the Department of Employment and Craftsmen Training - in education and skills space is in the provision of modern infrastructure and relevant curriculum.

- **Infrastructure**

The overall quality of the infrastructure that is used in the ITI and polytechnics needs to be improved. The government has to ramp up the infrastructure so that the training that is imparted to the students is effective. The following overhaul needs to be done across technical training institutes:

- Better laboratories
- Better IT facilities – especially internet
- Advanced computers
- The fitting and welding implements are getting older. So, need newer machines

- **Curriculum**

Throughout our primary survey, the common feedback from the industries was that the education offered does not reflect the changing landscape of the industrial sector. So, tweaks in the curriculum are required to make the education marker relevant. Some of the changes that can be targeted by the government are:

- Interface with industry associations to know the latest requirements
- On the job training tie ups
- Dedicated effort to make industry representatives handle portions of the courses, by way of introducing guest lectures

6.3. Hospitality

Dharwad has always been known for the hospitality sector. In the early times, the towns of Hubli and Dharwad served as the resting place for travellers who crossed over from the southern part of India to the north. It also has its unique cuisine with the Dharwad Peda sweet being its most famous dish.

Today, with it changing to an auto hub and also a center for education where students hail from all over the state. This calls for equipping the human resources by giving them the right skills and also developing the infrastructure. The former is an opportunity for the NSDC/private player and the latter for the government to intervene.

Private player

The training that needs to be given needs to build on the hospitality skills of the people. Currently, very few people are trained in hospitality management and mostly the training happens on the job. This gap needs to be bridged. The main areas where skilling is required are illustrated in table below.

Table 238: Training required in hospitality sector - Dharwad

Functional role	Training required
Front office personnel	1. Reservation and registration of guests quickly in computer 2. Check out procedures with ease 3. Language training – English and Hindi 4. Telephone etiquette 5. Grooming

Functional role	Training required
House keeping	1. Cleaning and polishing of surfaces 2. Public area cleaning 3. Maintenance of the hotel premises 4. Trouble shooting 5. Maintenance of hygiene and sanitation in rooms
Manager	1. Managing the human resource 2. Leadership modules 3. Client acquisition skills 4. Ability to build the brand for the establishment

Government

The government, helmed by the district administration, should improve the road conditions in the district. In addition, the airport in Hubli has two/three flights per day. Steps must be taken to improve the capacity of the airport.

Also, the youth feel being employed in this sector is not 'prestigious'. The tourism department must spread awareness through pamphlets and live case studies of people who have been successful to increase the motivation of the youth.

3.15. GADAG

1. Introduction

Gadag district lies in Northern Karnataka and is in close proximity to the Dharwad district, which is about 80 kilometres from the district headquarters - Gadag town. The district of Gadag has historical importance, having been a main center for architecture of the Chalukya kingdom. The district is dotted with temples which were built by the erstwhile Chalukyas. The more prominent of these temples are the Trikuteshwara temple, Lakkundi and the Kalyani Chalukya monuments.

In addition, this district is known for the birth of co-operative movement. Kanaginahal village is the place where the first co-operative movement in Asia took birth more than a century ago. The sprawling textile mills, Farmers' Co-operative Oil-seeds and Rural Technical and Engineering Colleges in Hulkoti were formed after this movement. It is due to this reason that textiles flourish in the district.

Gadag is bounded by six districts namely Dharwad on West, Belgaum on the North West, Bagalkot on the North, Koppal on the East, Bellary on the South East and Haveri on the South West. It has a total land area of 4,656 square kilometres.

The district has five talukas namely, Gadag - Betgeri, Ron, Shirhatti, Nargund and Mundargi. Gadag district has 329 villages. About 65 per cent of the total population of 1,065,235 are classified as rural population. As it is the case in most districts, agriculture is the main sector where a significant chunk of

the population is employed. Jowar, wheat and maize are the key crops grown in the district. About 70 per cent of labour force is in this sector. The remaining is in household industry (four per cent) and other workers[32] at 27 per cent.

Textiles and clothing is another prominent sector in the district. About 1,500 people are employed in small units in this sector. The twin towns of Gadag and Betgeri are dotted with many textile units.

Gadag district is not very well developed in terms of the economic activities and the industries. The biggest challenge which the district faces is water shortage. The absence of any major irrigation project in the district highlights the vulnerability of the agricultural economy and emphasizes the importance of dry land farming in its overall economy. Also, the proximity to Dharwad and Hubli has rendered Gadag unable to attract industries, as they prefer setting up shop in Hubli than coming down to Gadag. The advantage that Hubli and Dharwad hold over Gadag is the ease of access due to good connectivity, which Gadag lacks.

Off late, Gadag is attracting the wind power companies but this phenomenon is seasonal. Hence, the local youth prefer migrating to Hubli-Dharwad or to Mumbai for opportunities.

Table 239: Comparison of Gadag district with Karnataka – key indicators

Indicator	Year	Gadag	Karnataka
Area, in sq.km.	2001	4,656	191,791
Percentage share in State geographical area, %	2001	2.42%	100%
No. of sub-districts	2011	5	175
No. of inhabited villages	2001	329	27,481
No. of households	2001	181,500	10,401,918
Forest area as a % of total geographical area	2001	7%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analyzed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

[32] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

2.1. Demography

As per Census 2011, Gadag district has a population of 10.6 lakh persons – 1.7 per cent of the State population. Majority of the population is concentrated in the Gadag taluka – about 34 per cent. This is due to this taluka being the main center in the district for some small units and educational institutes. This is followed by the Ron taluka (25 per cent) and the Shirhatti taluka (19 per cent). The other two talukas house the remaining population, which is predominantly rural. While 62 per cent of the population in the district is in working-age group (15 to 64 years), about 47 per cent is actually working i.e. work participation rate.

The district's literacy rate is 75.18 per cent, which is slightly lower than the State average of 75.6 per cent, but higher than All-India average of 74 per cent. Male literacy was at 84.89 and was significantly higher than the female literacy was of 65.29. Of the 30 districts in Karnataka, Gadag ranks 12th on Gender Development Index (GDI), with a value of 0.625.

About 65 per cent of the total population lives in rural areas. In fact, as mentioned earlier, agriculture is also the main occupation of the people of the district, employing 70 per cent of the labour force as either cultivators or agricultural labourers.

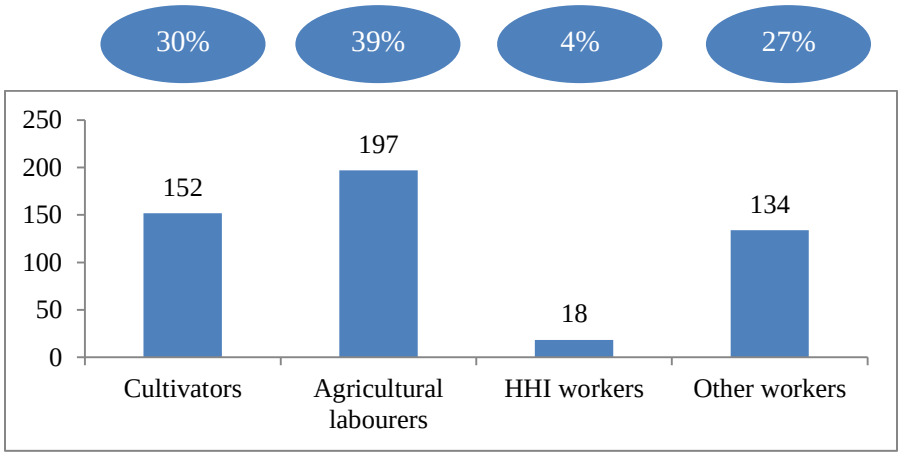
Table 240: Key demographic indicators

Indicator	Year	Gadag	Karnataka
Population, No.	2011	1,065,235	61,130,704
Decadal growth rate of population, %	2001-11	9.61%	15.7%
District's share in State's population, %	2011	1.7%	100%
Urban population as a percentage of total population, %	2001	35.2%	34%
SC population, %	2001	14.13%	16.0%
ST population, %	2001	5.6%	7.0%
Sex ratio, No. of females per 1000 males	2011	978	968
Population density, per sq. km.	2011	229	319
Literacy rate, %	2011	75.18%	75.6%
Main workers, No.	2001	388,763	19,364,759
Marginal workers, No.	2001	69,054	4,170,032
Working age population* as a percentage of total population, %	2001	62%	63%
Work participation rate^, %	2001	47%	45%
HDI	2001	0.634	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*
Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 4.57 lakh persons. Of this, 30 per cent are cultivators, 39 per cent are agricultural labourers, four per cent are workers in household industry and 27 per cent are other workers.

Figure 131: Gadag district's worker profile, as of 2011, in thousands

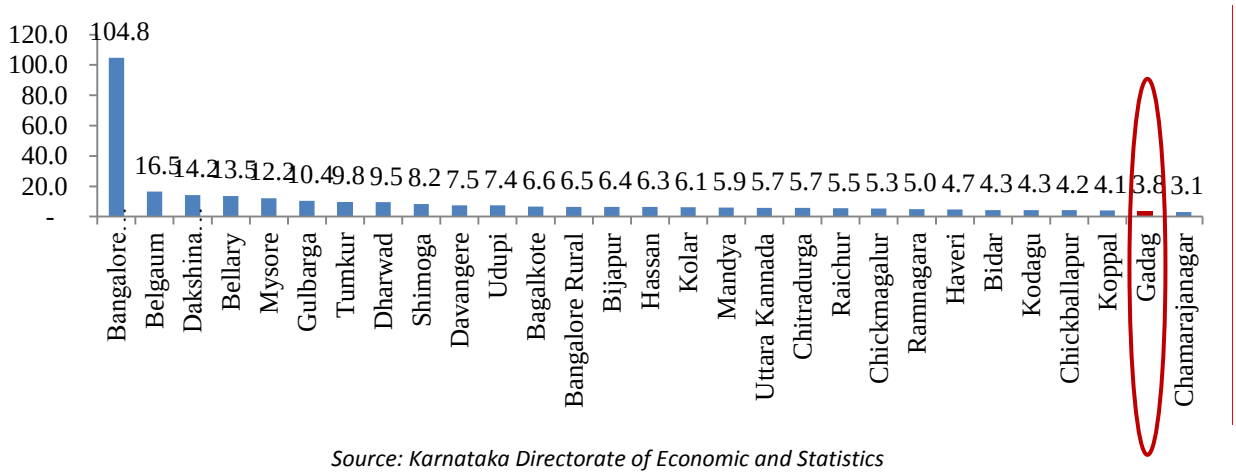


HHI: Household Industry
Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Gadag district had the second lowest Gross District Domestic Product (GDDP) in Karnataka at Rs 3,761.05 crore. This GDDP is the 28th in the state contributing to just one per cent to the GSDP. In terms of per capita GDDP though, it ranked 16th amongst 30 districts at Rs 35,312. This was lower than the State average of Rs 53,101.

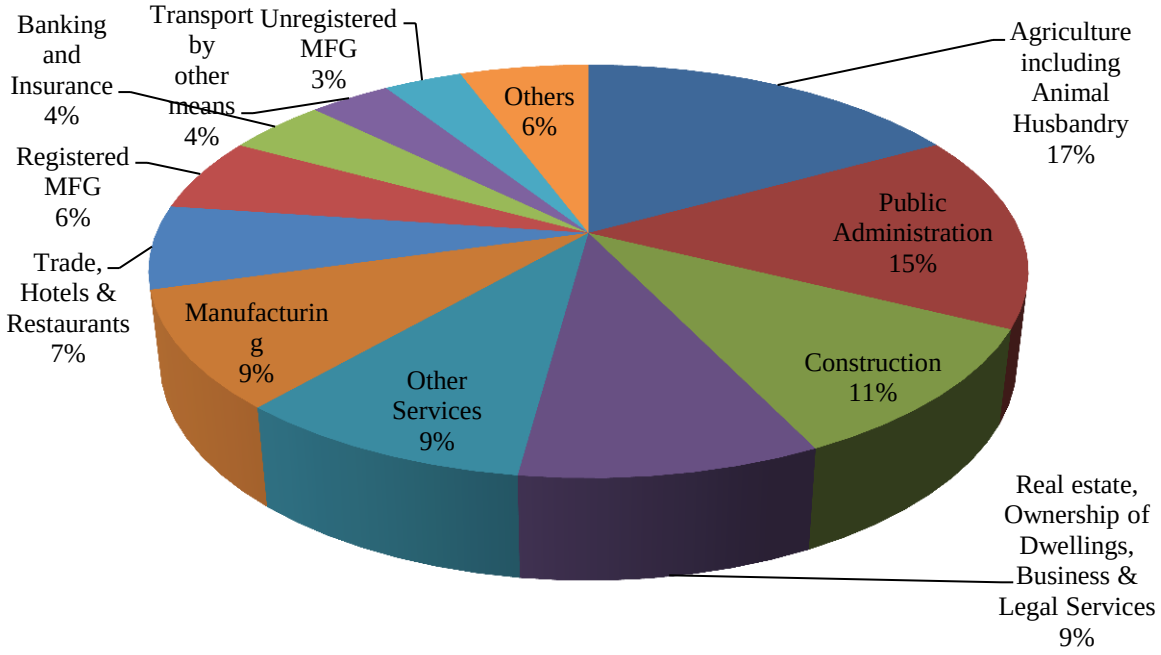
Figure 132: Gross District Domestic Product, in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 56 per cent in 2008-09. This is followed by the secondary sector at 23 per cent. Though majority of the population is in the primary sector, it contributes 21 per cent to the GDDP.

Figure 133: Sector wise distribution of Gadag's GDDP, as of 2008-09, 100% = Rs 3,761.05 crore



Source: Gadag District At a Glance 2009-10

Agriculture: Of the total area of 4,656 sq. km. in the district, over 86 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of jowar and maize under food crops. In spite of 86 per cent of the land area being put to use in agriculture, the primary sector contributes only 21 per cent. This is due to low productivity which in turn is due to irrigation difficulties. For details of crops grown in Gadag district, refer to annexures.

Industry: As of 31st December 2011, Gadag has four large scale industrial units. Three of them are textile based. Three are in the Gadag taluka and one in the Shirahatti taluka. These have an employment of 1,472. Apart from these, there is no big industry in the district.

Gadag also has 242 registered small scale industries. These employ 1,241 people. Majority of these establishments are concentrated in the Gadag taluka and Ron taluka. Most of these units are job and small works units. There are several small units that are into manufacture of intoxicants and beverages.

The district has one industrial area in Narsapura – 163 acres. In addition, it has six industrial estates. Gadag district is attracting investments in wind energy and steel. During GIM 2010, three Memorandums of Understanding (MoUs) were signed, out of which one is in the implementation stage. After the conclusion of the GIM 2012, more MoUs have been signed in the wind and thermal energy sectors. For detailed status of these projects, refer to annexures.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 52 per cent of GDDP. Of all the services, the public administration dominates with a share of 18 per cent. In fact, this is the second largest contributor to the GDDP. This echoes the preference of the educated people to find themselves government jobs as there is dearth of other opportunities in Gadag.

2.3. State of education

As of March 2010, Gadag district had 1,037 schools with 199,610 students. There are 83 pre university institutions that have 18,183 students.

There are 47 general colleges with 7,412 students. There are also four medical colleges, nine colleges offering post-graduate courses, five polytechnics (for technical education) and three engineering colleges. For details of courses offered by polytechnics, refer to annexures.

Table 241: School education infrastructure in Gadag district, as of March 2010

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Govt.	190	71,259	428	35,636	83	19,393
Aided	4	6,954	32	9,446	82	18,942
Unaided	56	21,854	87	8,395	75	7,731
Total	250	100,067	547	53,477	240	46,066

Source: Karnataka Education Department

Table 242: Higher education infrastructure in Gadag district, as of March 2010

Colleges	No.	Students
PU Colleges	83	18,183
General	47	7,412
Medical	4	505
Polytechnic	5	2,272
Engineering	3	2,895

Source: Gadag District At a Glance 2009-10

For vocational training, Gadag district had a total of40 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, four were Government ITIs, seven were private aided ITIs and remaining 29 were private unaided ITIs.

Table 243: Key ITI indicators in Gadag district, as of March 2012

Indicator	Value
Total Number of ITI	40
Number of Government ITI	4
Number of Private aided ITI	7
Number of Private unaided ITI	29
Total Seating capacity	3,500
Student pass rate	80%
Student drop-out rate	5-10%

Source: IMaCS Primary Survey

Based on our discussions, we have found that the majority of the students, who pass out, about 70 per cent, find jobs in the market. There is no specific mechanism that has placement follow-up. Students finish their course and then go find their own jobs. For details on courses offered by ITIs in Gadag, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and private Institutions. The Government Departments offer courses in trades such as machinist, tool room training, apparel manufacturing, vocational training, poultry farming, motor driving, computers etc.

The private training institutes are offering courses in teacher's training, nursing, computers, ayurveda and pharmacy. For details of courses offered by private training institutes in Gadag district, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Gadag district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- The education curriculum in the district produces very less technically sound students
- ITI is a place where students want to study but once they get in, the infrastructure and quality disappoint
- Prefer to migrate to Hubli and Mumbai rather than stay back as there are very less opportunities
- Training institutes in Gadag lack sophisticated machinery and infrastructure for training. Practical exposure is lacking.
- Quality of courses and teachers is average. Quality of infrastructure is below average.
- Prefer to remain unemployed rather than joining jobs with lower salaries.
- Preference for white collar jobs as compared to blue collar and manual jobs.
- The curriculum followed has limited relevance to what the market demands
- English speaking skills are very less and want special extra hours to improve their communication abilities

- Want more computer courses as without basic IT knowledge, it is difficult to work in big organizations

3. Developmental concerns

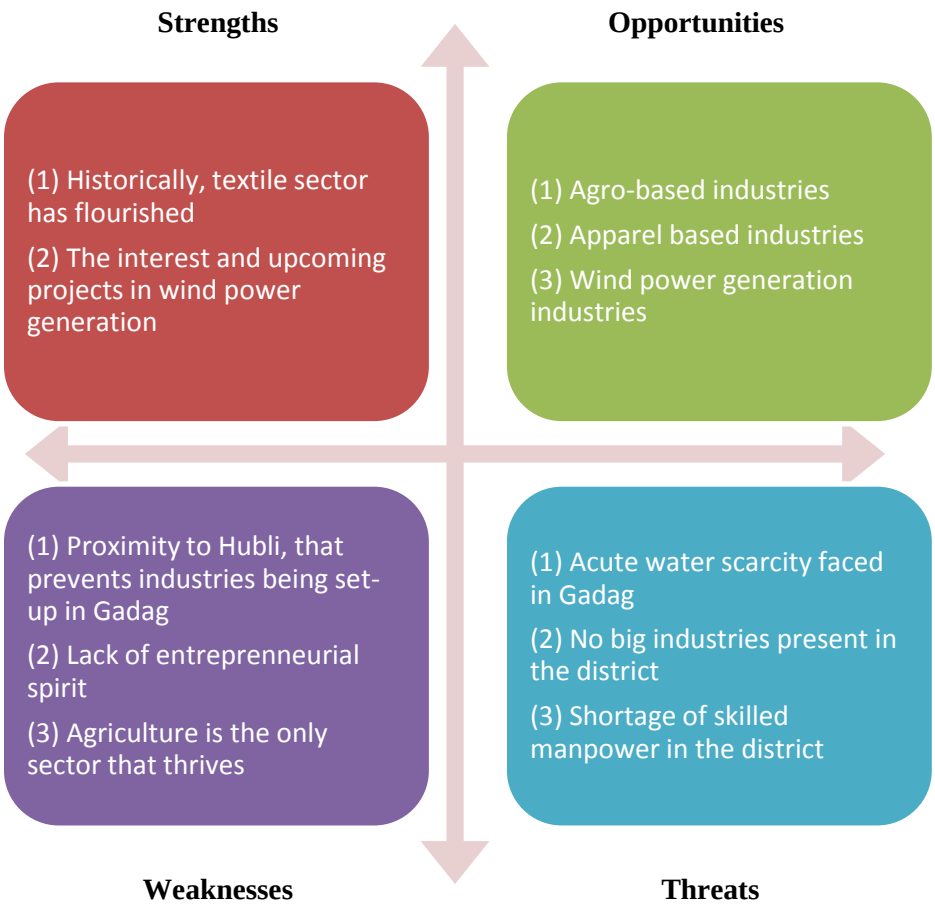
Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Lack of entrepreneurial spirit:** Gadag district has the youth who are over dependent on government schemes that aid their livelihood. Also, they prefer commuting daily to Hubli for better jobs, which is just an hour away. This has resulted in less entrepreneurial activity in the district.
- **Acute water shortage:** The fact that there is acute shortage even for drinking water has made it very difficult for big industries and agro based processing to flourish in the district. In fact, the water table in Gadag has depleted to the extent that people are dependent on water that is given to the homes in time slots.
- **Skewed development:** The district is developed in a skewed manner. This development is skewed not only on industrial units but also for the overall infrastructure and economic prosperity. The talukas of Gadag and Ron are more developed than the remaining three talukas. This has led to large migration of people to these talukas.

SWOT analysis

Based on the diagnostics of the Gadag district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 134: SWOT Analysis of Gadag district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 96,287 persons is likely to be generated in Gadag district. Agriculture and allied activities are expected to remain the biggest employers. As the economy grows, employment demand in supporting sectors such

as construction, transportation, healthcare and education is also expected to increase at a faster rate. There is also maximum demand for semi-skilled people, especially in welding, fitting and masonry.

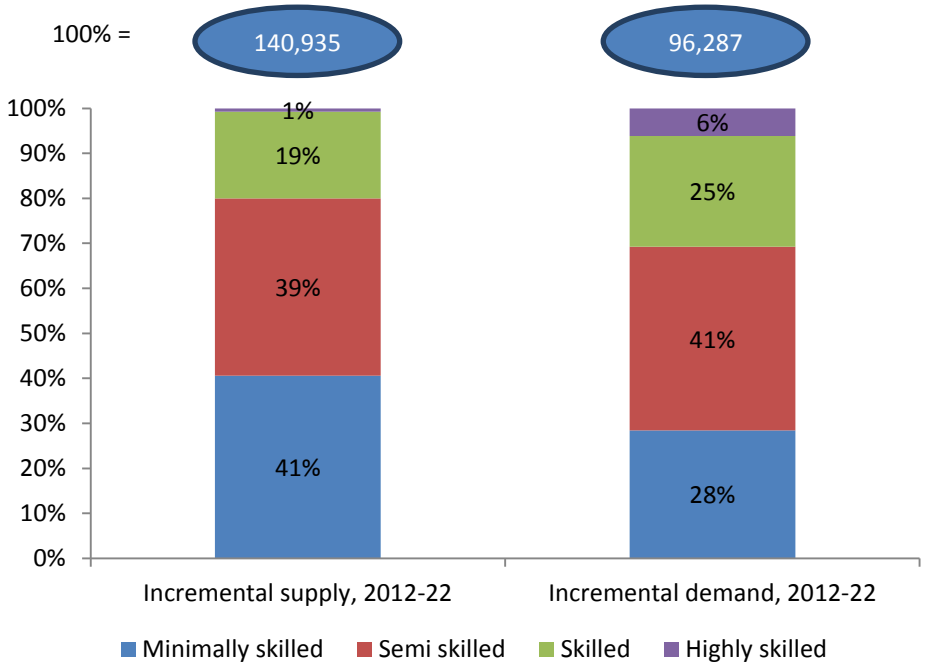
Table 244: Incremental demand in Gadag – 2012 to 2022

SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	37,983	31,634	4,728	860	760
BFSI	4,029	-	2,417	1,209	403
Building, Construction industry and Real Estate	20,308	6,092	10,154	3,046	1,015
Construction Materials and Building Hardware	1,261	126	820	252	63
Education and Skill Development	7,374	-	-	6,637	737
Furniture and Furnishings	150	60	60	22	7
Healthcare Services	9,904	-	990	6,933	1,981
Textile and Clothing	2,206	441	1,323	331	110
Transportation, Logistics, Warehousing and Packaging	8,457	1,691	4,905	1,691	169
Tourism, Travel, Hospitality & Trade	4,570	914	3,108	457	91
Total	**96,287**	**40,972**	**28,523**	**21,450**	**5,342**

Source: IMaCS Analysis. Note: Numbers for sectors will not add up to the total due to very small numbers accounted for by sectors such as food processing; furniture and furnishings and mining.

The incremental supply of work-force between 2012 and 2022 is estimated at 1.41 lakh. This is higher than the demand. This higher supply results in skilled workforce migrating from the district. Given the proximity to Hubli many go there. But, some also migrate to Mumbai and Bangalore. These people are employed across various sectors like manufacturing, engineering and IT. The demand in Gadag is dominated by the minimally skilled. This is due to the lack of sufficient employment generation in the district by other sectors.

Figure 135: Skill wise incremental demand and supply in Gadag district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on our field surveys in Gadag district, we have found out that sectors where skilling interventions are required are mainly agriculture and allied and textile. In addition, the district also has youth migrating to find jobs in manufacturing and engineering industries. So, skilling the manpower for functional skills such as fitting, electrical, welding, metallurgy, masonry etc is required. These trades also need to be offered to the youth.

Thus, in the section below, we have identified only those activities, which can become employment growth engines for the district in the next five years and where there is an opportunity for skill development / up-gradation. The identified sectors are given in table below.

Table 245: Sectors where intervention are required in Gadag district – comparison with Karnataka

High Growth Sectors identified by NSDC	Gadag	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		

High Growth Sectors identified by NSDC	Gadag	Karnataka
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 246: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Textiles and clothing industry	√	√	√
Agriculture		√	√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Textiles and clothing industry

As of March 2010, Gadag district had four textiles based factories under large and medium scale industrial units, employing about 1,500 workers. Apart from these big units, there are small units that are engaged in this industry. The main reason why these units are thriving in the district is because of

availability of labour. Also, the people are well versed in the basic skills as this is a traditional sector. The basic weaving is done here and the fabrics are sent to main centers in other cities for finishing and packaging.

Looms in Gadag district

Figure 24 given below explains the value chain of the textile and clothing industry. Of the entire value chain, only weaving segment exists in Gadag district. Within the textiles industry, the value chain followed in Gadag district is given in Figure 7 below.

Figure 136: Value chain in textiles and clothing industry

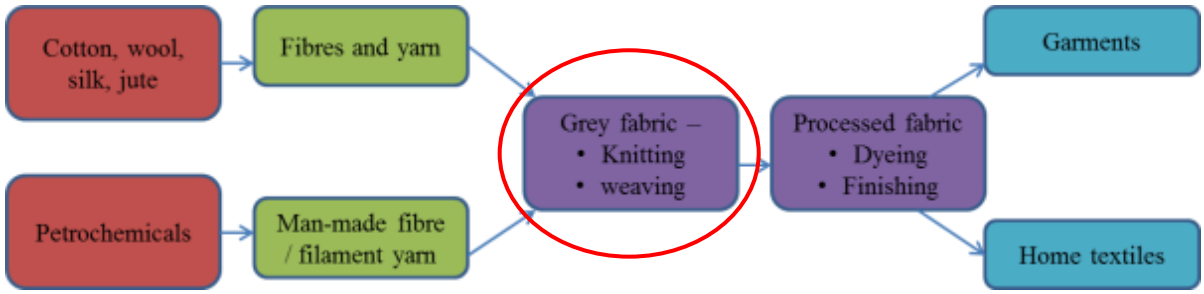


Figure 137: Value chain in textiles industry – present in Gadag district

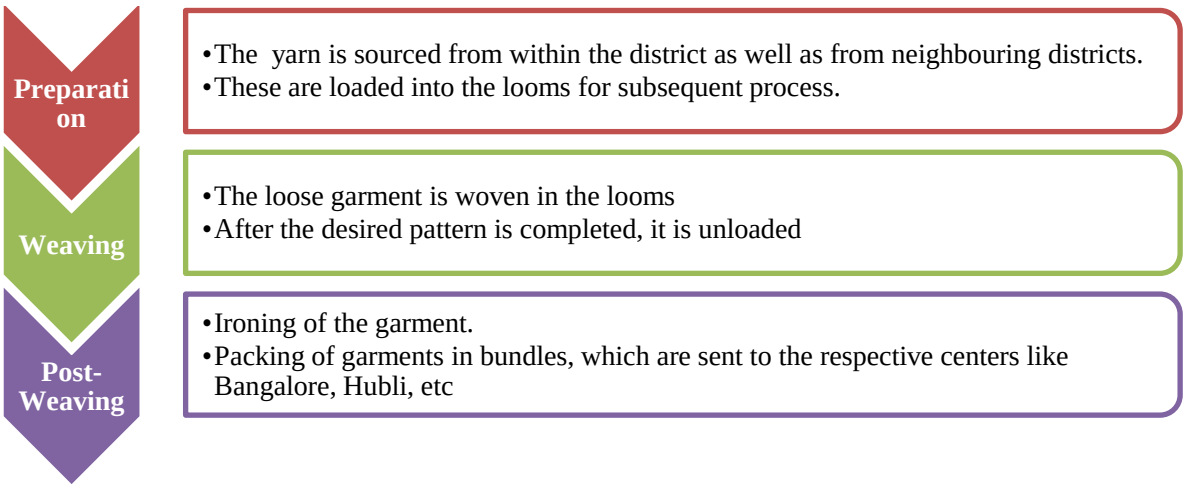


Table 247: Skill gaps in textiles and apparel in Gadag district

Role, educational qualification	Expected competency	Skill gaps
Manager / supervisor / floor in-charge (Graduate)	▪ Managing all the facilities and the functioning of the work-force. ▪ Supervising of the work conducted by operators and conducting quality checks. ▪ Knowledge of pattern making. ▪ Ability to undertake inspection, production planning and control. ▪ In-depth knowledge of production processes and inspection methods. ▪ Leadership skills ▪ Soft skills and interpersonal skills	▪ Most of the managerial / supervisory staff is hired from Hubli, as people with such skills are in scarcity in Gadag district.
Operators (illiterate to 10th pass, trained in tailoring from	▪ Good machine control – knowledge of threading, weaving patterns on different shapes and following the specifications ▪ Knowledge of machine maintenance procedures	▪ On the job training provided for one week, on joining of job to explain requirements and basic skill-up gradation. ▪ Even those who are trained

Role, educational qualification	Expected competency	Skill gaps
NGOs or training provided by Department of Textiles)	▪ Knowledge of pattern making, grading and draping ▪ Ability to work in teams / inter-personal skills. ▪ Soft skills	before the job have to be re-trained, especially on running of machines, as the training institutes do not have good machine infrastructure.
Quality control executive (Graduate and with some experience in garment industry)	▪ Ability to inspect if the garments have been weaved as per given specifications and instructions ▪ Ability to check for quality adherence ▪ Ability to understand and prevent defects like size variations, loose threads, stains etc.	▪ On-the job training provided as such skills are lacking in persons trained at training institutes and usually come from experience only.
Helpers (illiterate to 10th pass)	▪ Ability to cut the cloth based on specifications. ▪ Ability to button the stitched garments. ▪ Ability to put tags on the stitched garments. ▪ Ability to iron the ready garments properly. ▪ Ability to iron the garments ▪ Ability to pack the garments in bundles	▪ Basic skills required for this profile, for which no / minimal training required. Mostly provided easily on the job.

Source: IMaCS Analysis

6. Recommendations

Recommendations for Gadag mainly focus on the textile and clothing industry, as other than agriculture, it is the only key source of employment for people in the district and has the potential to generate more employment, going forward. In addition, as discussed earlier in the report, people from Gadag move to places like Hubli and Mumbai for better job opportunities being equipped with basic technical skills like fitter, welder and electrician.. These emigrants are mainly employed in sectors such as auto component and engineering units. Thus, skill training can be targeted at these set of workers as well.

Finally, since a significant chunk of employment is concentrated in agriculture, thus, major up-skilling can be done for those workers, updating them of latest techniques of farming. This will help them improve their livelihood opportunities and will increase their income levels. While the detailed recommendations follow, summary is given in the table below.

Table 248: Key recommendations for Gadag – summary

Sector	For private players	For Government players	For industry
Agriculture and allied	▪ Modern agriculture methods related skilling	▪ Help on the front of irrigation because Gadag has water shortage ▪ Propagating the benefits of horticulture	▪ As of now, the scope for industry entering this sector is less
Textile and Clothing	▪ Skills across the weaving value chain starting with fibre identification to finishing techniques ▪ Various designs like appliqué and akoba taught to enhance	▪ Help in sector transformation where Gadag can go from being a mere production center to whose finished products hit the market	▪ Increase the compensation paid to the workers to prevent attrition

Sector	For private players	For Government players	For industry
	the visual appeal		
Others	▪ Training on trades like welding, fitting,etc	▪ Help in raising the motivational and entrepreneurship spirit of the youth	▪ Give inputs when the curriculum is designed so that the exact need is reflected

6.1. Textile Industry

The textile industry in Gadag has rich history, with the co-operative movement spurring it forward. Out of the four large and medium scale units in the district, three of them are for the textile sector, concentrated around the Gadag town. The weaving of the yarn is done across the district. Looms are used to weave the yarn into garments. Last decade has seen enhanced usage of the power looms, which has made the weaving process quicker. But, the industry is facing a few challenges. These include:

- Increasing prices of the raw material
- Lack of interest in the youth to take weaving as a profession
- Power cuts that hamper the production
- Water shortage, and
- Expectation of higher wages by the work force

Notwithstanding these, this is the only industry in Gadag that looks poised to grow in the next five years. The skill shortages that this district faces in the textile industry are the lack of know-how regarding the recent trends. These include making of more modern designs and patterns and market study to understand what the end user wants. This reflects the need for two interventions:

1. An institute that can provide the knowledge of the modern techniques
2. The government helping in the transformation of the industry – the textile industry needs to move from just making the garment to the orders received to actually interfacing directly with the market

This kind of transformation has been witnessed in Vietnam. Similar to the situation in Gadag, the sector in Vietnam was once a production center alone. Today, the final products from the mills have entered into the world market. In fact, it has also spearheaded the economic transformation of the nation as a whole. The traditional knowledge of weaving in Gadag combined with the available work force serves as the right platform to make the revamp. As the process of revamping happens, the youth will also be interested to take up job opportunities in textile. Interventions in the sector can be done by both the Government and the private players.

Private Player

The NSDC can aid in the establishment of Textile Training and Research Institute in the district headquarters of Gadag town. The aim of this institute should be to flush out the various techniques of textile production – across spinning, dyeing and weaving. The Textile Research Institute should ideally provide improved services to the textile and garment industry through research and development, transfer of technology and training. Set of courses that walk the candidates through the following aspects of the textile industry:

- Identification of fibre (plant, artificial, synthetic) both manually and using technology like microscopes
- Basic spinning techniques – both hand and wheel spinning
- Different types of weaving
- Decorative techniques like printing and appliqué
- Colour palate courses that will show the aesthetics of fusing colours and designs
- Finishing techniques

Capacity building can thus be achieved with a combination of various short term and long term courses.

Government

The transformation of Gadag from a just a production center to textile industry driver cannot happen without the government intervention. For the workers who are already working and do not have the financial capability to enroll in the private training units, the government needs to source quality trainers to deliver the programmes at a subsidized rates. Also, SHGs and clusters can be formed that will spread the awareness about the potential of the sector. The government training units could be set up

in the principal center of Gadag-Betgeri. Personnel from this nodal point could go and teach in other talukas. This will ensure a sustainable and inclusive development.

Another aspect where the government can intervene is in wages. Many local people employed in sector are leaving it due to the low wages being paid. The government can help evolve a system where the wages paid are comparable to the amount paid in city centers. All these can be done by the Textile Department in the district

Industry

One of the main challenges faced by Gadag textile sector, as discussed above, is the lack of motivation for the youth to take this up as an employment opportunity and the people who are working are also de-motivated due to the low wage rate that prevails. The industry/mill owners can come together and work on standardization of the wages to make the sector attractive. Also, dedicated efforts can be undertaken to include youth in the sector.

6.2. Agriculture

65 per cent of the population of Gadag district is classified as rural and about 70 per cent work in the agriculture sector. Though such a significant chunk of population is employed in this sector, the contribution of agriculture and its allied activities is only 17 per cent to the district domestic product. This hints at the productivity not being upto the mark. One of the main challenges faced by agriculture in Gadag is the irrigation. Though 380,100 hectares is the net sown area, about 27 per cent of this area is only irrigated. This is due to the enhanced dependency on the monsoons. The district faces major contingencies due to droughts. The government department – the district Agriculture Department – in partnership with the Krishi Vigyan Kendra in Hulkoti can ramp up the infrastructure and give the training related to latest skills.

Government

The interventions that are required from the government should empower the farmers to maximize their productivity and protect their crops from diseases and pests. The skills can be imparted to make the farmers aware of the modern techniques. Taluka level training programmes can be given in the form of two week capsule courses that will orient the farmers to modern methods. Also, the opportunities

that can be exploited with horticulture should be made aware to the farmers at the village level. Some of the key areas where skilling can be imparted are:

- Usage of appropriate pesticides in the right quantity and right time
- Knowledge on different pests
- Techniques on improving productivity
- Techniques to drain out the excess water that stays on the field after monsoons. This is observed in Gadag
- Knowledge on the usage of productivity enhancers like fertilizers

In addition to these, there should be infrastructure development – maybe in terms of trenches that can be dug – to drain the excess water and store it. Also, rain water harvesting techniques should be taught to all the farmers.

6.3. Others

In our primary survey, most students we spoke to gave the feedback that the infrastructure of the educational institutes needs to be revamped. Also, they felt they were not competent enough to face the competition from city students when they aspire for jobs in organizations of repute. The government can thus revamp the institutes by infusing new labs especially for computer and electrician trades and spending on increasing the number of faculty.

Another aspect where the government can play a significant role is in increasing the motivational levels of the youth in the district. This can be done by holding melas where the importance of entrepreneurship spirit is stressed and by organizing more number of job fairs where the youth are given an opportunity to compete for quality jobs in other sectors.

3.16. GULBARGA AND YADGIR

1. Introduction

Gulbarga and Yadgir districts[33] combined are on the north eastern side of the Karnataka. They have a total land area of 16,224 sq. km., which is 8.5 per cent of the total State area. They are bordered on north by the Bidar district, on the east by the districts of Mahbubnagar and Rangareddy of Andhra Pradesh, on the south by Raichur district and on the west by Bijapur district and north-west by the districts of Osmanabad and Solapur of Maharashtra.

Gulbarga and Yadgir combined have 10 sub-districts with 1,360 villages. After their separation, Gulbarga retained seven sub-districts and three went to Yadgir (Shorapur, Shahpur and Yadgir). For the two districts combined, majority of the population at 72.8 per cent lives in rural areas. Agriculture is the main occupation, employing 67 per cent of the labour force (as of Census 2001). The remaining is in household industry (three per cent) and other workers[34] at 30 per cent.

[33] Yadgir district was carved out from the Gulbarga district to form a separate district on 10th April 2010. However, we have given profiles of both the districts together, as Yadgir district is recently formed and separate data is not available for most of the indicators. Wherever, separate statistics are available, we have mentioned them in the report.

[34] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

Paddy and jowar are the key crops grown. Gram and tur are also grown in plenty. This has led to setting up of numerous dhal based industries around the two districts. Gulbarga town by itself has around 250 dhal mills. Gulbarga district is well endowed with considerable mineral wealth. Key mineral found is limestone and the district accounts for one-seventh of India's limestone reserves. Therefore, many cement industries have set up their manufacturing units in the district. Many cement industries are also in the process of setting up a venture in the district.

The two districts also experiences migration of manpower. Many people from the districts move to other places such as Bengaluru, Mumbai, etc. to find jobs and a better standard of living. The districts are classified as one of the country's 250 most backward districts in 2006 (when both these districts were combined) by the Ministry of Panchayat Raj.

Table 249: Comparison of Gulbarga and Yadgir districts with Karnataka – key indicators

Indicator	Year	Gulbarga and Yadgir	Karnataka
Area, in sq.km.	2001	16,224	191,791
Percentage share in State geographical area, %	2001	8.5%	100%
No. of sub-districts	2011	10	175
No. of inhabited villages	2001	1,360	27,481
No. of households	2001	536,056	10,401,918
Forest area as a % of total geographical area	2001	4.3%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the districts and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Gulbarga district has a population of 25.6 lakh persons - 4.2 per cent of the State population. Majority of the population (29 per cent) is concentrated in Gulbarga sub-district, followed by Chittapur sub-district at 16 per cent , Afzalpur sub-district at 15 per cent and remaining in others. Yadgir district has a population of 11.7 lakh persons – 1.9 per cent of the state population according to the 2011 census. Majority of the population of Yadgir district (81 per cent) lives in rural areas. While 56

per cent of the population in the both these districts is in working-age group (15 to 64 years), about 43 per cent is actually working i.e. work participation rate.

As of 2011, Gulbarga district's literacy rate is 65.65 per cent and Yadgir district's is 52.36. These literacy rates are lower than the State average of 75.6 per cent, and also lower to All-India average of 74 per cent. In both these districts, male literacy rate is significantly higher than female literacy rate. Of all the districts, Gulbarga (including Yadgir district) ranked second last on Gender Development Index (GDI), with a value of 0.543.

Most of the population lives in rural areas. In fact, as mentioned earlier, agriculture is also the main occupation of the people of the districts, employing 67 per cent of the labour force as either cultivators or agricultural labourers.

Table 250: Key demographic indicators

Indicator	Year	Gulbarga	Yadgir	Karnataka
Population, No.	2011	2,564,892	1,172,985	61,130,704
Decadal growth rate of population, %	2001-11	17.94%	22.67%	15.70%
District's share in State's population, %	2011	4.20%	1.92%	100%
Urban population as a percentage of total population, %	2011	32.64%	18.8%	34%
SC population, %	2001	18.30%	N/A	16.00%
ST population, %	2001	7.50%	N/A	7.00%
Sex ratio, No. of females per 1000 males	2011	962	984	968
Population density, per sq. km.	2011	233	224	319
Literacy rate, %	2011	65.65%	52.36%	75.60%
Main workers, No.	2001	1,010,430	N/A	19,364,759
Marginal workers, No.	2001	339,642	N/A	4,170,032
Working age population* as a percentage of total population, %	2001	56.06%	N/A	63%
Work participation rate^, %	2001	43.12%	N/A	45%
HDI	2001	0.564	N/A	0.65

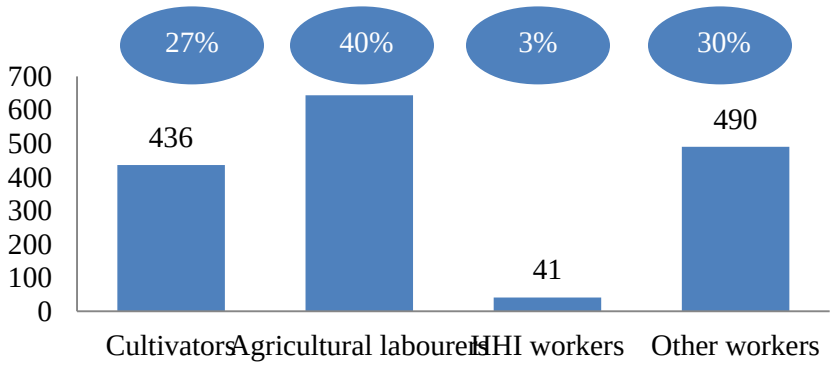
**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

Note: Yadgir district was formed out of Gulbarga district on 10th April, 2010 and census 2001 data are not available for the district. Also, census data 2001 for Gulbarga district includes the data of current Yadgir district.

The districts have a total workforce of about 16.12 lakh persons. Of this, 27 per cent are cultivators, 40 per cent are agricultural labourers, three per cent are workers in household industry and 30 per cent are other workers.

Figure 138: Gulbarga and Yadgir district's worker profile, as of 2011, in thousands

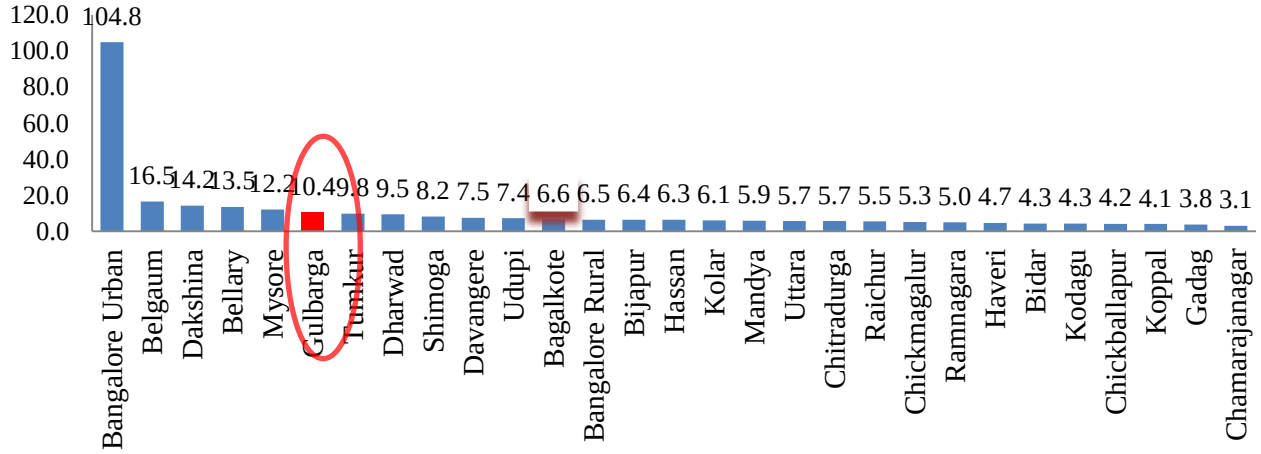


HHI: Household Industry
Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Gulbarga district (including Yadgir district) had the sixth largest Gross District Domestic Product (GDDP) in Karnataka at Rs 10,391.98 crore (3.4 per cent of the Gross State Domestic Product). In terms of per capita GDDP though, it ranked 25th amongst all districts at Rs 30,283. This was lower than the State average of Rs 53,101.

Figure 139: Gross District Domestic Product, in Rs thousand crores, as of 2008-09

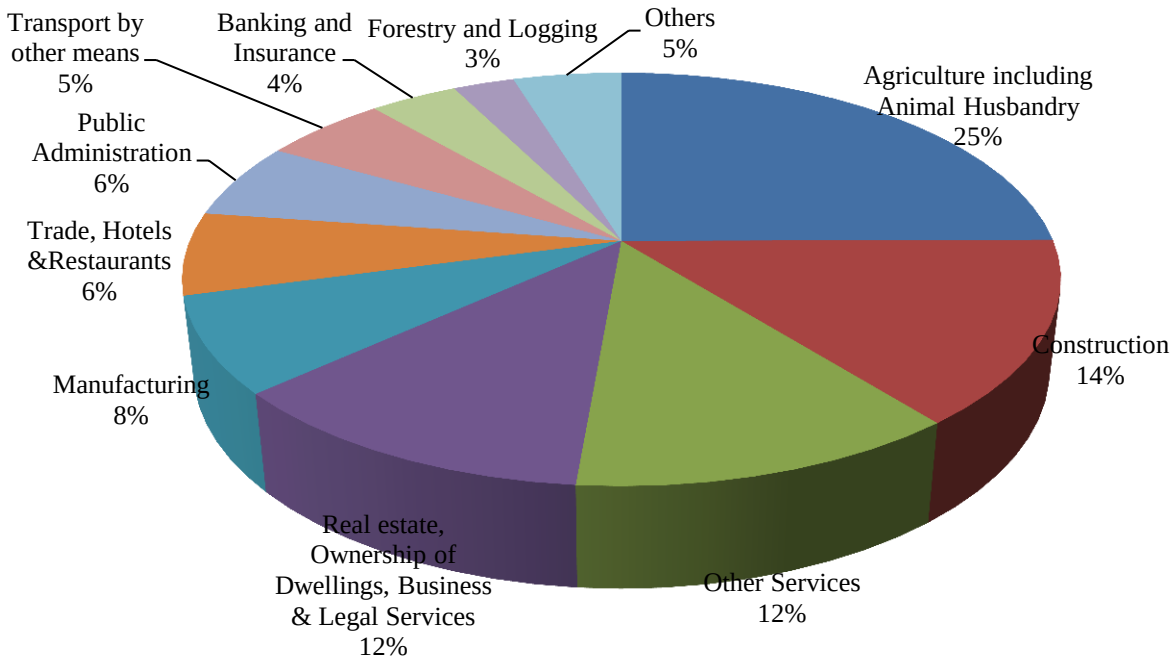


Source: Karnataka Directorate of Economic and Statistics

The districts economy is pre-dominantly service based, with service sector's share in GDDP at 48 per cent in 2008-09. This is followed by primary sector at 28 per cent and secondary sector at 24 per cent.

.

Figure 140: Sector wise distribution of Gulbarga's GDDP, as of 2008-09, 100% = Rs 10,391.98 crore



Source: Karnataka Directorate of Economic and Statistics

Agriculture: Of the total area of 16,224 sq. km. in the districts, over 74 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of jowar, paddy, gram and tur under food crops. For details of crops grown in Gulbarga district, refer to the annexures.

Industry: As of 31st December 2011, Gulbarga district had 10 large and medium scale industrial units, employing 5,364 persons. These included companies such as ACC Cement works, Vasavdatta Cements, Renuka sugars pvt ltd. (Refer to annexures for complete list). End products manufactured included cement, sugar, and boiler. In the same time period, Yadgir district had only one large and medium scale industrial unit in the sugar industry. For details, refer to annexures

Gulbarga has 453 Micro, Small & Medium Enterprises (MSMEs) which were granted permanent registration in the district during the year 2010-11. As of March 2011, majority of these were textile based industries at 65.1 per cent, followed by food & intoxicants based industries at 9.5 per cent, job

works and repairs based industries at seven per cent, and remaining in others. Refer to annexures for details.

Yadgir district has 87 MSMEs which were granted permanent registration in the district during the year 2010-11. As of March 2011, majority of these were textile based industries at 30 per cent, followed by wood based industries at 17.2 per cent, engineering based industries at 15 per cent, and remaining in others. Refer to annexures for details.

Gulbarga and Yadgir districts have three industrial areas, totalling 968 acres of land. For details, refer to annexures.

Gulbarga district is attracting significant investments from industrial players. During the Global Investors Meet (GIM) held in 2010 in Karnataka, nine Memorandums of Understanding (MoUs) amounting to Rs 10,668.99 crore were signed for the district. Once set up, these are estimated to employ 10,880 persons. Out of the nine projects, seven of them are cement industries. For detailed status of these projects, refer to annexures. In the recently conducted Global Investors Meet (GIM) 2012, 26 MOUs were signed for the Gulbarga district amounting to Rs. 25,396 crore. Targeted sectors include cement, power, textiles, hospitality, etc. For details of the project, refer to**Error! Reference source not found.**.

Yadgir district has started attracting investments from industrial players. During the GIM 2010, one Memorandums of Understanding (MoU) amounting to Rs 1,584 crore was signed for the district under power sector. For detailed status of the project, refer to annexures. In GIM 2012, eight MOUs were signed for the Yadgir district amounting to Rs. 16,444 crore. Targeted sectors include food processing, steel, bio-diesel, etc. For details of the project, refer to annexures. Also, many pharmaceutical companies are planning to move their base from Andhra Pradesh to Yadgir district following the ban on these by Andhra Pradesh government.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 48 per cent of GDDP in Gulbarga district. Of all the services, the key services in the district are of 'real estate, ownership of dwellings, business and legal

services' and 'other services' at 12 per cent each of GDDP, followed by 'trade, hotels & restaurants' and 'public administration' at 6 per cent each and trade, hotels and 'transport by other means' at 5 per cent.

2.3. State of education

As of September 2011, Gulbarga district had 3,290 schools, with 532,917 students enrolled. The drop-out rate was 7.5 per cent both for lower and higher primary schools. This is higher than the State average of 4.6 per cent for lower primary and lower than the state average of 8.1 per cent for higher primary schools.

In the same time period, Yadgir district had 2,403 schools, with 212,089 students enrolled. The drop-out rate was 11.25 per cent both for lower and higher primary schools. This is higher than the State average of 4.6 per cent for lower primary and 8.1 per cent for higher primary schools. Yadgir district features in the top three districts in school drop-out rate for both lower and higher primary. The prime reason for the high drop rates is that the students are involved in farming related activities during season and in turn they leave out of the school education.

In Gulbarga and Yadgir districts, there are 199 pre-university (PU) colleges with 20,115 students. There are also 36 general colleges, two medical colleges, 18 polytechnics (for technical education), four engineering colleges and two dental colleges. Majority of these institutions are located in Gulbarga district. The educational infrastructure in Yadgir is average and needs improvement. For details of courses offered by polytechnics, refer to annexures.

Table 251: School education infrastructure in Gulbarga district, as of September 2011

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Government	800	187,397	1,007	61,133	261	57,355
Aided	16	37,711	137	14,609	96	18,400
Unaided	205	87,499	395	25,459	287	33,707
Others	28	3,854	34	2,857	24	2,936
Total	**1,049**	**316,461**	**1,573**	**104,058**	**668**	**112,398**

Source: District Information System for Education (DISE) 2011-12

Table 252: School education infrastructure in Yadgir district, as of September 2011

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Government	469	112,445	466	29,652	119	25,249
Aided	3	5,575	22	2,305	10	2,522
Unaided	188	21,743	291	4,992	196	4,874
Others	78	372	426	995	135	1,365
Total	**738**	**140,135**	**1,205**	**37,944**	**460**	**34,010**

Source: District Information System for Education (DISE) 2011-12

Table 253: Higher education infrastructure in Gulbarga and Yadgir district, as of March 2010

Colleges	No.	Students
PU Colleges	199	20,115
General	36	8,802
Medical	2	250
Polytechnic	18	4,320
Engineering	4	1,351
Dental	2	200

Source: Gulbarga District at a Glance 2009-10

For vocational training, Gulbarga district had a total of 85 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, five were Government ITIs, nine were private aided ITIs and remaining 71 were private unaided ITIs. All the 85 ITIs together have a seating capacity of 8,928. As of March 2012, Yadgir district had a total of 26 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs). Of these, one was Government ITIs, two were private aided ITIs and remaining 23 were private unaided ITIs. All the 26 ITIs together have a seating capacity of 2,200.

Table 254: Key ITI indicators in Gulbarga and Yadgir district, as of March 2012

Indicator	Value	
	Gulbarga	Yadgir
Total Number of ITIs	85	26
Number of Government ITIs	5	1
Number of Private aided ITIs	9	2
Number of Private unaided ITIs	71	23
Total Seating capacity	8,928	2,200
Student pass rate	80%	70%
Student drop-out rate	15 - 20%	25%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Gulbarga and Yadgir districts, we have found that on an average, of all the students that pass out from an ITI in each year, around 50 per cent find jobs in the market. For details on courses offered by ITIs in Gulbarga and Yadgir districts, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions.

The government department offer courses in trades such as agriculture, textiles, education, etc. In agriculture sector, 'District Agriculture Training Centre' conducts courses relating to the district agricultural status such as soil, crops, water, etc. Also, commodity based training program is given on crops such as tur and Bengal gram by the state agricultural marketing board. The district institute of education training provides courses on personality development, adult education and training of teachers. There is a horticulture training centre in the district which runs courses in horticulture products. District training institute offers courses on administrative and legal aspects. The state run KEONICS offers computer related courses in the district.

The private training centres are offering computer courses. The courses offered by them includes Computer basics, MS office, Desktop Publishing (DTP), Tally, Programming languages (java, c), hardware courses, etc. Centre for Entrepreneurship Development of Karnataka (CEDOK) conducts various entrepreneurship development programs. There are also other self employment programs run by NGOs in the district. There also few other training centres providing training on beautician, typing, etc. Most of the training institutes are located in and around Gulbarga city only. Yadgir district has only has few training institutes and most of them offer only computer related courses. For details of training institutes and courses offered, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Gulbarga and Yadgir district, we also held a discussion with a youth group in these districts to understand their aspirations. They key points are summarised below:

- Most of the students are able to find educational institutes within Gulbarga district to pursue their higher studies. Only few students move out of the district for education.
- Yadgir district does not have adequate number of educational institutes. The students have to pursue their higher education in nearby districts such as Gulbarga.
- Students, who are not able to get admissions in good colleges, prefer ITIs. The latter are also preferred because ITI certification helps in obtaining Government and even private jobs. The low fee is an added advantage.
- Students prefer government ITIs than private because of low fees, better infrastructure and adequate facilities
- Students are able to choose their preferred course as variety of options is available in Gulbarga district.
- The important criteria for choosing any trade are the job opportunity for that trade and their interest in a particular field.
- Practical exposure is lacking in the training institutes.
- Quality of courses and teachers is good. Quality of infrastructure needs improvement.
- Students believe that there not adequate teachers available and vacancy needs to be filled.
- In Gulbarga, around 60 per cent of the students want to pursue higher education (Diploma) after completion of ITI studies. Rest of the students prefers to find a job upon completion.
- In Yadgir, only 20 per cent of the students are interested in pursuing higher education after their ITI education and the rest of the students want to go for work.
- Some students along with their main course, pursue additional training courses on computer (tally, DTP, etc) to increase their job opportunity
- Preferred sectors to work are manufacturing, automobile and IT

3. Developmental concerns

Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Shortage of skilled manpower within the district:** Gulbarga district has many educational institutions providing education and training to the locals. However, locals, especially youth are more prone to moving to places such as Bengaluru, Hyderabad, Mumbai and Pune for better job

opportunities and higher standard of living. Apart from people coming out of educational institutions, there are also other skilled labour migrating to Bengaluru and other cities. Most of these people are employed in construction sector. The important reason for migration is the better wages offered in cities. This has created a shortage of skilled manpower within the district. People available locally lack specific skills pertinent to their respective jobs. Industries in the district are finding hard to get skilled employees locally. Also, many industries are in the process of setting up a venture in the district. Shortage of skilled manpower is a concern for the district. Migration of population is prevalent in Yadgir district also. However, there are less industrial activities in the district and shortage of manpower is not experienced currently in the district.

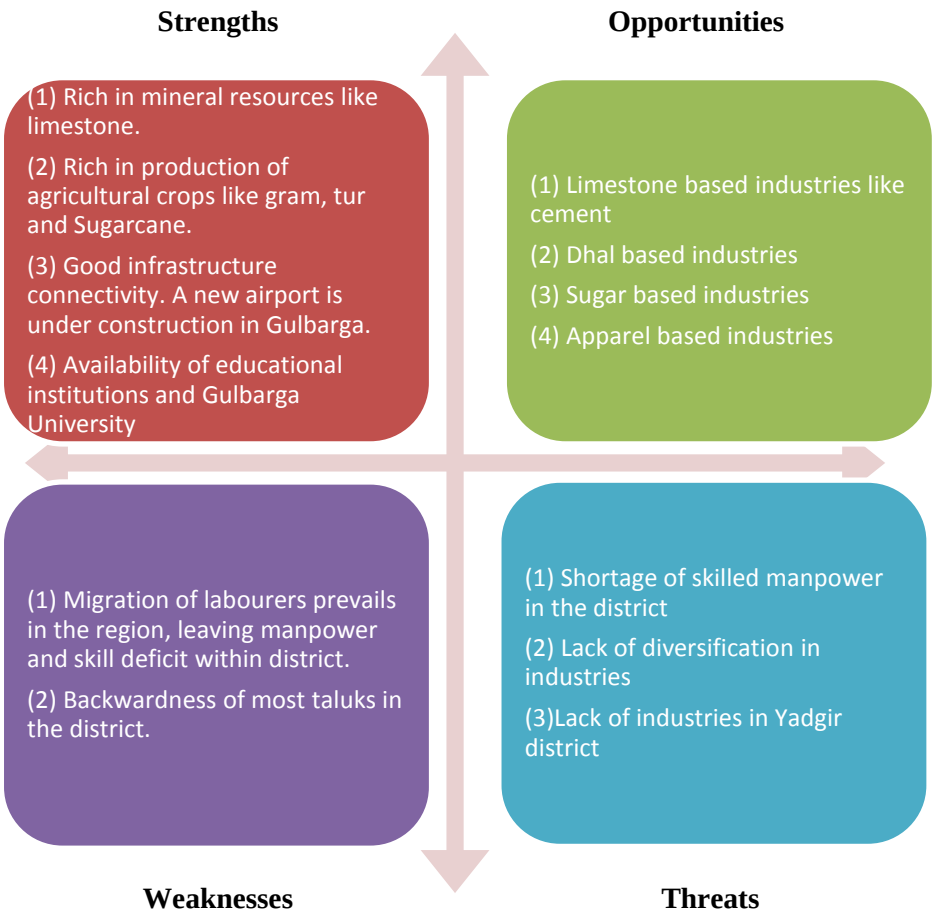
- **Lack of diversification of industries:** Gulbarga district has numerous dhal based industries and cement industry. Even the new entrants are targeting only these sectors and this is a concern for development in other sectors. Diversified industries would be helpful in employing people from various backgrounds and improve overall economy.
- **Lack of Industrialisation:** Yadgir district is industrially backward. There is only one large and medium scale industry in the district. The economy is totally depended on agriculture and mostly unskilled labourers are involved in farming and other allied activities. Unemployment prevails in the district, especially among the skilled youth since there are no industries in the district to provide employment. Also, there are number of skilled manpower migrating from the district to places such as Bengaluru and Mumbai. There are some pharmaceutical industries which have shown interest in starting their units in Yadgir district[35]. However these projects are yet to be confirmed.

SWOT analysis

Based on the diagnostics of the Gulbarga and Yadgir districts, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

[35] Source: District Industries Centre (DIC), Yadgir

Figure 141: SWOT Analysis of Gulbarga and Yadgir district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 3.05 lakh persons is likely to be generated in Gulbarga and Yadgir districts. Agriculture and allied activities are expected to remain the biggest employers. As the economy grows, employment demand in supporting sectors such as construction, transportation, healthcare and education is also expected to increase at a faster rate. However, sectors which are unique to Gulbarga and Yadgir districts and where skill up-gradation will be required within these districts are agriculture and allied activities, construction materials and building hardware, food processing, textile and clothing, and mining industry.

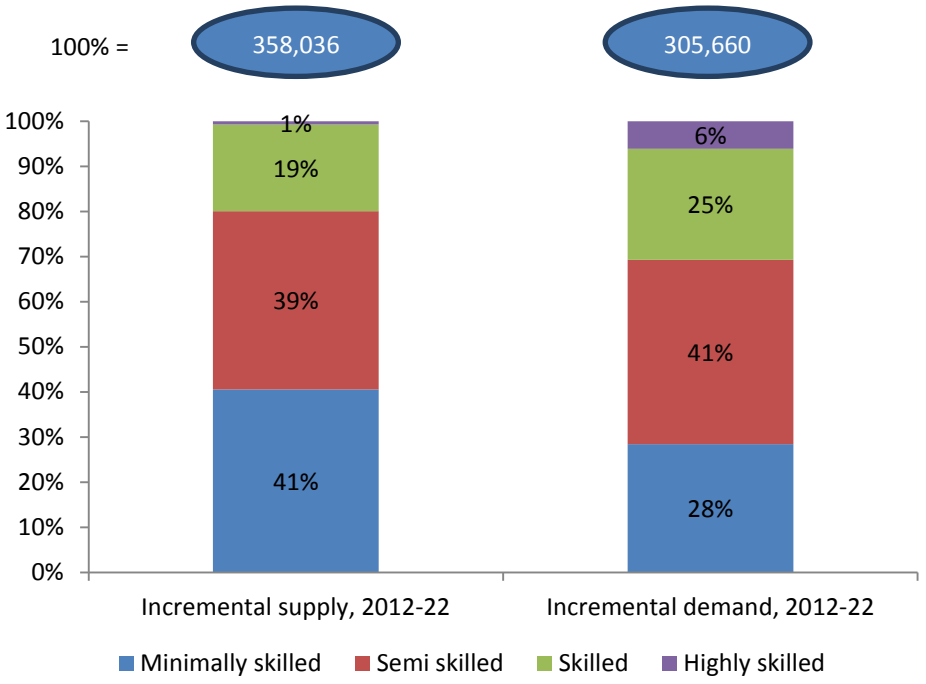
Table 255: Incremental demand in Gulbarga and Yadgir – 2012 to 2022

SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	107,759	89,748	13,414	2,441	2,155
BFSI	9,258	-	5,555	2,777	926
Building, Construction industry and Real Estate	69,816	20,945	34,908	10,472	3,491
Construction Materials and Building Hardware	15,336	1,534	9,968	3,067	767
Education and Skill Development	27,461	-	-	24,715	2,746
Food Processing	275	82	82	82	27
Furniture and Furnishings	306	123	123	46	15
Healthcare Services	30,640	-	3,064	21,448	6,128
Textile and Clothing	3,175	635	1,905	476	159
Transportation, Logistics, Warehousing and Packaging	25,041	5,008	14,524	5,008	501
Tourism, Travel, Hospitality & Trade	13,041	2,608	8,868	1,304	261
Unorganised	102	20	59	20	2
Mining	3,452	690	2,071	345	345
Total	**305,660**	**121,394**	**94,541**	**72,202**	**17,523**

Source: IMaCS Analysis

The incremental supply of work-force between 2012 and 2022 is estimated at 3.58 lakh. This is slightly higher than the demand, indicating the increased economic activity primarily in the Gulbarga district. People from Yadgir district will, hoever, continue to migrate out due to lack of sufficient opportunities.

Figure 142: Skill wise incremental demand and supply in Gulbarga and Yadgir district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on our field surveys in Gulbarga and Yadgir districts, we have found out that sectors where skilling interventions are required in addition to 'agriculture' are mainly 'construction materials and building hardware', 'Food Processing', 'textiles and clothing', 'unorganised sector – construction workers' and 'mining'. New jobs are likely to be generated in all these sectors. Some industries are planning to set up their new units and some existing plants have expansion plans in the district.

Table 256: Sectors where interventions are required in Gulbarga and Yadgir districts – comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Gulbarga and Yadgir	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		

High Growth Sectors identified by NSDC	Gulbarga and Yadgir	Karnataka
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		
Additional sectors	**Gulbarga and Yadgir**	**Karnataka**
Mining		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 257: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Food Processing – Dhal Milling			√
Construction Materials – Cement industry		√	√
Textiles and clothing industry	√		√
Unorganised Sector – Building, Construction and Real Estate services			√
Limestone mining			√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Construction Materials and Building Hardware – Cement Industry

Gulbarga region is popular for its numerous cement industries present around the district. Limestone, the chief raw material for the manufacturing of cement, is available in abundance in the district. Gulbarga has 6,455 million tonnes of limestone resource and the district accounts for around one-seventh limestone reserves in the country. This raw material availability has led to setting up of many large cement factories in the district. Currently, there are six large cement industries operating with an investment of around Rs. 2,800 crore employing around 4000 people. There are also many industries interested in setting up a cement manufacturing plants in the district. During the GIM held in 2010 in Karnataka, ten MoUs amounting to Rs 11,696 crore was signed for the district under cement sector. Once set up, these units are expected to employ around 11,000 people. Also, in the recently conducted GIM 2012, 12 new large cement projects were signed for the district. The district has a good potential in the future for cement industry and expected to generate employment in the sector.

As discusses earlier, the district is experiencing shortage in the skilled manpower. It is also prevalent in the cement industry. The industry is able to locally recruit people for the work. However, the people lack skill and needs training. There are skill gap existing among the employees in the sector and are explained in

Table 258. The value chain of the industry is explained below.

Figure 143: Value chain for cement industry

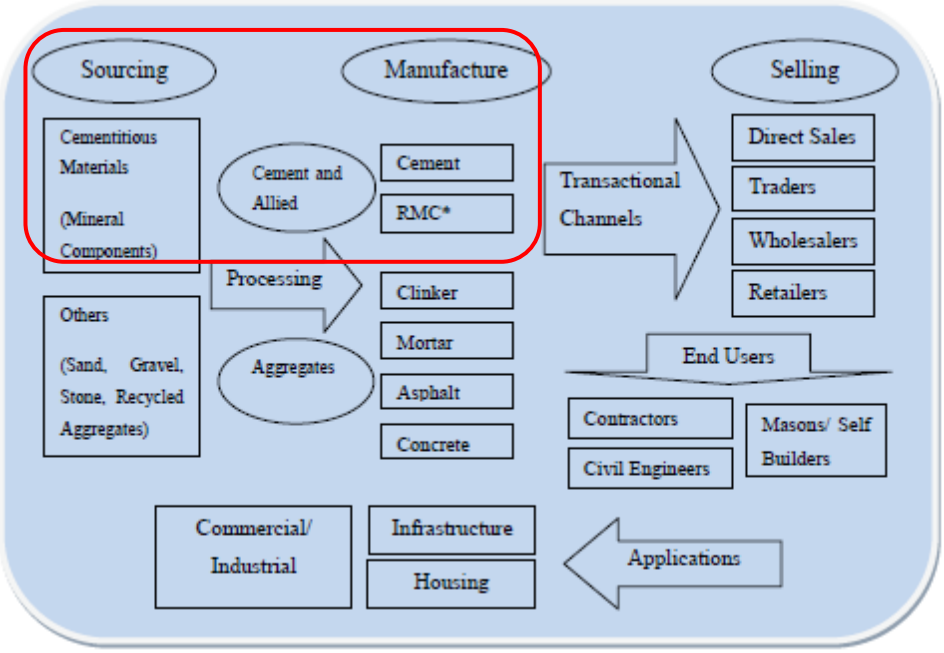


Figure 144: Value chain of cement industry in Gulbarga district

Raw Material Extraction
- The basic raw material for cement is limestone
- These raw materials are taken from the quarry either by extraction or through blasting

Crushing and Grinding
- The raw material is then crushed to get the required size
- Then these are grinded to produce a fine powder called "raw meal"

Heating
- The raw meal is sent to a rotary kiln, where it is heated around $1,500^0$ C
- At this temperature, chemical reactions take place to form cement clinker

Clinker storage
- Cement clinker is then cooled and sent to a storage space
- Here, Gypsum and fly ash are added in the storage made up concrete silos

Packing
- Cement is then conveyed from the storage area to the packing section
- They are packed using automatic packing machines and sent to markets

Table 258: Skill gaps in cement industry in Gulbarga district

Role, educational qualification	Expected competency	Skill gaps
Shop / Plant in-charge (Post graduate in engineering/ Engineering (except IT stream) and experience in the industry)	▪ Ability to identify use of alternate materials / industrial wastes / by-products in cement manufacture ▪ Ability to facilitate smooth erection of new cement plants as required and lead cement production initiatives ▪ Ability to maintain proper inventory records and ensure optimum inventory levels in the plant ▪ Ability to work as a technical facilitator for vendors ▪ Ability to convert the production plan into monthly-weekly-daily production schedule ▪ Knowledge of commercial aspects of cement business including obtaining required raw materials	▪ Inadequate ability to keep track of international trends in the cement industry ▪ Inadequate ability to coordinate between departments / functions
Supervisor (Engineering graduate (except IT stream) / Diploma with experience in the industry)	▪ Ability to work with increasing level of automation in the cement manufacturing process ▪ Ability to identify and initiate various energy conservation measures ▪ Ability to ensure proper and safe storage of materials ▪ Ability to work with cement processes, grinding and pyro processing, kiln and mills operation and process optimization ▪ Ability to maintain various elements of cement plants, such as rotary kilns, mills, pneumatic / hydraulic systems etc.	▪ Inability to manage workmen and maintain discipline ▪ Inadequate technical knowledge, such as knowledge of kiln operations ▪ Inability in working with new technologies

Role, educational qualification	Expected competency	Skill gaps
Workman / Operator (ITI / 10th pass with experience in the industry)	▪ Knowledge of the processes in cement manufacture ▪ Ability to understand different clinker production processes ▪ Ability to handle machines and maintain them properly ▪ Ability to handle all basic function of quality control ▪ Knowledge of cement packing processes and use of packing machinery ▪ Understand the supervisor's instruction and carry out work accordingly	▪ Inadequate ability to understand the technicalities of work being done ▪ Inadequate knowledge of quality tools / latest manufacturing techniques ▪ Inability to follow safety procedures ▪ Inability to understand the supervisor's instruction and do at first instance

Source: IMaCS Analysis

5.2. Food Processing – Dhal milling

As discussed earlier, gram and tur crop are grown plenty in Gulbarga and Yadgir districts. As of 2008-2009, the districts had 561,536 hectares of land under cultivation of gram and tur crops. These crops accounted for around 40 per cent of total cropped area in the districts. This abundant availability of the crop has led to setting up of several dhal based industries in these districts. There are numerous dhal mills in both the districts and Gulbarga city by itself has 253 dhal mills[36] in it. Chittapur and Jewargi taluks accounts for major production of these crops.

[36] Source: District Industries Centre (DIC), Gulbarga

Dhal milling plant

Mostly, semi skilled and unskilled workers are employed in the dhal mills. The skill gaps in the dhal milling industry in Gulbarga and Yadgir districts are mentioned in Table 259. The value chain of dhal mill processing is shown below.

Figure 145: Value chain in Dhal milling industry

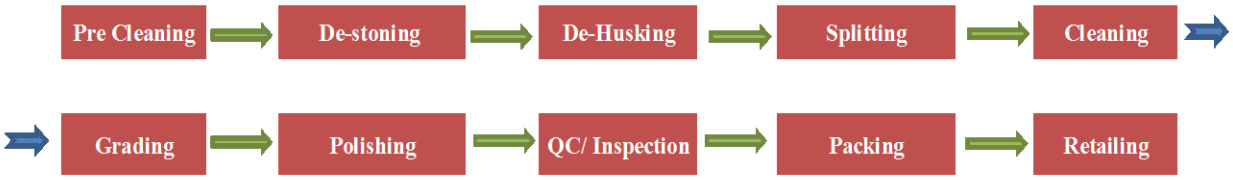


Table 259: Skill gaps in Dhal milling industry in Gulbarga and Yadgir district

Role, educational qualification	Expected competency	Skill gaps
Manager / Supervisor/ Quality control (any degree)	▪ Visual examination skills for faster segregation and checking of input/output ▪ Knowledge about various dhal and modifications required for processing various types of dhal ▪ Ability to record the results as they are observed and reporting on adherence to standards ▪ Ability to effectively communicate with the team and brief them of production objectives ▪ Supervise the entire process flow ▪ Managing other workers in the mill	▪ Lack managerial capabilities ▪ Inadequate knowledge about machineries used ▪ Lack of understanding about modern technology used in dhal milling

Role, educational qualification	Expected competency	Skill gaps
Operator (10th / 12th pass with 1-2 years of Experience)	▪ Ability to handle breakages/breakdown in machine parts ▪ Technical knowledge of milling machinery ▪ Knowledge about various types of dhal and variation in the process flow for each type ▪ Ability to check and maintain the machinery on a regular basis	▪ Lack knowledge about modern machineries (imported machines used in milling) ▪ Inability to consistently monitor the process
Helpers (8th standard/ illiterate)	▪ Knowledge of basic controls and settings of machines being worked on ▪ Knowledge about types of dhal and process required for each type ▪ Ability to stitch gunny bags neatly so as to avoid leakage ▪ Basic importance of quality maintenance in terms of consistency with respect to. following rules / guidelines	▪ No special skills required ▪ Inability to understand the instructions given by supervisor/operator ▪ Inability to follow best hygienic practices ▪ Inability to follow the work timings

Source: IMaCS Analysis

5.3. Textiles and clothing industry

Textiles and Clothing industry is one of the future prospect industries for the district in terms of employment generation. Gulbarga district currently does not have many large textile units in it. There are few small scale industries in the district operating in this sector. The factor endowment for textile industry is present in the district and the human resource is also available which is important for this sector. Government of Karnataka has proposed a garment textile park at Gulbarga and central government has also approved for setting up the park. This park will be set up at an estimated cost of Rs. 200 crore and when this textile park becomes fully operational, it is expected to provide employment to 20,000 people in the district. The government has initiated the process and two projects amounting to Rs. 60 crore employing around 2200 people have been signed in the recently held GIM 2012 under this textile park.

Once these units are set up, they would require skilled manpower. It becomes necessary to train the people in the region in textile sector. Since the proposed park is a garment textile park, the manpower would be required in the areas of cutting, tailoring, pattern making, checking, ironing, packing, quality assurance, etc. Presently there are not many training centres for textile in the district. New training centres may be needs to set up to train the manpower with the required skill set for the industry. The expected skill competency for the garmenting textile industry is explained in. The entire value chain of textile and apparel industry is given below.

Figure 146: Value chain in textiles and clothing industry

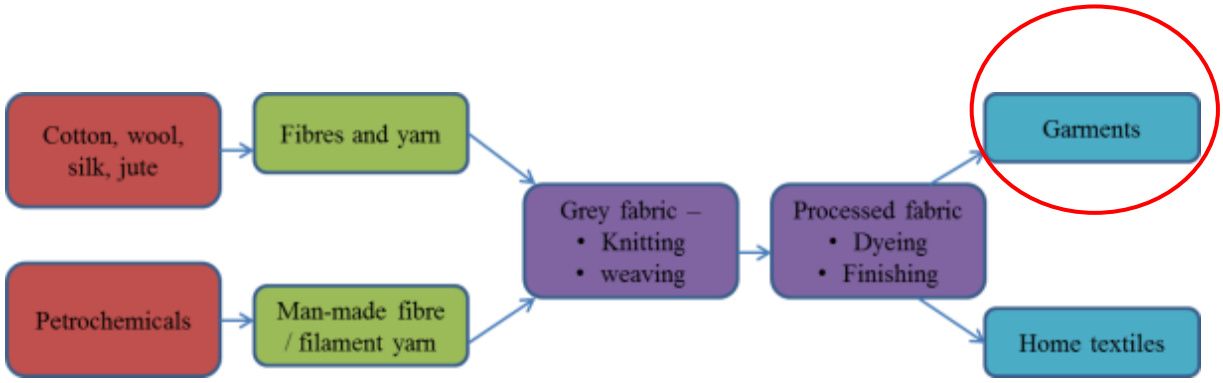


Table 260: Expected competency in garmenting textile industry

Role, educational qualification	Expected competency	Skill gaps
Manager / supervisor / floor in-charge (Graduate)	▪ Managing all the facilities and the functioning of the work-force. ▪ Supervising of the work conducted by operators / tailors and conducting quality checks. ▪ Knowledge of pattern making. ▪ Ability to undertake inspection, production planning and control. ▪ In-depth knowledge of production processes and inspection methods.	Presently, there are not many textile units in the district. Once the textile park is set up, skilled manpower will be required at the mentioned expected competency level.

Role, educational qualification	Expected competency	Skill gaps
	▪ Leadership skills ▪ Soft skills and interpersonal skills	
Operators / tailors (illiterate to 10th pass, trained in tailoring from NGOs or training provided by Department of Textiles)	▪ Tailors are classified into five categories based on their skill level. Higher skills mainly obtained from experience in the industry. ▪ Proficiency in tailoring / stitching is required for stitching garments with different specifications. ▪ Good machine control – knowledge of threading of sewing machine, stitching on different shapes, seaming garment components together in various fabrics to specified quality standard ▪ Knowledge of machine maintenance procedures ▪ Knowledge of pattern making, grading and draping ▪ Ability to understand instructions properly and stitch the garments based on them. ▪ Ability to work in teams / inter-personal skills. ▪ Soft skills	
Quality control executive (Graduate and with some experience in garment industry)	▪ Ability to inspect if the garments have been stitched as per given specifications and instructions ▪ Ability to check for quality adherence ▪ Ability to understand and prevent defects like size variations, loose threads, stains etc.	
Helpers (illiterate to	▪ Ability to cut the cloth based on specifications. ▪ Ability to button the stitched garments.	

Role, educational qualification	Expected competency	Skill gaps
10th pass)	▪ Ability to put labels on the stitched garments. ▪ Ability to iron the ready garments properly. ▪ Ability to iron the garments ▪ Ability to pack the garments in bundles	

Source: IMaCS Analysis

5.4. Unorganised sector – Building, Construction and Real Estate services

Gulbarga and Yadgir districts experiences migration of labour from the district to other places. The important destinations of migrants are cities such as Bengaluru, Mumbai, Hyderabad and Pune. There are no official data on the total number of people migrating from the districts to the cities. However, based on our discussion with the key stakeholders of the district, it is believed that a significant number of people are migrating to different places when compared with most of the other districts of Karnataka. Accoring to a report in 2008, around 15 per cent[37] of the total households in the district have reported there is at least one migrant from their family. The important reason for the migration is employment requirement and better salary offered in the cities than in their respective district. Also, there is seasonal migration that happens in the districts. The Hyderabad Karnataka region has a large concentration of landless agricultural labourers. These labours migrate to other cities in search of employment, particularly during summer, a lean season with the end of rabi season. According to an estimate made in 2009, it is found that at least 20,000 voters from Gulbarga constituency (including Yadgir district) have migrated to other cities in search of employment.

Most of the people migrating from the districts are engaged in construction related activities, especially in cities such as Bengaluru and Mumbai. These people are generally illiterate and unskilled labourers. They engage in a job and gain skill through experience. Currently, there are no training centres in the district for construction trade..

[37] *Source: A baseline survey of minority concentration districts of India by Institute for Human Development*

Table 261: Expected competency in Building, Construction and Real Estate Services

Role, educational qualification	Expected competency	General skill gaps
Skilled Workmen (10th pass / illiterate with experience in construction sector)	▪ Ability to coordinate with unskilled workmen ▪ Ability to operate key equipment such as cranes, and also mechanisms for loading and unloading of cranes ▪ Ability to work at heights (for high rise buildings, especially in the case of crane operators) ▪ Ability to deliver quality output ▪ Need to be adept in their respective trades – e.g. plastering, painting, plumbing, etc. ▪ Knowledge of construction specific areas – such as while carpentry is a generic course which is taught, there is a need for carpenters engaged in the Construction industry to be aware of lining, levelling, and finishing skills ▪ Need to understand machine operations and basic machine troubleshooting ▪ Ability to comply with safety and quality measures ▪ Need to have basic knowledge of construction engineering	▪ Inadequate knowledge of construction specific areas such as lining, levelling, and finishing skills in carpentry ▪ Lack of knowledge of basic machine operation – appropriate operation of cranes – lifting and placing ▪ Inadequate ability to understand instructions of supervisors/engineers

Role, educational qualification	Expected competency	General skill gaps
Unskilled Workmen (Illiterate)	▪ Ability to perform the operations of excavation, carrying, cutting, helping of mason, mixing, spreading of stones, packing ▪ Ability to be involved in and perform manual labour intensive work – thus need to be medically fit ▪ Need to have an orientation towards safety requirements and basic workplace practices (reporting to work on time, etc.) ▪ Need to be able to move material as required – using carts / manually, and thus also need to be physically strong ▪ Ability to take instructions from skilled workmen / supervisors / engineers and execute them appropriately Material preparation / Concrete mixing	▪ Very little safety orientation Inadequate workplace skills – discipline, cleanliness, etc. ▪ Inability to follow simple instructions ▪ Inadequate workplace related skills/work related ethics.

Source: IMaCS Analysis

5.5. Limestone mining

Gulbarga district is endowed with limestone mineral wealth. As discussed earlier, many cement industries have been established in the district because of this abundance availability of limestone mineral. Karnataka state accounts for 30 per cent of the limestone reserves in the country. Gulbarga district has around 6,455 million tonnes of limestone resource and the district accounts for around one-seventh limestone reserves in the country. Mining is one of the major economic activities in this region. The district is referred as country's limestone hotspot. The region has many limestone mines and several small quarries and crushing units in its landscape.

The mining in this region is mainly done by private players. Also, these are captive mines established by the cement industry such as the three large limestone mines operated by Wadi Cement Works, Rajashree Cement and Vasavadatta Cement. There are also many large cement players in the country

wants to start their operation in Gulbarga district and expressed their interest. There are also Memorandums of Understandings signed in the Global Investor Meet (GIM) conducted by Karnataka Government. For details refer to annexures.

There are many workers from the district involved in mining. Mostly on the job training is provided for them. Through experience, they understand about the job and perform better. Based on our discussion with industry people in the district, there is no major skill gap faced by them. The expected competencies of various job roles in mining industry in listed in
Table 262.

Table 262: Expected competency in mining industry in Gulbarga district[38]

Role, educational qualification	Expected competency
Managers and Mine head (1st Class mines manager certificate from Directorate of Mine and Safety)	▪ Knowledge of regulatory and legal requirements, including corporate mining lease process ▪ Ability to maintain quality ▪ Quality control ▪ Knowledge of latest mining technologies and advanced machines ▪ Understanding of environmental implications of the mining process and strict adherence to laws ▪ Ability to supervise operations at a mine to keep them efficient and safe ▪ Ability to monitor workers and work conditions ▪ Ability to meet production goals
Engineers (electrical, mechanical, auto)	▪ Knowledge of scientific methods of mining ▪ Ability to plan and direct the various engineering aspects of extracting minerals ▪ Conducting investigation of mineral deposits ▪ Preparing plans for mines, including tunnels and shafts for underground operations, and pits and haulage roads for open cut operations ▪ Preparing layout of mine development and the way minerals are to be

[38] Skill gap is not provided as there is no major skill gap faced by the industry in the district

Role, educational qualification	Expected competency
	mined ▪ Overseeing the construction of the mine and the installation of plant and equipment ▪ Ability to adhere to the mining regulations
Supervisors (Diploma in electrical, auto, mechanical)	▪ Ability to supervise activities conducted in the department for which responsibility is entrusted. This could include crushing plant, mining, stores etc. ▪ Ability to train staff to operate the various large and small equipment used within mining operations ▪ Overseeing the safety of all workers ▪ Complete understanding of all safety regulations and ability to handle safety issues
Fitters (experience based), Blasters and Drillers	▪ Ability to operate mining machines like dumpers, loaders and excavators ▪ Ability to drill using drilling machine ▪ Blasting skills ▪ Crushing skills
Helpers / machinery attendants (High school pass)	▪ Ability to maintain machines ▪ Ability to help operators with their day to day functions ▪ Ability to problem-solve

Source: IMaCS Analysis

5.6. Others

In addition to the sectors mentioned above, Gulbarga district is also home to many manufacturing and engineering based industries. While most of them don't have any employment generation or expansion plans in the next few years, they have reported shortage of skilled manpower in some of the key functions like mechanics, plumbers, electricians, masons, welders, etc.

6. Recommendations

Recommendations for Gulbarga district focus on cement, food processing, textile and mining industries. Also, there is a significant number of people migrate to cities such as Bengaluru and Mumbai for construction work. Therefore, recommendations have been given for construction sector as well. These industries have employment generation potential and also facing skill gap of manpower in their respective industries. Some of these sectors have recommendations for private players where training needs to given to upgrade the skills required and the others will need government intervention where improvement in facilities is required or training by private players is not viable.

Gulbarga and Yadgir districts are basically agrarian economy. These districts have a significant percentage of employment is concentrated in agriculture, thus, major up-skilling can be done for those workers, updating them of latest techniques of farming. This will help them improve their livelihood opportunities and will increase their income levels. While the detailed recommendations follow, summary is given in the table below

Table 263: Key recommendation for Gulbarga and Yadgir - Summary

Sector	For Government	For private players	For Industry
Construction Materials and Building Hardware – Cement Industry	n/a	▪ Existing institutions can conduct short term training courses on cement technology	▪ Industry association can develop a training cell for up skilling ▪ Scale up the formal training program conducted 'in house'
Food Processing - Dhal Milling	▪ Conduct short term course through 'Dal Mills Association' or 'Karnataka Tur Development Board'	n/a	▪ Training for farmers on modern farming, irrigation, fertilizers, and weed control.

Sector	For Government	For private players	For Industry
Textiles and Clothing industry	▪ Training through 'Modular Employable Skills' (MES) ▪ ITIs can start 'cutting and tailoring', 'fashion designing' and 'tailoring' trade in the region	▪ Private training centres can train on cutting, stitching, sewing machine operation, checking, packing and ironing ▪ Existing graduate colleges conduct graduate course on 'Fashion designing'	▪ Set up new textile units in the proposed textile park ▪ Tie up with training providers for recruiting skilled workers
Unorganised Sector – Construction workers	▪ Create awareness on training program required ▪ Create skill development centre for construction sector and train people	▪ n/a	▪ Major industry players may sponsor training program and recruit the trainees
Limestone Mining	▪ Department of Mines and Geology to act as a regulator and check mines on the norms followed	▪ No major skills gap in the sector and no intervention required.	▪ Adhere to environmental norms ▪ Follow safety procedures

6.1. Construction Materials and Building Hardware – Cement Industry

Gulbarga region is popular for its numerous cement industries present around the district. Limestone, the chief raw material for the manufacturing of cement, is available in abundance in the district. This raw material availability has led to setting up of many large cement factories in the district. Gulbarga is

referred to as the cement hub of the state. Currently, there are six large cement industries operating with an investment of around Rs. 2,800 crore employing around 4000 people. There are also many industries interested in setting up a cement manufacturing plants in the district. During the GIM held in 2010 in Karnataka, ten MoUs amounting to Rs 11,696 crore was signed for the district under cement sector. Once set up, these units are expected to employ around 11,000 people. Also, in the recently conducted GIM 2012, 12 new large cement projects were signed for the district. The district has a good potential in the future for cement industry and expected to generate employment in the sector.

The industry recruits people mostly (about 90 per cent) locally from the district. The industry does not face any issue in getting man power for the industry. However, they reported that they are facing skill gap in the workers and they need to be additionally trained in house and on the job to achieve industrial standards. The department of employment and training will not be able to introduce new training course on cement based industries, as the demand for employment in cement industry is only pertinent to this district and may not be same in the other regions of the state. The private players can intervene and offer training in this sector.

Private Players

Some of the job roles in the cement manufacturing industries are shop in charge, supervisor and workman / operator. For the supervisor role, engineering graduates are recruited. And for workman/operator role, ITI students with fitter / electrician trade background are recruited. While getting the manpower for the industry is not an issue, they face skill gap among these workers. These people complete their basic education on their streams and enter the industry. They lack industry specific skills. Skill up gradation program can be conducted by the private players. Some of the ways it can be done are as follows:

- Existing institutes in the districts can conduct short term courses in cement technology. These courses can be developed consulting with the industries in the district. For eg. a short-term training program in 'cement production and quality control' is conducted by the Cement Research and Development Centre at Jaypee University of Engineering and Technology, Guna, Madhya Pradesh. Supervisors and other technical employees from the industry can be made to participate in short term courses to upgrade their skills in cement industry.
- National Skill Development Corporation (NSDC) is taking initiative to establish Sector Skill Council (SSC) for various sectors. If Construction SSC is established, it can initiate in setting up a

training centre in Gulbarga district considering the number of construction related employments generated (cement and construction workers) through the district.

Industry

The district has a number of large cement industry players. An association can be formed among them and a training development cell can be created in the district for up skilling in cement sector. This training cell can be used by the members of the association and employees can attend the training program. Sufficient infrastructure facilities for the training can be provided by the industry players. Leading trainers from other States / countries can be invited for training.

Some of the prominent industries conduct formal training program for employees. These includes work culture orientation, psycho based training (for trainees), deployable skill development (cross skill development) and personality development training. They have a training module and a feedback mechanism on training from employees. These training can be scaled up and this practice cam be followed by all the players in the industry.

6.2. Food Processing - Dhal Milling

In Gulbarga and Yadgir districts, gram and tur crop are grown plenty. These crops accounted for around 40 per cent of total cropped area in the districts. This abundant availability of the crop has led to setting up of several dhal based industries in these districts. There are numerous dhal mills in both the districts and Gulbarga city by itself has 253 dhal mills[39] in it. Mostly, semi skilled and unskilled workers are employed in the dhal mills. Semi skilled workers are working as operators in the mill generally with ITI background.

The sector is mechanised and automated machines have made the job easy. The industry requires semi skilled labours and they are trained mostly on the job. Training opportunities are limited in this sector.

Government

The sector is informal and the industry requires only few semi skilled workers for each milling unit. Government can take some steps in providing skill based training.

[39] Source: District Industries Centre (DIC), Gulbarga

- Government may initiate the 'Gulbarga Dal mills association' or 'Karnataka Tur Development Board' to conduct short term training courses on Dal milling as required by the industry. This can be an up skilling program for the workers in the industry.

Industry

Based on our interactions with industry players in milling unit, we observe that they do not face major skill gap among workers. The industry is mechanized and the processing is automated. Semi skilled workers are required to operate the machines and other works involved in the unit. The industries can provide some help at the farming level. These industries could aid farmers through measures such as contract farming. They could also conduct training program for farmers on modern farming practices, irrigation, usage of fertilizers and pesticides, weed control, etc.

6.3. Textile and Clothing industry

Textiles and Clothing industry is one of the future prospect industries for the district in terms of employment generation. Gulbarga district currently has few small scale industries in the district operating in this sector. However, Government of Karnataka has proposed a garment textile park at Gulbarga and central government has also approved for setting up the park. This park will be set up at an estimated cost of Rs. 200 crore and when this textile park becomes fully operational, it is expected to provide employment to 20,000 people in the district. Once these units are set up, they would require skilled manpower. It becomes necessary to train the people in the region in textile sector.

Since the proposed park is a garment textile park, the manpower would be required in the areas of cutting, tailoring, pattern making, checking, ironing, packing, quality assurance, etc. Presently there are not many training centres for textile in the district. New training centres may be needs to set up to train the manpower with the required skill set for the industry. These can be started in both Gulbarga and Yadgir region. It is expected that people from Yadgir district will also migrate and work in the proposed textile units.

Government

Textile industry requires skilful labour. Government can aid this sector through capacity building. Gulbarga is expected to have garment making industries under the textile park and relevant training program can be offered.

- Department of Employment and Training through 'Modular Employable Skills' (MES) under 'Skill Development Initiative Scheme' (SDIS) can conduct various courses on garment making
- Department of Employment and Training can offer 'Cutting and Tailoring', 'Dress making' and 'Fashion Designer' trades in ITIs in these districts with limited capacity at the initial stage.
- State Government promoted agencies such as Centre for Entrepreneurship Development of Karnataka (CEDOK) can involve in training people in textiles.

Private players

Private players can also involve in capacity building for the sector. There are many private training centres in the state for textiles sector.

- Private players can set up a training centre in these districts and offer courses on:
  - Garment Cutter
  - Tailor (Basic Sewing Operator)
  - Computerized Embroidery Machine Operator
  - Skilled Sewing Operators
  - Garment Checkers
  - Garment Ironer
  - Garment packer
  - Maintenance of Machines in Garment Sectors
- Educational institutes in the district can offer graduate courses in 'Fashion designing'

The private training institutes needs to be registered with the Government and should offer a valid certificate for the trainees.

Industry

New industry units can be started in the proposed textile park which could provide employment to the local people. The conditions for starting a new textile unit are favourable in the district and the human resource is also available. Textile units will require skilled manpower for various job roles. Therefore,

these units can have a tie up or relationship with the training providers (Government/private) and recruit the manpower required from these institutions. The industry players can also participate in training the people according to the requirement of the industry locally. They could engage in framing the curriculum with training providers according to their need.

6.4. Unorganised Sector – Construction workers

Gulbarga and Yadgir districts experiences migration of labour from the district to other places. The important destinations of migrants are cities such as Bengaluru, Mumbai, Hyderabad and Pune. Also, there is seasonal migration that happens in the districts. The Hyderabad Karnataka region has a large concentration of landless agricultural labourers. These labours migrate to other cities in search of employment, particularly during summer, a lean season with the end of rabi season. Most of the people migrating from the districts are engaged in construction related activities, especially in cities such as Bengaluru and Mumbai. These people are generally illiterate and unskilled labourers.

Government

The construction workers are in the informal sector category. These people are from poor economic background. They migrate from their rural areas in search of job opportunities and work in construction sector. Private players may not be interested in training construction workers as the trainees may not be able to afford fees and the project may not be viable. Government need to intervene in these informal sectors and build the required capacity.

Considering a significant per cent of population is migrating from the districts for construction related activities, skill development centre for construction can be set up in the district. It can offer courses relating to construction sectors such as:

- Basic construction engineering
- Masons
- Painting
- Plastering
- Mixing of concrete
- Plumbing
- Carpentry

- Operation of cranes
- Other construction related activities

The common issue in training the informal sector is that the people are unaware of the benefits of undergoing a training program. They ignore them and do not participate in training related activities. Therefore, awareness on training programs needs to be created among these people by the Government. The benefits of training like salary hike, process improvement and better time management needs to be explained to them. Also, most of these people are daily wage earners and do not want to lose their daily earnings by attending the training program. So, Government may also need to provide stipend for these trainees to motivate them to participate in training activities.

Industry

Most of the persons involved in construction works are migrants from rural areas. Migration is prevalent in Gulbarga and Yadgir districts and most of the migrants are working as construction workers. They migrate to large cities where large construction projects are undertaken. They are employed by some of the major industry players in construction sector. These prominent industry players can sponsor the training program conducted and recruit the workers after completion of training. This could be helpful for both the trainees and the industry.

6.5. Mining sector

Gulbarga district is endowed with limestone mineral wealth. Gulbarga district has around 6,455 million tonnes of limestone resource and the district accounts for around one-seventh limestone reserves in the country. Mining is one of the major economic activities in this region. The district is referred as country's limestone hotspot. The region has many limestone mines and several small quarries and crushing units in its landscape.

The mining in this region is mainly done by private players. Also, these are captive mines established by the cement industry such as the three large limestone mines operated by Wadi Cement Works, Rajashree Cement and Vasavadatta Cement. There are many workers from the district involved in mining. Mostly on the job training is provided for them. Through experience, they understand about the job and perform better. While interacting with the industry, we found that there no major skill gaps

among the workers in the district. Hence, our recommendations are restricted to policy level initiatives only for the Government.

Government

Mining activities may lead to various environmental imbalances. The key environmental problems and impacts of mining/quarrying are:

- Land degradation
- Degradation of forest and loss of biodiversity
- Air and noise pollution
- Surface water pollution
- Ground water pollution

Department of Mines and Geology acts as the regulator for this sector. The Department has to ensure that the mining industries strictly adhere to the norms specified and keep a check on illegal mining if there is anything in the district. Excessive mining should be controlled considering the environmental issues it can create. Blast functions are carried out in mining activity. Thus, safety and security measures need to be followed for safety of people working in the mines. Regular inspection of mines can be done by the Department and ensure that all norms are followed in the mines.

Industry

Captive mining is predominant in Gulbarga region. Minimally skilled labours are mainly working in these mines. Based on our interaction with the industry people, we observe that there no major skill gap faced by the industry. The industry players should focus on adhering to the environmental norms enforced by the Department of Mines and Geology. Also, safety measure training may be conducted to the workers. Safety equipments such as gloves, helmet, etc. should be provided to the workers.

3.17. HASSAN

1. Introduction

Hassan district lies partly in the 'malnad' (ghat) tract and partly in the southern plains region (maidan). It is 194 kms away from Bengaluru and is located in the southern eastern part of Karnataka. The nearest airports are present in Bengaluru and Mangalore.

The total area of Hassan is 6,814 sq. kms which constitutes 3.5 per cent of the total area of Karnataka. The district is divided into eight sub-districts- Alur, Arkalgud, Arsikere, Belur, Channarayapatna, Hassan, H.N. Pura and Sakleshpur and has 2,400 villages. About 82.3 per cent of the total population lives in rural areas. The major crop grown in terms of net area sown as per 2008-09 is ragi. Other major crops in terms of net area sown are paddy, maize, potato, and coconut.

Industrial development in the district is low. Majority of the industrial units which are present in the district are in the form of granite units. The other major form of industry present in the district is textile industry.

Table 264: Comparison of Hassan district with Karnataka – key indicators

Indicator	Year	Hassan	Karnataka
Area, in sq.km.	2001	6,814	191,791
Percentage share in State geographical area, %	2001	3.55%	100%
No. of sub-districts	2011	8	175
No. of inhabited villages	2001	2400	27,481
No. of households	2001	364,806	10,401,918
Forest area as a % of total geographical area	2001	8.9%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Hassan district has a population of 17.76 lakh people – 2.9 per cent of the State population. Majority of the population is concentrated in Hassan sub-district, followed by Arsikere sub-district. While 65.9 per cent of the population in the district is in working-age group (15 to 64 years), about 50.2 per cent is actually working i.e. work participation rate.

The district's literacy rate is 75.9 per cent, which is slightly higher than the State average of 75.6 per cent, and the All-India average of 74 per cent. Male literacy at 83.5 per cent is significantly higher than female literacy rate at 68.3 per cent. Hassan has performed well in terms of Gender Development Index (GDI) as it has increased in its ranking from 14th in 1991 to 10th in 2001. The GDI value has increased from 0.507 in 1991 to 0.63 in 2001. Around 82.3 per cent of the population of Hassan lives in rural areas.

Table 265: Key demographic indicators

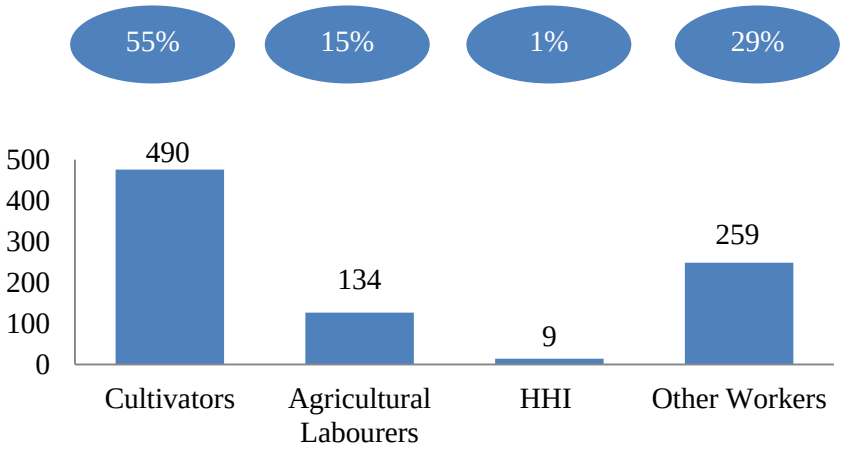
Indicator	Year	Hassan	Karnataka
Population, No.	2011	17,76,221	61,130,704
Decadal growth rate of population, %	2001-11	3.2%	15.7%
District's share in State's population, %	2011	2.9%	100%
Urban population as a percentage of total population, %	2001	17.7%	34%
SC population, %	2001	17.5%	16.0%
ST population, %	2001	1.5%	7.0%
Sex ratio, No. of females per 1000 males	2011	1,005	968
Population density, per sq. km.	2011	261	319
Literacy rate, %	2011	75.9%	75.6%
Main workers, No.	2001	702,827	19,364,759
Marginal workers, No.	2001	161,884	4,170,032
Working age population* as a percentage of total population, %	2001	65.9%	63%
Work participation rate^, %	2001	50.2%	45%
HDI	2001	0.64	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 8.64 lakh persons as per census 2001. Of this, 55 per cent are cultivators, 15 per cent are agricultural labourers, two per cent are workers in household industry and 29 per cent are other workers.

Figure 147: Hassan district's worker profile, as of 20011, in thousands



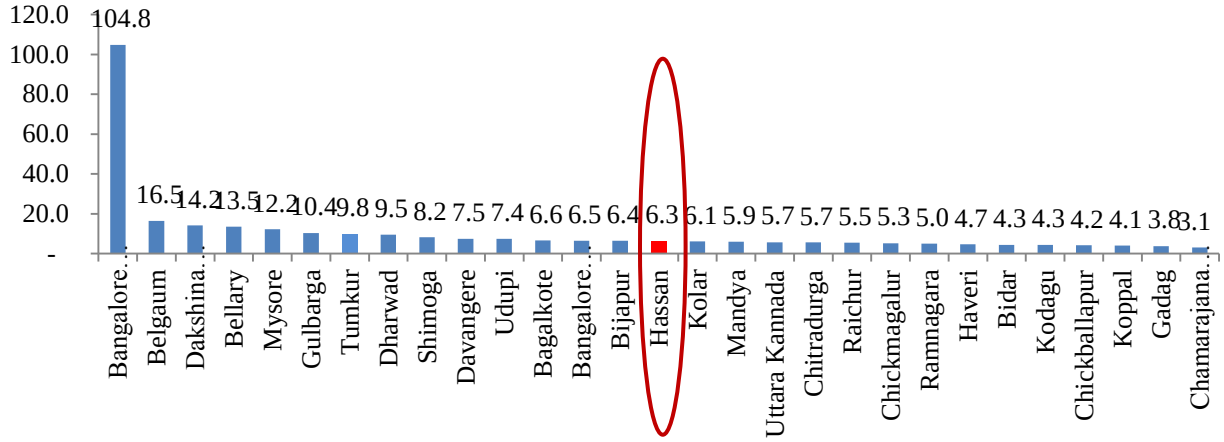
HHI: Household Industry

Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Hassan district had the fifteenth largest Gross District Domestic Product (GDDP) in Karnataka at Rs 6,346.68 Crore (2.06 per cent of the Gross State Domestic Product). In terms of per capita GDDP though, it ranked 20th amongst 30 districts at Rs 33,632 which was lower than the State's average of Rs 53,101.

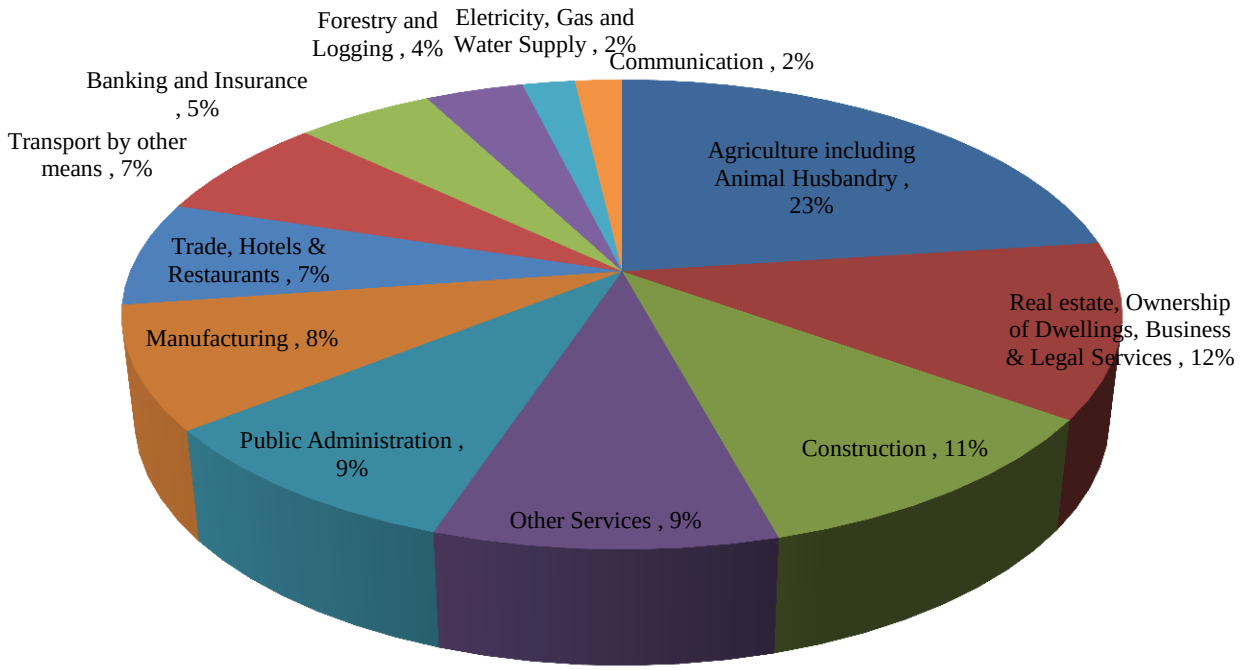
Figure 148: Gross District Domestic Product in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 52.28 per cent in 2008-09. This is followed by primary sector at 26.81 per cent and secondary sector at 20.91 per cent.

Figure 149: Sector wise distribution of Hassan's GDDP, as of 2008-09,100%=Rs. 6346.68 Crore



Source: Hassan District at a Glance 2009-10

Agriculture: Of the total area of 662,602 hectares in the district, around 68 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of potato and maize under food crops and coconut under commercial crops. For details of crops grown in Hassan district, refer to annexures.

Industry: As of 31st December 2011, Hassan district had eight large and medium scale industrial units, employing 3,745 persons (Refer to annexures for complete list). End products manufactured included textiles, sponge iron, sugar, milk, cattle feed etc.

Hassan also has 546 Small Scale Industries (SSIs), employing 1,625 persons. As of March 2010, majority of these were textile based industries at 25.3 per cent, followed by wood based industries at 22.7 per cent, food and intoxicant based industries at 12.6 per cent, glass and ceramics based industries at 10.4 per cent and remaining in others. Refer to annexures for details.

The district has four Special Economic Zones (SEZs), nine industrial areas developed by Karnataka Industrial Areas Development Board (KIADB) and seven industrial estates developed by Karnataka State Small industries Development Corporation Ltd. (KSSIDC). During the Global Investors Meet (GIM) held in 2010 in Karnataka, 10 Memorandums of Understanding (MoUs) amounting to Rs 2,321.11 crore were signed for the district. Once set up, these are estimated to employ 2,050 persons. For details of these projects, refer to annexures.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 52.28 per cent of GDDP in Hassan district. Of all the services, the key services in the district are of 'real estate, ownership of dwellings, business and legal services' at 12 per cent of GDDP, followed by public administration and other services at nine per cent each.

2.3. State of education

As of March 2010, Hassan district had 3,506 schools, with 267,993 students enrolled. The drop-out rate was 4.18 per cent both for lower primary and 0.04 per cent for higher primary schools. This is lower than the State average of 4.6 per cent for lower primary and 8.1 per cent for higher primary schools.

There are 149 pre-university (PU) colleges with 30,801 students. The student to teacher ratio is of 30:1. There are also 15 general colleges, two medical colleges, three polytechnics (for technical education), five engineering colleges and one dental college. For details of courses offered by polytechnics, refer to annexures.

Table 266: School education infrastructure in Hassan district, as of March 2010

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Govt.	1,490	80,182	1,013	36,458	240	40,901
Aided	2	6,820	42	3,311	127	22,622
Unaided	69	37,731	237	11,621	143	12,517
Others	9	1,175	28	2,812	28	2,781
Total	1,570	125,908	1,320	54,202	538	78,821

Source: Hassan District at a Glance 2009-10

Table 267: Higher education infrastructure in Hassan district, as of March 2010

Colleges	No.	Students
PU Colleges	149	30,801
General	15	6,808
Medical	2	160
Polytechnic	3	2,033
Engineering	5	4,986
Dental	1	135

Source: Hassan District at a Glance 2009-10

Table 268: Key ITI indicators in Hassan district, as of March 2012

Indicators	Value
Total Number of ITIs	82
Number of Government ITIs	9
Number of Private Aided ITIs	20
Number of Private Un-Aided ITIs	53
Total Number of seats	8,012
Student pass rate	70%
Student drop-out rate	17%

Source: IMaCS Primary Survey

For vocational training, Hassan district had a total of 82 Industrial Training Institutes (ITIs) / Industrial Training Centers (ITCs) as of March 2012. Of these, 9 are Government ITIs, 53 are private unaided ITIs and 20 are private aided ITIs.

Based on our discussions with the key stakeholders in Hassan district, we have found that on an average, of all the students that pass out from an ITI in each year, 60 per cent find jobs in the market. For details on courses offered by ITIs in Hassan, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions. The Government Departments offer courses in trades such as teacher education, evaluation, science, technology, policy planning, personality development, behavioural management, fish breading and marketing, realing, crafting and trades in health and agriculture.

The private training institutes are offering courses in teacher's nursing, computer training, catering, hotel management and physiotherapy. For details of courses offered by private training institutes in Hassan district, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Hassan district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- The students in Hassan have a preference for working in government organisations.
- They do not prefer to work in Hassan as there are a very few employment opportunities present in the district.
- They are ready to undergo any private training courses which can increase their employability and their salary. However, the capacity to pay fee is low.
- Students are keen to take courses which can improve their communication skills or help in personality development.
- Their preference of courses also gets influenced by the trades of their family members such as electricians, welders etc.
- They want better infrastructure facilities in terms of equipment required for training. In addition proper maintenance of the training equipment is also required.

- They also require better faculty.
- Students do not have much information about the employment opportunities and career path a course can offer.

3. Developmental concerns

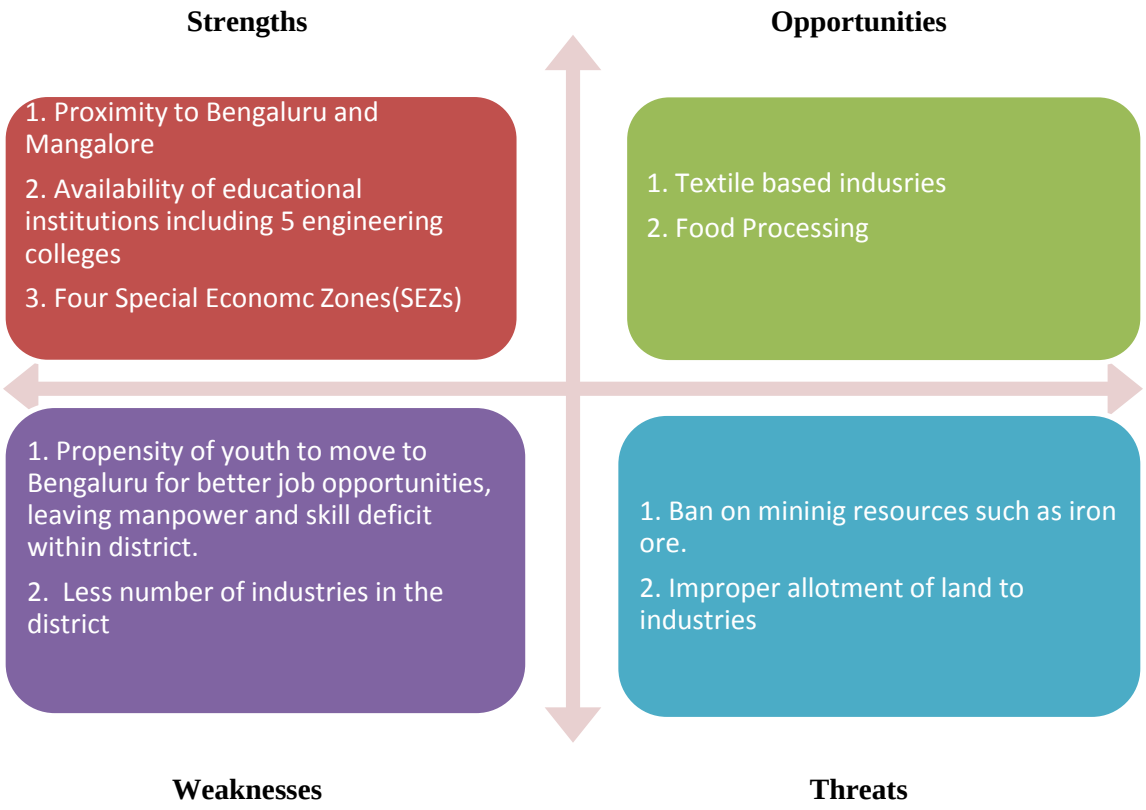
Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Land issues:** As per our discussion with the key stakeholders of Hassan, accessibility to land is a major concern for Hassan. Most of the land is allotted to several industries. But not much work is going on a major portion of this allotted land. The delay is because of the private players who are not starting their work in time. Thus the purpose of allocating land to industries gets defeated. Due to this, the allotted land is not able to generate employment for the people of Hassan.
- **Demand-Supply Gap**: There is a demand for unskilled labour force in Hassan. This can be seen from the fact that there are more than 70 granite units in Hassan which requires unskilled workforce. Most of the people who work in these industries are immigrants from Bihar and Rajasthan. The construction projects conducted by the government also requires a large amount of labour force but most of the people who work in these projects are from outside the district. This is due to the fact that most of the people from Hassan are not inclined towards jobs which require unskilled labour. One reason is the location of Hassan. Since this place is quite close to Bengaluru and Mangalore, people from Hassan move to these places for better opportunities.

SWOT analysis

Based on the diagnostics of the Hassan district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 150: SWOT Analysis of Hassan district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 2.47 lakh persons is likely to be generated in Hassan district. Agriculture and allied activities are expected to remain the biggest employers. As the economy grows, employment demand in supporting sectors such as construction, transportation, healthcare and education is also expected to increase at a faster rate.

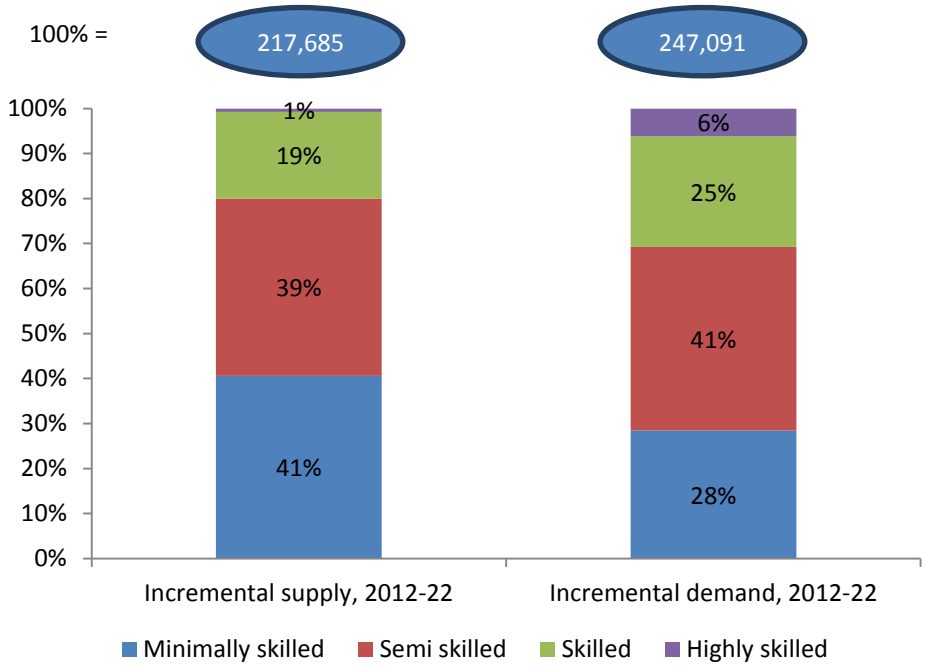
Table 269: Incremental demand in Hassan – 2012 to 2022

SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	82,564	68,764	10,278	1,870	1,651
BFSI	8,015	-	4,809	2,404	801
Building, Construction industry and Real Estate	31,666	9,500	15,833	4,750	1,583
Chemicals & Pharmaceuticals	77	15	23	23	15
Construction Materials and Building Hardware	1,967	197	1,278	393	98
Education and Skill Development	10,499	-	-	9,449	1,050
Food Processing	188	56	56	56	19
Furniture and Furnishings	206	83	83	31	10
Healthcare Services	33,441	-	3,344	23,409	6,688
Textile and Clothing	1,363	273	818	205	68
Transportation, Logistics, Warehousing and Packaging	20,847	4,169	12,091	4,169	417
Tourism, Travel, Hospitality & Trade	56,163	11,233	38,191	5,616	1,123
Total	**247,091**	**94,309**	**86,860**	**52,395**	**13,527**

Source: IMaCS Analysis

The incremental supply of work-force between 2012 and 2022 is estimated at 2.17 lakh. This is lower than the demand. The district is likely to face shortage of manpower, as the people in the district do not prefer to work there. They have a preference to move to places such as Bengaluru, where better employment opportunities are available. Demand is higher at the minimally skilled level as compared to the supply. The industry is facing problems in finding people for doing minimally skilled jobs. So, most of the employees have either migrated from states of Bihar and Rajasthan or from other districts of Karnataka. This is primarily due to the unwillingness of the youth to work in such roles, which mostly include manual jobs.

Figure 151: Skill wise incremental demand and supply in Hassan district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on our field surveys in Hassan district, we have found out that sectors where skilling interventions are required are mainly agriculture, textile and clothing, and food processing. New jobs are likely to be generated in textile and clothing sector. However, since the district is rich in agriculture sector, establishment of food processing industries will create more jobs for the people of Hassan.

Table 270: Sectors where interventions are required in Hassan– comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Hassan	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		

High Growth Sectors identified by NSDC	Hassan	Karnataka
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given below.

Table 271: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Textiles and clothing		√	√
Food Processing		√	

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

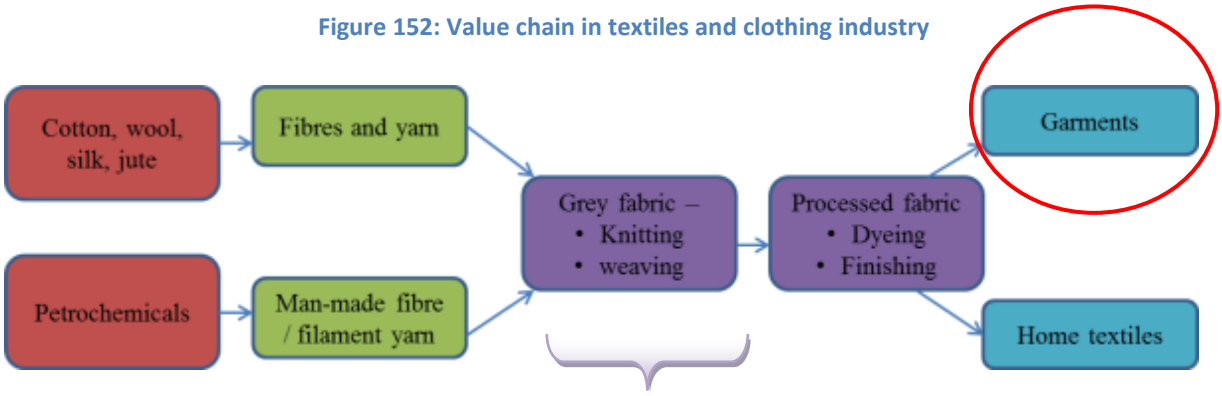
For sectors in which there is a potential for employment we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Textiles and clothing industry

As of March 2010, Hassan district had 138 textiles based SSIs, employing 345 workers. This was the highest number of units and employment under any category in SSIs in Hassan. In addition there are some large and medium size textile companies. These are Himatsingka Linens, Go Go International Private Ltd. and NTC's New Minerva mills. There is a lot of demand for tailors in this sector. As these companies are in an expansion phase, there requirement will increase in the next five years. During the Global Investors Meet (GIM) of 2012, a MoU was also signed between Government and Precot Meridian Ltd to produce hygiene and medical care Polyster, Viscos and Cotton based non woven Textile products. The factory will be set up in the district in Textile SEZ with an investment of Rs 330 crore and will provide employment to 600 people in the district.

Figure 24 explains the value chain of the textile and clothing industry.

Figure 152: Value chain in textiles and clothing industry



The knitted product is brought from Tirupur (Tamil Nadu), as raw material, which is then further processed to make garments as the end product.

Within the garments industry, the value chain followed in Hassan district is given below.

Figure 153: Value chain in garments industry – present in Hassan district

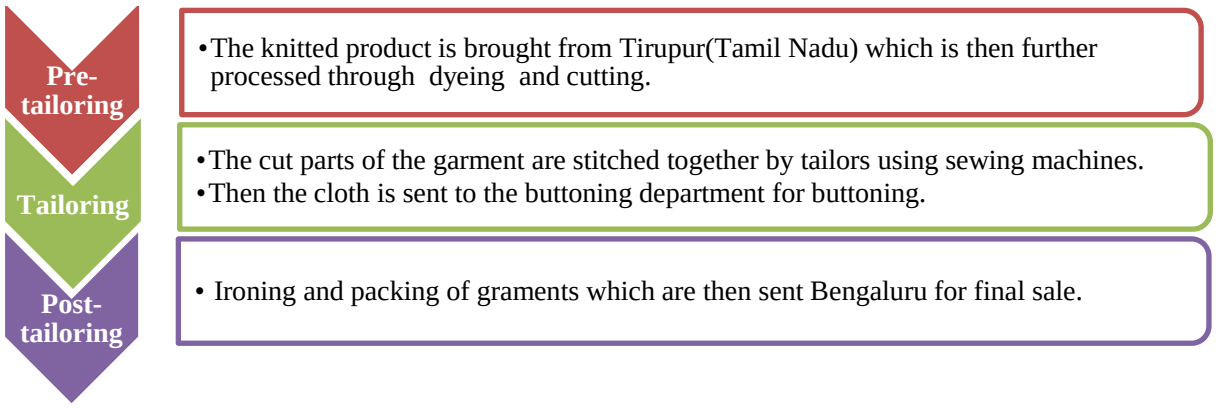


Table 272: Skill gaps in textiles and apparel in Hassan district

Role, educational qualification	Expected competency	Skill gaps
Manager / supervisor / floor in-charge (Graduate)	▪ Managing all the facilities and the functioning of the work-force. ▪ Supervising of the work conducted by operators / tailors and conducting quality checks. ▪ Knowledge of pattern making. ▪ Ability to undertake inspection, production planning and control. ▪ In-depth knowledge of production processes and inspection methods. ▪ Leadership skills ▪ Soft skills and interpersonal skills	▪ Most of the managerial / supervisory staffs are the employees who have risen up the ranks. ▪ So they have not been through professional training at execution level.
Operators / tailors (illiterate to 10th pass, trained in tailoring from	▪ Tailors are classified into five categories based on their skill level. Higher skills mainly obtained from experience in the industry. ▪ Proficiency in tailoring / stitching is required for stitching garments with different specifications. ▪ Good machine control – knowledge of	▪ The tailors who join are unskilled. So they are provided on the job training.

Role, educational qualification	Expected competency	Skill gaps
in house training	threading of sewing machine, stitching on different shapes, seaming garment components together in various fabrics to specified quality standard ▪ Knowledge of machine maintenance procedures ▪ Knowledge of pattern making, grading and draping ▪ Ability to understand instructions properly and stitch the garments based on them. ▪ Ability to work in teams / inter-personal skills. ▪ Soft skills	
Quality control executive (Graduate and with some experience in garment industry)	▪ Ability to inspect if the garments have been stitched as per given specifications and instructions ▪ Ability to check for quality adherence ▪ Ability to understand and prevent defects like size variations, loose threads, stains etc.	▪ On-the job training provided as such skills are lacking in persons trained at training institutes and usually come from experience only.
Helpers (illiterate to 10th pass)	▪ Ability to cut the cloth based on specifications. ▪ Ability to button the stitched garments. ▪ Ability to put labels on the stitched garments. ▪ Ability to iron the ready garments properly. ▪ Ability to iron the garments ▪ Ability to pack the garments in bundles	▪ Basic skills required for this profile, for which no / minimal training required. Mostly provided easily on the job.

Source: IMaCS Analysis

5.2. Food Processing

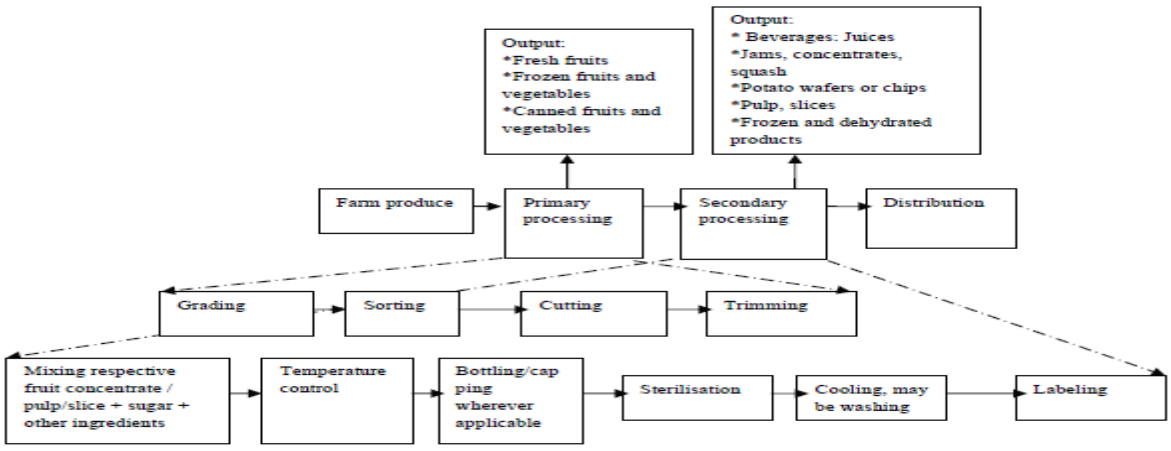
From our discussion with the key stakeholders of Hassan, we understand that food processing has got good potential for growth in the district, as it has rich agriculture and horticulture produce. Potato is the major vegetable which is grown in Hassan. In terms of horticulture crops, coconut and coffee are the major crops.

In GIM 2010, two MoUs related to food processing were signed. The total investment is of around 19 crore and employment generated will be for around 420 people. This is a small start but it shows that industry has started showing interest in food processing industry of Hassan.

In terms of total area sown for vegetables, potato is sown on around 90 per cent of this area. It is sown on around 13 per cent of total area under all crops. Thus, the district can be a destination for food processing companies which are into potato based products. The taluk of Hassan produces most of the potato of the district. Thus this sector can become a good source of employment for the people of Hassan. The district also has potential for food processing companies for fruits like banana and mango.

Coconut is sown on 14 per cent of total area sown and coffee is sown on 8.5 per cent of total area sown. But there are only very few small scale industries in these crops. So the demand for employment is very minimal.

Figure 154: Value chain in Fruit and Vegetable processing segment



Skill gaps are not shown in table 273 as the industry is still in its very nascent stage and is not facing any sill gaps at this juncture. We have mentioned the expected competencies which will be required once this sector blooms in the district.

Table 274 : Expected Competency in Fruits and Vegetables in Hassan district

Role, educational qualification	Expected competency
Supervisor (Graduate)	▪ Good reporting/documentation skills so as to be able to report the status of ▪ production, challenges faced and recommendations to top level management ▪ Excellent communication skills so as to effectively interact with workers on daily targets, production techniques, quality issues, etc. ▪ Ability to manage labour issues and keep workmen motivated. ▪ Ability to handle crisis and take corrective actions in case of quality issues such as mishandling of goods in plant and output not conforming with requirements
Floor level (illiterate to 10th pass	▪ Ability to visually examine fruits / vegetables and separate rotten fruits / vegetables ▪ Basic reading/writing skills for understanding the standard operating procedures ▪ Ability to be conversant with basic measurements so as to understand customer requirements as given in company documents ▪ In the case of manual operations, the ability to appropriately size/dice as well as the ability to make end produce visually appealing is critical ▪ Knowledge of procedures, sequence of steps / machines and the ability to adhere to the same at all times ▪ Ability to operate machines and set parameters such as temperature, running time of machines specific to process requirement.
Quality control executive (Graduate and with some experience in Food	▪ Ability to conduct visual examinations and identify unacceptable colour / flavour of the fruits procured ▪ Ability to undertake chemical analysis and assess PH levels vis-avis the requirement, chemical requirements and biological requirements.

Role, educational qualification	Expected competency
processing industry)	
Sales and Marketing Manager (Graduate/ Post graduate and with some experience in Food processing industry)	▪ Good communication, documentation and coordination skills, especially important for personnel working in companies that have export operations ▪ As products in this segment (such as juices, ketchup) differ with ingredient and proportion of mix, it is important to have adequate knowledge of such parameters. ▪ Ability to gauge the customer's requirement and design different SKUs and innovative packaging for fulfilment of varied customer needs depending on income, consumption level, etc.
Procurement manager (Pre university to Graduate and with some experience in Food processing industry)	▪ Excellent communication skills to be able to interacts with farmers and conduct training/educate them about the produce handling methods, pre-processing techniques, the demand driven choice of fruits/ vegetables to be grown etc. for them ▪ Ability to coordinate with sales teams and farmers equally well so as to close the communication loop and help attain the required production levels

6. Recommendations

Recommendations for Hassan mainly focus on the textile and clothing industry, and food processing industry. As other than agriculture, these are the only key source of employment for people in the district and have the potential to generate more employment, going forward. Although food processing industry is in its very nascent stage but it has got huge potential in terms of employment generation.

The Sector Skill Councils of these industries will play a key role in identifying the skill gaps and adequately addressing it.

Table 275: Key recommendations for Hassan – summary

Sector	Government	Private training providers	Industry
Textile and Clothing	• Attract more industries to establish their centers in the district	• Provide training programs for tailors as per the industry requirements.	• Assist in training of trainers. • Promote the employment opportunities offered in the sector.
Food Processing/Agriculture	• Create infrastructure to bridge the gap between demand and supply.	• N/A	• Explore opportunities which are offered in this sector.

6.1. Textiles and clothing industry

As of March 2010, Hassan district had 138 textiles based SSIs, employing 345 workers. This was the highest number of units and employment under any category in SSIs in Hassan. Some of the large and medium textile companies which are present in Hassan are Himatsingka Linens, Go Go International Private Ltd. and NTC's New Minerva mills. Himatsingka Linens being the largest has employee strength of around 2,000 people while Go Go International Private Ltd. has employee strength of over 700 people. New Minerva mill is in its nascent phase of operations but it has the support of the NTC brand, which will fuel its growth. Thus we can see that the textiles industry in Hassan is growing. As this industry will grow, the demand for human resources relevant to this industry will also grow. This can be in the form of cutters, tailors, helpers etc. These provide employment to more than 3,000 people. In addition, during the Global Investors Meet (GIM) of 2012, a MoU was also signed between Government and Precot Meridian Ltd to produce hygiene and medical care Polyster, Viscos and Cotton based non oven Textile products. The factory will be set up in the district in Textile SEZ with an investment of Rs 330 crore and will provide employment to 600 people in the district. Going forward, more people will be required in this sector in the district and they will have needs for skilling.

Government

The district has a textile SEZ. The purpose of having a SEZ for a specific sector is to promote that sector. At present, there are around only three to five companies in this SEZ. The government's role should be to lure more companies to this SEZ. This can be done by creating awareness about this SEZ and the benefits it brings. In addition, government can ask industry bodies to promote business in this SEZ. This will bring more employment from this sector which is still in its nascent phase in the district and has got huge potential. With the growth of the sector, it will be able to become an employment source for the people of Hassan.

Private training providers

On the basis of our discussion with key stakeholders of Hassan district, there is a requirement for training in textiles sector. But most of the requirement of textiles industry in Hassan is in the form of tailors. Tailors form a major part of the employee workforce. People who are generally trained for the job of tailors are unskilled in nature. The technical training is provided by the master tailors of the companies. This training is in the form of on the job training which can range from one to two weeks. But apart from technical training, they also need to be motivated to pursue this as a career. This is because some of them leave this job even before their training is over.

Private training institutes can offer special courses in tailoring. These courses will be designed on the basis of the requirements of the industry. They can also ask for guidance and support from National Institute of Fashion Technology (NIFT). Courses developed and delivered under the guidance of NIFT will add more value to these courses. In addition, these courses will attract more number of people to pursue these courses as they can see better opportunities offered to them.

The textile industry is in its expansion phase, as the companies in this industry like Go Go International has a requirement which can double the number of its employees in next few years. Thus the training programs offered in this sector can impact more than 3,000 people in a year. The number of people can increase as more companies establish their presence in the textile industry.

Industry

Industry can offer its expertise and infrastructure to assist in training of trainers. These trainers, who are trained by industry, will understand the requirements of the industry. So the training they will provide will be in terms of industry requirements. This will help the industry in minimising their cost of training.

The industry players should also join hands and create awareness about the employment opportunities offered in the textile sector. This can be done through conferences, seminars and short-term training programs in ITIs, ITCs, training institutes and colleges.

6.2. Food Processing\Agriculture

The district is rich in agriculture and horticulture produce. The district can generate more revenue through value addition in the produce of agriculture sector. This can be done by establishing in the sector of food processing. This will help in creation of more employment opportunities for the people of Hassan. In addition, farmers will be able to get better margins for their produce as its demand will increase. In terms of total area sown for vegetables, potato is sown on around 90 per cent of this area. It is sown on around 13 per cent of total area under all crops. Thus, the district can be a destination for food processing companies which are into potato based products. The taluk of Hassan produces most of the potato of the district. Thus this sector can become a good source of employment for the people of Hassan. The district also has potential for food processing companies for fruits like banana and mango.

Table 276: Identified Crops for food processing

Crop	Area(Ha)
Potato	57,496
Banana	3,403
Mango	2,223

In GIM 2010, two MoUs related to food processing were signed. The total investment is of around 19 crore and employment generated will be for around 420 people. This is a small start but it shows that industry has started showing interest in food processing industry of Hassan. Therefore, in the next five years, demand for people with skills in food processing sector is likely to arise.

Government

The district being rich in agricultural products like Potato, Coconut and Coffee which can support industries based on food processing. Government must create adequate infrastructure so as to manage

the supply of raw materials for the food processing industry. Government must keep the farmers updated through extension agents on the latest developments in the farming sector so as to improve the quality and quantity of crops.

There are few companies which are based on food processing but there is hardly any requirement in these companies. The district also has a SEZ for food processing. The purpose of having a SEZ for a specific sector is to promote that sector. In this context, government's role can be to bring more companies in this sector, so that they can become a source of employment for people of Hassan. Government has to create infrastructure to manage gaps at both ends of demand and supply. The infrastructure has to be in terms of better connectivity to create linkages at both supply and demand side. Adequate infrastructure must be created to manage drought

Private training providers

The food processing industry is yet to develop, so as of now, there isn't much scope for private training providers to provide training for the trades in this sector. But once the sector starts to grow, these training providers should create awareness about the opportunities in the food processing sector.

In terms of agriculture sector, private training institutes don't have much role to play. Although, when agriculture sector skills council starts functioning, it can partner with these institutes to provide training of trainers and agriculture extension agents.

Industry

Since, only food processing companies and agriculture trading companies will mostly be inclined towards development of agriculture sector. For the development of agriculture sector and Hassan, it's important to create more demand for agricultural produce and at the same time, create more employment opportunities for the people of Hassan. This can be done through the establishment of more food processing industries in Hassan. In GIM 2010, two MoUs were signed for food processing industry. This can be a small step towards exploring new opportunities in this sector. More companies from the private sector should expand their establishments in a district which is rich in agriculture and produce crops like potato, coconut and coffee.

3.18. HAVERI

1. Introduction

Haveri district was formed from the Dharwad district in 1997. Haveri district is exactly in the centre of Karnataka. It is bounded by Dharwad district on the north, by Gadag district in the northeast, by Bellary district on the east, by Davangere district on the south, by Shimoga district in the southwest and by Uttar Kannada on the west and northwest. Haveri is about 335 kilometres from Bangalore by road and 349 kilometres by rail. Haveri (town) is the administrative and political headquarters of the district, whereas Ranebennur in the south is a business hub.

Haveri district has a total land area of 4,848 square kilometres (sq. km.) and a population density of 331 people per sq. Km. It is sub-divided into seven sub-districts – Hanagal, Shiggaon, Savanur, Haveri, Byadgi, Hirekerur, and Ranebennur; and has about 691 villages. Majority of the population at 79 per cent lives in rural areas. Agriculture is the main occupation, employing 75 per cent of the labour force (as of Census 2001). The remaining is in household industry (four per cent) and other workers[40] at 22 per cent.

[40] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

Agriculture being the main occupation in the district, of the 485,000 hectare of the geographical area ofthe district 360,030 hectare is cultivated. Jowar, cotton, rice, chilies, gram, groundnut, sunflower, sugarcane, and oilseeds are the major crops of the district. Varada, Kumadhvati, Dharma and Tungabhadra are the main rivers of the district.

Table 277: Comparison of Haveri district with Karnataka – key indicators

Indicator	Year	Haveri	Karnataka
Area, in sq.km.	2001	4,848	191,791
Percentage share in State geographical area, %	2001	2.5%	100%
No. of sub-districts	2011	7	175
No. of inhabited villages	2001	691	27,481
No. of households	2001	260,283	10,401,918
Forest area as a % of total geographical area	2001	9.78%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Haveri district has a population of 15.98 lakh persons – 2.6 per cent of the State population. Majority of the population (21 per cent) is concentrated in Ranebennur sub-district, followed by Haveri and Hanagal sub-districts at 17 per cent, Hirekerrur at 15 per cent and Bydagi, Savanur and Shiggaon sub-districts have 30 per cent totally. While 65 per cent of the population in the district is in working-age group (15 to 64 years), about 46 per cent is actually working i.e. work participation rate.

The district's literacy rate is 77.60 per cent, which is slightly higher than the State average of 75.6 per cent, and also higher than the All-India average of 74 per cent. If things are looked out at gender wise, male and female literacy were 84.22 and 70.65 respectively, with the male literacy being higher than the female literacy. Of the 30 districts, Haveri ranks 19th on Gender Development Index (GDI), with a value of 0.596.

Most of the population (79 per cent) lives in rural areas. In fact, as mentioned earlier, agriculture is also the main occupation of the people of the district, employing 70 per cent of the labour force as either cultivators or agricultural labourers.

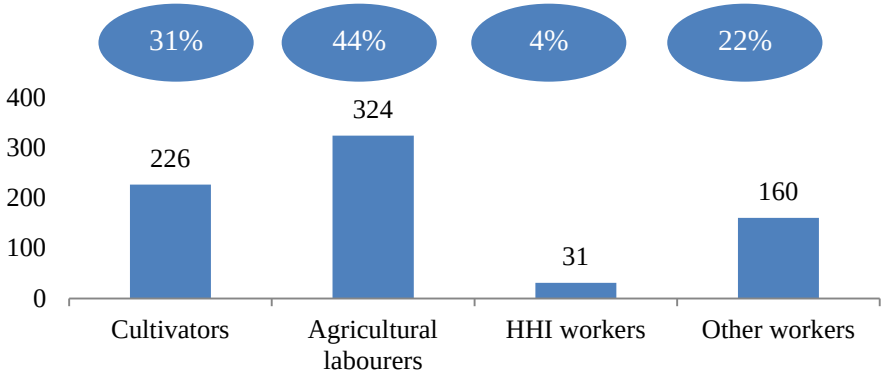
Table 278: Key demographic indicators

Indicator	Year	Haveri	Karnataka
Population, No.	2011	1,598,506	61,130,704
Decadal growth rate of population, %	2001-11	11.08%	15.7%
District's share in State's population, %	2011	2.6%	100%
Urban population as a percentage of total population, %	2001	21%	34%
SC population, %	2001	12.18%	16.0%
ST population, %	2001	8.8%	7.0%
Sex ratio, No. of females per 1000 males	2011	951	968
Population density, per sq. km.	2011	331	319
Literacy rate, %	2011	77.6%	75.6%
Main workers, No.	2001	531,221	19,364,759
Marginal workers, No.	2001	135,493	4,170,032
Working age population* as a percentage of total population, %	2001	62%	63%
Work participation rate^, %	2001	46%	45%
HDI	2001	0.603	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 7.4 lakh persons. Of this, 31 per cent are cultivators, 44 per cent are agricultural labourers, four per cent are workers in household industry and 22 per cent are other workers. igure 155: Haveri district's worker profile, as of 2011, in thousands



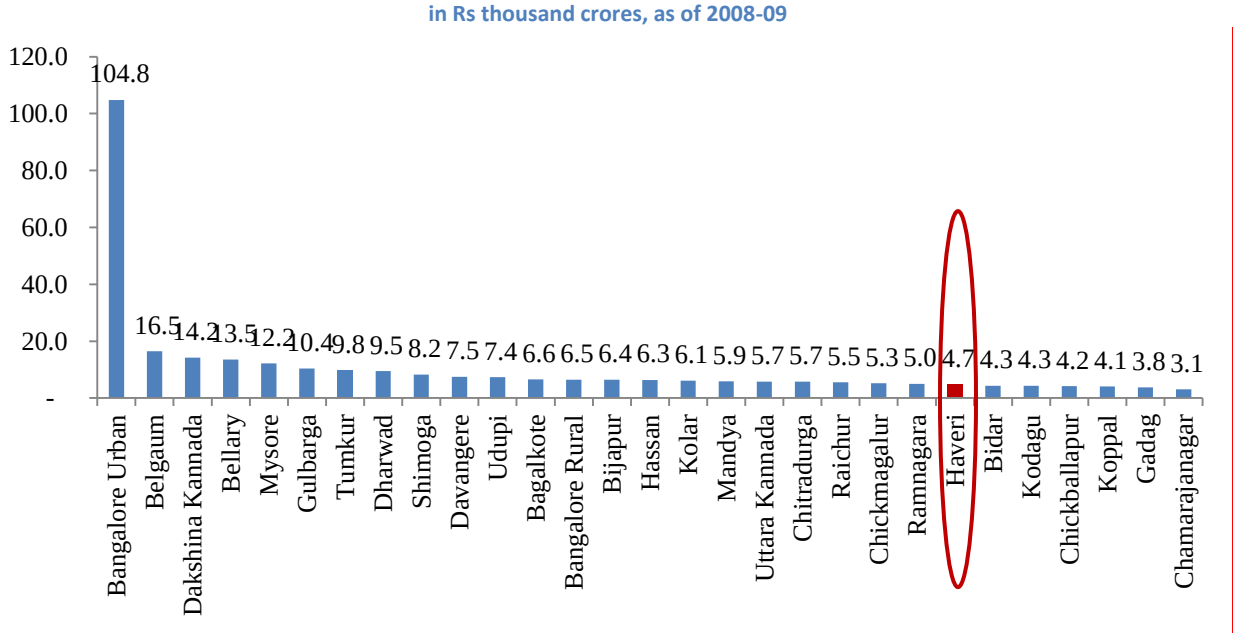
HHI: Household Industry

Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Haveri district had seventh lowest Gross District Domestic Product (GDDP) in Karnataka at Rs 4,700.15 crore (2 per cent of the Gross State Domestic Product). In terms of per capita GDDP, it was third lowest amongst 30 districts at Rs 29,799. This was lower than the State average of Rs 53,101.

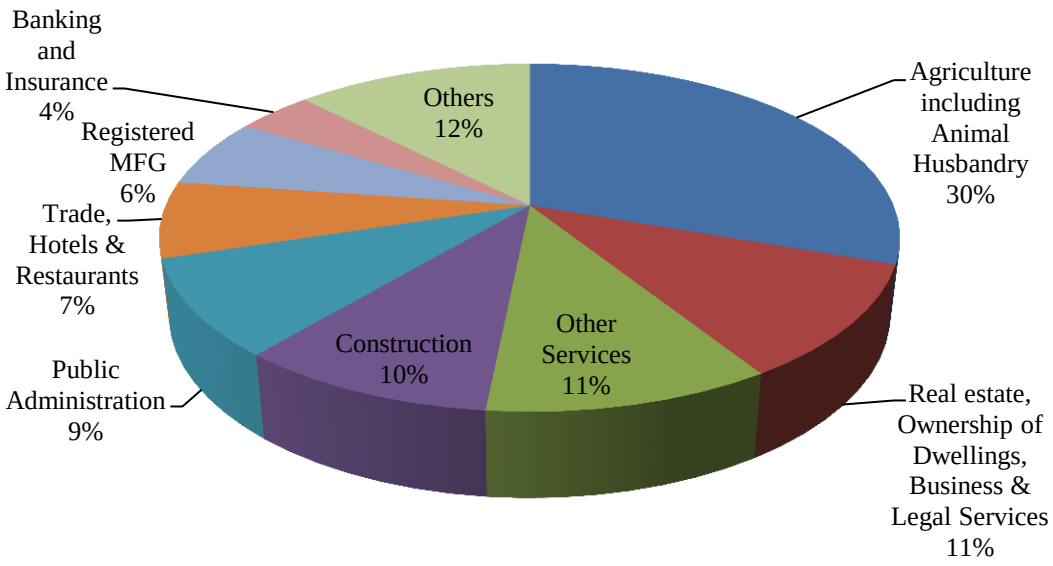
Figure 156: Gross District Domestic Product, in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 46 per cent in 2008-09. This is followed by primary sector at 34 per cent and secondary sector at 20 per cent.

Figure 157: Sector wise distribution of Haveri's GDDP, as of 2008-09, 100% = Rs 4,700.15 crore



Source: Haveri District At a Glance 2009-10

Agriculture: Of the total area of 4,848 sq. km. in the district, over 75 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of maize and paddy under food crops and chilli and cotton under commercial crops. For details of crops grown in Haveri district, refer to annexures.

Industry: As of 31st December 2011, Haveri district had five large and medium scale industrial units, employing 2,748 persons. They are Grasim Industries Limited, Harihar Polyfil, Synthete Industrial chemicals, Raitara Sahakari Nulin Girani and Venkateswara Hatcheries. (Refer to annexures for complete list). End products manufactured included Viscose Staple Fibre, Rayon grade pulp, chilli and meat processed products.

Haveri also has 201 Small Scale Industries (SSIs), employing 848 persons. As of March 2011, majority of these were wood based industries at 34.8 per cent, followed by job works and repair based industries at nine per cent, 'electrical and electronics' and chemical based industries at five per cent each, and remaining in others. Refer to annexures for details.

The district has six industrial estates, totalling 51 acres of land. Within the six industrial areas, 102 plots have been allotted to various industries in the district out of 146 plots developed in the region. For details, refer to annexures.

Haveri district is attracting significant investments from industrial players. During the Global Investors Meet (GIM) held in 2010 in Karnataka, seven Memorandums of Understanding (MoUs) amounting to Rs 17,432.62 crore were signed for the district. Once set up, these are estimated to employ 27,255 persons. Of eight, one has been completed and currently two projects are under implementation. For detailed status of these projects, refer to annexures.

Karnataka held its second GIM in June 2012. During this event, 13 MoUs / Expressions of Interest / Registrations of Interest happened for Haveri district alone. These have a proposed investment of Rs. 28,012 crore. These are expected to provide direct employment to over 12,287 persons. The interests have been signed for projects in several sectors including agro, food and horticulture, gold, chemicals & petrochemicals, energy, engineering, iron and steel and textiles. For details of these projects, refer to annexures.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 46 per cent of GDDP in Haveri district. Of all the services, the key services in the district are of 'real estate, ownership of dwellings, business and legal services' and 'other services' at 11 per cent of GDDP each, followed by trade, hotels and restaurants at seven per cent.

2.3. State of education

As of March 2010, Haveri district had 1,753 schools, with 309,617 students enrolled. There are 95 pre-university (PU) colleges with 22,142 students. There are also 30 general colleges, one medical college, three polytechnics (for technical education) and two engineering colleges. For details of courses offered by polytechnics, refer to annexures.

Table 279: School education infrastructure in Haveri district, as of March 2010

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Govt.	462	107,940	704	56,355	131	28,772
Aided	4	9,858	43	14,423	143	31,148
Unaided	86	27,666	104	9,460	76	23,995
Total	**552**	**145,464**	**851**	**80,238**	**350**	**83,915**

Source: Haveri District At a Glance 2009-10

Table 280: Higher education infrastructure in Haveri district, as of March 2010

Colleges	No.	Students
PU Colleges	95	22,142
Degree	30	8,301
Medical	1	150
Polytechnic	3	637
Engineering	2	1,738

Source: Haveri District At a Glance 2009-10

For vocational training, Haveri district had a total of 48 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, three were Government ITIs, three were private aided ITIs and remaining 42 were private unaided ITIs. All the 48 ITIs together have a seating capacity of 4,783.

Table 281: Key ITI indicators in Haveri district, as of March 2012

Indicator	Value
Total Number of ITI	48
Number of Government ITI	3
Number of Private aided ITI	3
Number of Private unaided ITI	42
Total Seating capacity	4,783
Student pass rate	80-85%
Student drop-out rate	5%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Haveri district, we have found that on an average, of all the students that pass out from an ITI in each year, 70 per cent find jobs in the market. For details on courses offered by ITIs in Haveri, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions. The Government Departments offer courses in trades such as animal husbandry, hand-in-hand microfinance, teacher education and evaluation, policy planning, personality development etc.

The private training institutes are offering courses in teacher's training, nursing, computer training and ayurveda. For details of courses offered by private training institutes in Tumkur district, refer to annexures.

2.4. Youth Aspiration

In the process of identifying the growth engines for the Haveri district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- The educational infrastructure within the district for technical training is very poor leaving very little option to the students except to either go back to their agriculture roots or to look at options in the nearby districts of Dharwad and Davengere.
- Amongst the existing colleges, ITIs and polytechnic institutions, the infrastructural facilities are very poor:-
    - Lack of proper classrooms
    - Lack of proper machinery
    - Inadequate number of training staff etc.
- Thus both proper academic and practical exposure is lacking amongst the students.
- Most students in the district are from very rural backgrounds, prefer to continue their studies and work in the region itself and hence demand for better educational infrastructure.
- The quality of teaching staff too is below average.
- First preference is to work within Haveri district only. No incentive to migrate to other districts for jobs.

3. Developmental concerns

Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

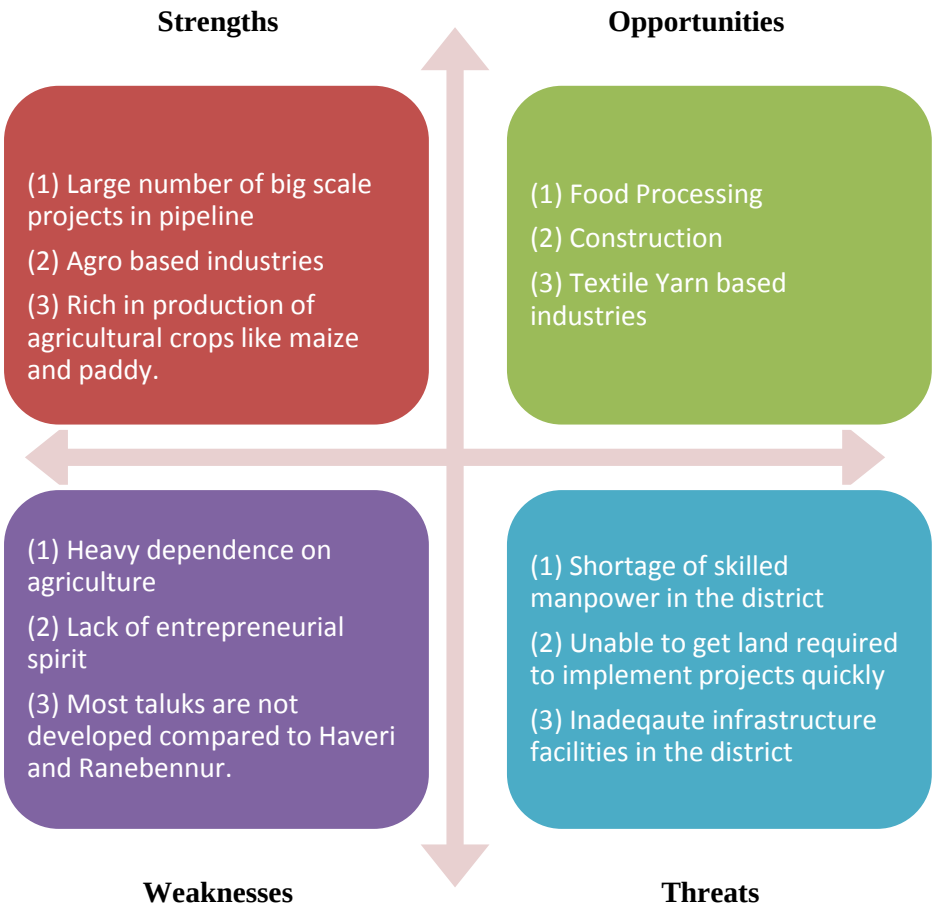
- **Lack of Industrialisation:** Haveri is in many ways an agrarian / rural district. More than 75 per cent of the population is dependent on agriculture for a livelihood. There is some amount of industrialisation, but only in a small pocket – in the Ranebennur region. Also, since the economy is totally depended on agriculture, most workers belong to the unskilled labourers category, involved in farming and other allied activities. For all the projects signed on during the 2010 GIM, only one has been implemented where the company had land of its own. In all other cases, the Government as well as private players are finding it difficult to get land from the farmers to implement their projects.

- **Shortage of skilled manpower within the district:** The district has very less number of technical training institutes. Its only strength is in the number of ITIs, but even those are spread too far, teaching just one or two trades per ITI and the quality of training and delivery is very poor. In the absence of good quality technical training institutes (E.g. Engineering colleges), students have to choose between going back to their agricultural background or to move to adjacent districts like Hubli, Dharwad and Davengere which has adequate good quality institutions. And the preference is for the former. Thus the district severely lacks skilled manpower on the technical front.

SWOT analysis

Based on the diagnostics of the Haveri district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 158: SWOT Analysis of Haveri district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 1.19 lakh persons is likely to be generated in Haveri district.

Haveri is an agrarian economy and over the next five years too it is expected to provide most of the additional employment in the district. Almost 57 per cent of the future expected demand for man power is expected to come from the agriculture and allied activities sector, most of it in the minimally skilled category. Within agriculture and allied, the focus continues to be on the production of paddy, jowar,

maize, cotton, chilli etc. This will be followed by 'Building, Construction industry and Real Estate' and 'Healthcare services' sector. In addition, as the economy grows, demand for supporting infrastructure such as health and education is also expected to increase.

Table 282: Incremental demand in Haveri – 2012 to 2022

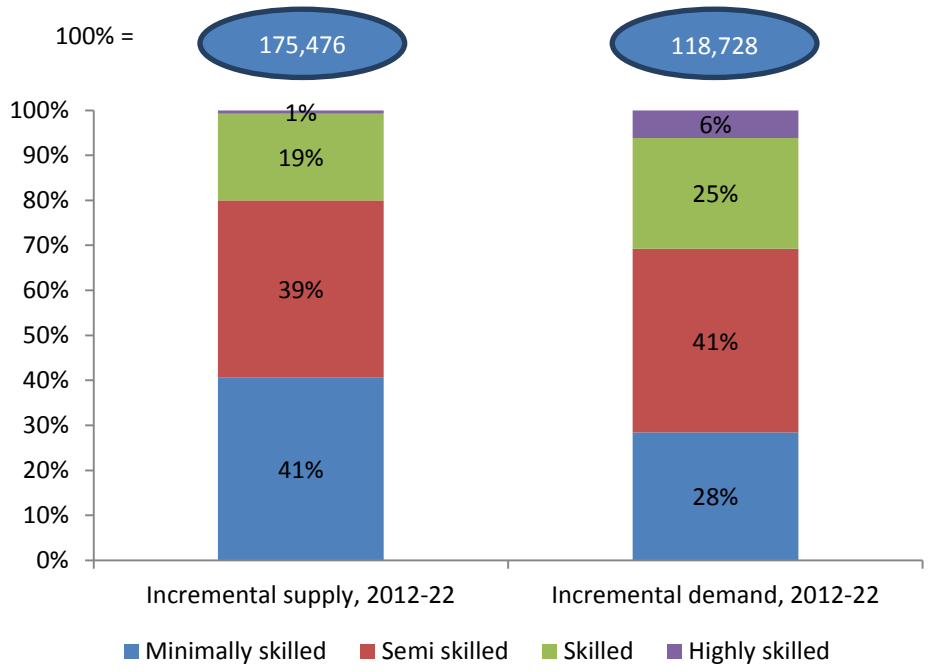
SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	58,939	49,089	7,337	1,335	1,179
BFSI	5,015	-	3,009	1,504	501
Building, Construction industry and Real Estate	21,052	6,316	10,526	3,158	1,053
Chemicals & Pharmaceuticals	338	68	101	101	68
Construction Materials and Building Hardware	1,307	131	850	261	65
Education and Skill Development	10,380	-	-	9,342	1,038
Food Processing	93	28	28	28	9
Furniture and Furnishings	166	66	66	25	8
Healthcare Services	14,284	-	1,428	9,999	2,857
Textile and Clothing	500	100	300	75	25
Transportation, Logistics, Warehousing and Packaging	6,536	1,307	3,791	1,307	131
Tourism, Travel, Hospitality & Trade	117	23	79	12	2
Total	**118,728**	**57,128**	**27,517**	**27,148**	**6,936**

Source: IMaCS Analysis

The incremental supply of work-force between 2012 and 2022 is estimated at 1.75 people. This is much higher than the projected demand for workers across all categories in the district. An important observation to be made here is that majority of the supply is within the 'Minimally skilled' and 'Semi-skilled' categories in the district resulting in a huge supply to demand gap within the district which could lead to either higher unemployment levels or force the people to move out of the district for employment.

Another important point to be noted here is that this is coupled by a huge projected shortfall in the skilled and highly skilled categories as against their respective demand. Though, this presents with an opportunity for the minimally skilled and semi skilled people to be trained so that they can fill the gaps at the skilled and highly skilled levels.

Figure 159: Skill wise incremental demand and supply in Haveri district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on the diagnostics above and our discussions with the key stakeholders in the district, we have identified sectors which will be the employment growth engines in the district in the next five years and will have skill training requirements.

Agriculture and agriculture related (chilli processing, sugar and cotton based industries) businesses have been and will continue to be the main stay of Haveri's economy in the next three to five years with further investments in the food processing sector. But the lack of development within the district has now turned in its favour with a lot of corporates evincing interest in investing in the district. The major investments (based on the MoUs and EoIs signed during GIM 2010 and GIM 2012) will be seen in the sectors of:-

- Power (Gas based and Bio mass based plants)
- Synthetic textile
- Steel

- Food Processing
- Cotton processing
- Chemicals

Though it is a matter of another four to five years for any of the proposed plants to be setup and commence production, in the interim, it provides for a huge opportunity in the construction space – especially industrial (plant) construction within the district. The main sub-sector to be focused upon here is the construction of power plants which have been known to be employment generators.

NSDC has conducted skill mapping studies across 19 high growth sectors earlier. Of those, only 'building, construction industry and real estate services', 'textiles and clothing' and 'food processing' exists in Haveri district. In addition, agriculture will continue to remain a major employment provider.

Sector comparison of Haveri with Karnataka is given in Table 283 below.

Table 283: Sectors present in Haveri district – comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Haveri	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 284: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Building, Construction industry and Real Estate services		√	√
Food Processing	√		√
Textiles and clothing industry			√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Building, Construction and Real Estate

Currently, there is no significant construction activity undertaken within the district of Haveri. But with the focus of the Karnataka Government to encourage investments in the district and the number of MoUs and EoIs signed during the GIM 2012, the outlook for this sector in the field of industrial construction looks very promising over the next five years. Once such investments materialise, it will create a domino effect with further Government expenditure in improving the infrastructure within the district – roads, water supply, electricity etc.

As the industry is at its infant stages, no particular skill gaps can be identified. Instead a study is made into the future demand for various skill sets and competencies which need to be built upon today:-

Table 285: Skill gaps in Building, Construction and Real Estate services in Haveri district

Role, educational qualification	Expected competency

Role, educational qualification	Expected competency
Project Manager (Post Graduate with relevant experience of 3 to 5 years)	▪ Managing all the facilities and the functioning of the work-force. ▪ Basic knowledge of construction equipment ▪ Ability to understand technical drawings and thus the project design ▪ Basic understanding of hydraulics electrical knowledge and piping ▪ Ability to ensure compliance to construction approvals and laws and understand legal issues associated with the industry ▪ Ability to manage costs, quality and ensure on-time delivery of project ▪ Sufficient knowledge of the local language to be able to communicate with contractors and labourers ▪ Ability to effectively manage contractors and ensure that contract specifications are being met ▪ Ability to ensure that safety and health norms are adhered to. ▪ Ability to articulate project objectives to team members, coordinate and motivate the site team
Supervisors/ Project Engineer (Engineer graduates)	▪ Knowledge of construction equipment and their functions and the ability to ensure that the equipment is maintained as per standards. ▪ Basic technical knowhow related to various aspects of construction including architecture, electrical wiring, plumbing etc. ▪ Ability to communicate effectively with all workmen and resolve disputes as and when they arise. ▪ Ability to manage skilled and unskilled workmen and allocate work properly to all. ▪ Ability to schedule preventive maintenance activities and undertake breakdown maintenance. ▪ Ability to communicate and implement safe practices. ▪ Understanding of legal issues associated with the industry.

Role, educational qualification	Expected competency
Skilled worker – Mason, Carpenter, Bar bender, Electrician, Plumber etc. (ITI students or 10th to 12th pass with relevant experience of 2 to 3 years)	▪ Complete technical knowledge of relevant field. ▪ Ability to operate key equipment, for example cranes. ▪ Knowledge of construction specific areas, example - there is a need for carpenters engaged in the Construction industry to be aware of lining, levelling, and finishing skills. ▪ Understand machine operations and basic machine troubleshooting. ▪ Ability to comply with safety and quality measures. ▪ Basic knowledge of construction engineering. ▪ Ability to communicate and coordinate with unskilled workmen effectively.
Land Acquisition Executive / Personnel (Graduate with experience in real estate /construction space)	▪ Strong liaisoning and negotiation skills – i.e. the ability to maintain good relations with local and controlling authorities ▪ Ability to study legal papers and check the property accordingly. ▪ Ability to understand and comply with local Government procedures related to land procurement ▪ Ability to liaison with land owners, government bodies, village authorities, property dealers, etc. to identify sources of land ▪ Strong written and oral communication skills to be able to interact with different land owners (private/Government) ▪ Ability to understand overall dimensions of land, the topography, etc. including aspects like requirement for roads/pathways, pavements, resulting wastage etc ▪ Purchase of land after rate negotiation

5.2. Food Processing

Haveri is known as the 'Chilli district of Karnataka'. In fact, Byadgi chillies are famous throughout the country. The business involving Byadgi chillis has the second largest turnover among all chilli varieties of India. Oil (oleoresin) extracted from these chillies is used in the preparation of nail polish and lipsticks. Byadgi chilli is also known for its deep red colour and is less spicy and is used in many food preparations

of South India. Some of the major companies in the chilli processing business are Synthete Industrial Chemicals Limited, Kancor Colours Limited etc.

The other area within food processing which has seen growth of industries as well as proposed future investment is processing of meat products. Venkateswara Hatcheries Private Limited already has a huge presence in this segment. During the Global Investors Meet (GIM) of 2010, an MoU was also signed between Government and Venkateswara Hatcheries for an additional investment of Rs. 42.25 crore for further expansion of current facilities.

Byadgi Chilli Farm

Figure 24 given below explains the value chain of the chilli processing industry. The entire value chain of the process exists in Haveri district.

Figure 160: Value chain in Chilli processing industry

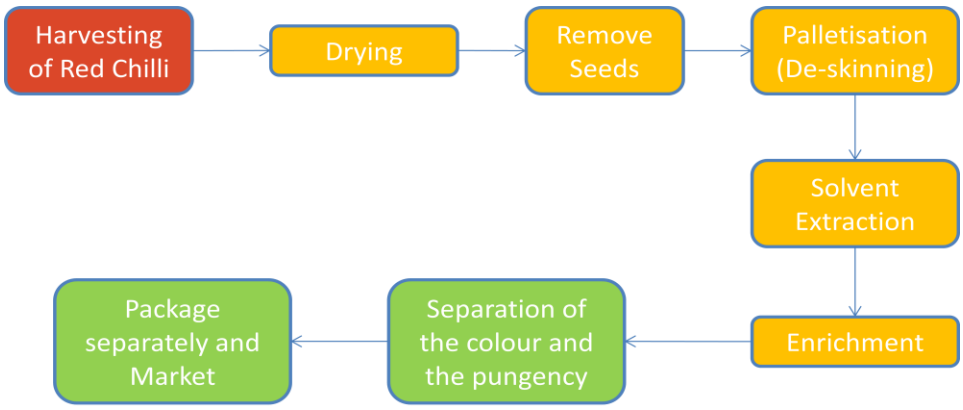


Table 286: Skill gaps in Food processing industry in Haveri district

Role, educational qualification	Expected competency	Skill gaps
Farm Worker – Chilli (Illiterate)	▪ Knowledge of the entire process of growing the crops from seeding to harvesting. ▪ Ability to quickly harvest them at the right time. ▪ Ability to properly use fartilizers and manures – right quantity and right way of delivering. ▪ Ability to use various machines during various processes of farming. ▪ Understanding of safety hazards ▪ Ability to put the chillies to dry after harvesting.	▪ No knowledge of safety hazards. ▪ Lack of knowledge in proper use of fertilizers ▪ Lack of knowledge of chilli drying process.
Machine Operator – processing of chilli / meat (10th pass to 12 pass with experience)	▪ Basic understanding of the whole chilli / meat processing procedures. ▪ Ability to handle the machines used for palletisation, spice extraction etc. ▪ Ability to identify difference in quality of output. ▪ Expertise in particular machine being handled by the said operator. ▪ Ability to communicate clearly on the shop floor with co-workers and Manager ▪ Knowledge of safety hazards.	▪ Even those who are trained before the job have to be re-trained, especially on running of machines, as the training institutes do not have good machine infrastructure. ▪ Lack of effective communication skills. ▪ Lack of knowledge of safety hazards.

Role, educational qualification	Expected competency	Skill gaps
Manager / supervisor / Factory-shop floor in charge (Graduate with 3 to 5 years of experience)	▪ Managing all the facilities and the functioning of the work-force. ▪ Supervising of the work conducted by operators / workers and conducting quality checks. ▪ Knowledge of machine operations in the processing. ▪ Ability to undertake inspection, production planning and control. ▪ In-depth knowledge of production processes and inspection methods. ▪ Leadership skills	▪ Most of the managerial / supervisory staff is hired from Bengaluru, Mumbai etc. as people with such skills are not available in Haveri district. ▪ Lacks people management skills ▪ Lacks quality control skills
Food Inspection (Quality control) executive (Graduate and Post Graduates with degrees in Food Technology)	▪ Ability to inspect the output (chilli pungent, sausage meat etc) and adjudge for quality. ▪ Ability to check for quality adherence ▪ Technical know-how of foods being processed. ▪ Ability to understand and prevent defects.	▪ Very few people available who are food technologists. ▪ On-the job training provided as such skills are lacking in persons trained at training institutes.

Source: IMaCS Analysis

5.3. Textiles and clothing industry

As compare to other districts within Karnataka, Haveri has various industrial units which focus on the upward stream processes of creating fibres out of both natural material like cotton as well as man-made ones. The major companies in this segment are Grasim Industries Limited, Harihar Polyfibres Limited, Fortune Cotton and Agro industries limited and a Government sponsored cooperative called Raitara Sahakari Nulin Girani. Together these companies employ about 2,300 to 2,500 people from the district, varying upon the season and availability of cotton bales.

Grasim and Harihar manufacture a product called Viscose Staple Fibre (VSF), a man-made, biodegradable fibre with quite similar to cotton in its feel. VSF is manufactured using rayon grade pulp which too is manufactured at Harihar polyfibres.

Figure 24 given below explains the value chain of the textile and clothing industry. Of the entire value chain, only the circled part (garments) exists in Haveri district.

Figure 161: Value chain in textiles and clothing industry

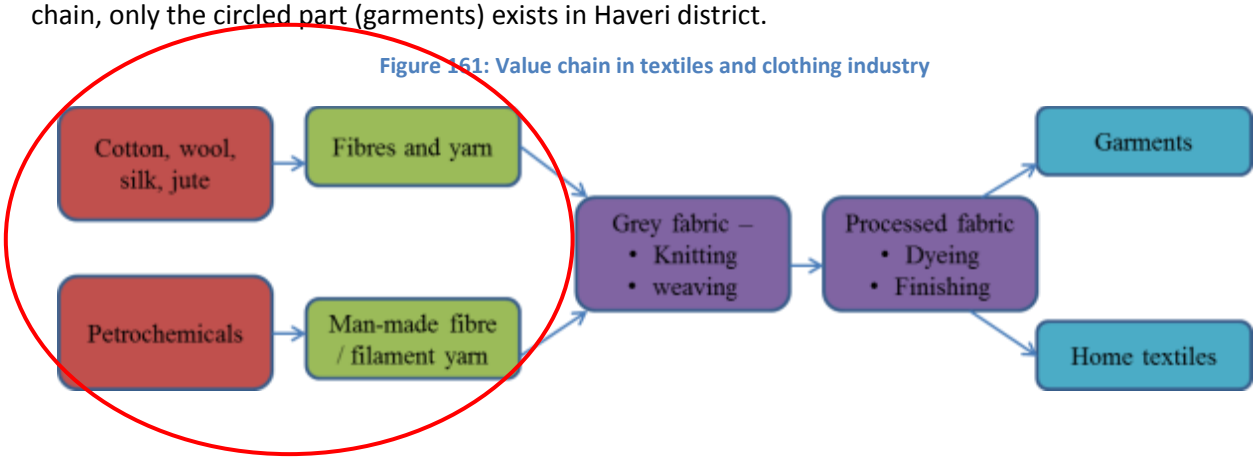


Table 287: Skill gaps in textiles and apparel in Haveri district

Role, educational qualification	Expected competency	Skill gaps
Manager / supervisor / floor in-charge (Graduate)	▪ Ability to oversee plant operations ▪ Man management and good communication skills to manage shop floor workers who are mostly minimally educated. ▪ Ability to oversee / train operators to man the machines. ▪ Technical competence- Very strong understanding of all aspects of the yarn making process. ▪ Awareness of quality requirements of the	▪ Lack of man-management skills to manage shop floor personnel. ▪ Inadequate practical knowledge of tools ▪ Most of the managerial / supervisory staff are hired from bigger cities like Bengaluru, Mumbai, Pune etc. as people with such skills are not available within the district

Role, educational qualification	Expected competency	Skill gaps
	yarn across various stages of production. ▪ Process improvement skills - waste control, finding solutions to maintenance and engineering related problems as most of the units do not have a dedicated R&D for process improvement. (Yarns are a commodity product which leads to thin margins for the producers. Cost reduction through above mentioned measures helps improve profitability)	
Operators (10^{th} to 12^{th} pass, with experience in machine operation)	▪ Operating knowledge of the machines. ▪ Ability to ensure that machine stoppage time in minimal ▪ Should be able to read gauges, dials, or other indicators to make sure a machine is working properly. ▪ Ability to work on different machines within the plant. ▪ Discipline at shop floor, punctuality and regular attendance at workplace. ▪ Adherence to cleaning and machine maintenance schedule. ▪ Understanding of support to be provided for maintenance of various textile machines. ▪ Ability to communicate clearly with the	▪ Knowledge/ Skill confined to single or few machines ▪ Lack of knowledge of compliance to quality ▪ Inadequate ability to multitask between different types of machines. ▪ Lack of proper communication skills.

Role, educational qualification	Expected competency	Skill gaps
	shop floor manager. ▪ Ability to comply with quality norms	
Quality control executive (Graduate and with some experience in garment industry)	▪ Understand the quality requirements of the yarn in terms of "count", breakage during weaving etc. ▪ Understanding of the quality parameters across the various stages of assembly line. ▪ Knowledge of the cause of various defects ▪ Act promptly and liason with production to minimise quality issues	▪ On-the job training provided as such skills are lacking in persons trained at training institutes and usually come from experience only. ▪ Lack of knowledge of cause effect relationships for various defects.

Source: IMaCS Analysis

6. Recommendations

Recommendations for Haveri district center on the sectors identified above: - 'Building, Construction and Real Estate', 'Food processing' and 'Textile and clothing' industries. The recommendations will focus on action points for the both the Government and the private sector resulting in skill development.

A summary of all recommendations has been collated in the below table followed by detailed recommendations for each of the above mentioned sectors:-

Table 288: Summary of Recommendations made for Haveri district

Sector	Recommendations to the Government	Recommendations to the private sector / NSDC	Recommendations to the Industry
Agriculture and Allied	• Improve irrigation	NA	NA

Sector	Recommendations to the Government	Recommendations to the private sector / NSDC	Recommendations to the Industry
activities	facilities in the district • Help farmers increase their produce by providing training in farming techniques as well as supporting through better farm equipment, seeds etc.		
Building, Construction and Real Estate	• Setup a skill training institute for construction trades. • Create construction specific trades to be taught at the existing ITIs. • The Government should also look to encourage private players, even employers to conduct training in the sector.	• Target the skill sets as required by the supervisor and above category and other specialised skill sets: – Surveying – Land acquisition skills – Project Management skills – Labour laws	• Partner with the State and District level Governments as well as private training institutes in introducing construction sector related trades or courses.
Food Processing	• The Government should look to introduce sector specific courses within the government colleges in the district:- – B. Sc. Agriculture – B. Tech. Agriculture Engineering – Certification in Chilli farming and drying	• Private players may focus on specific needs of the food processing industry like: – Sensory and instrumental methods in texture analysis of processed foods – Basics of flour milling with focus on quality	• Setup further food processing units across various other kinds of foods, especially which can be based out of the main crops grown within the district. • Tie-up with educational institutes to deliver industry specific courses

Sector	Recommendations to the Government	Recommendations to the private sector / NSDC	Recommendations to the Industry
	– B. Tech Food Process Engineering etc.	and safety aspects of flour – Essentials of packaging technology for distribution and marketing of food products etc.	in food technology and subsequently provide internships for better practical learning.
Textile and clothing	▪ NA	▪ Private players may look at various upskilling programs like:- – Project management – Team management – Quality Control in Cotton Ginning – Waste minimization – Executive Development Programme in HRD techniques, financial management, product innovation etc.	NA

6.1. Agriculture and Allied activities

This sector alone employs close to 75 per cent of the working population of the district. Of the 485,000 hectare of the geographical area of the district, 360,030 hectare is under cultivation with jowar, cotton, rice, chillies, gram, groundnut, sunflower, sugarcane, and oilseeds being the major crops of the district.

Agriculture and agriculture related (chilli processing, sugar and cotton based industries) businesses will continue to be the main stay of Haveri's economy in the next three to five years with further investments in the food processing sector. The recommendations for agriculture are as follows:-

Government

Inspite of being endowed with four main rivers, the district severely lacks proper irrigation facilities. This is in effect affecting the lives of the farmers who have to depend on rainfall alone for their water needs. Thus there is a serious and urgent need for the State Government to take immediate measures in order to improve the irrigation facilities in the district.

Also, the district famous for the Byadgi chilli, is seeing major investments in chilli processing with a spice park too being announced for the district within the Byadgi taluk, spread over an area of 120 acres. Hence it is necessary from the Government's end to provide the necessary support at the farming level too by educating the farmers on better ways of farming, providing better seeds, farming equipment etc in order to increase the production of chilli across the district.

6.2. Building, Construction Industry and Real Estate Services

As explained earlier, though the sector is very small in size right now (within Haveri district), there is tremendous growth potential over a period of next five years. Also, currently there are no training institutes or courses within the district which focus on this sector. There is considerable need for a push in training of construction workers from the Government's end as unlike other sectors, the workmen for whom the training is intended come from a very poor economic background and do not have the means to pay for any such training.

Government

The immediate need is to setup a formal training infrastructure by the Government in this space also to give support to various private players who want to be able to provide skilling programs within the construction domain. The steps to be undertaken by the Government within Haveri district include:-

- Setup a skill training institute which addresses the skill needs of the bottom of the pyramid workmen – masons, carpenters, bar bender etc.
- Create construction specific trades to be taught at the existing ITIs. These could be courses related to architecture, masonry, plumbing etc. The Government should also look to increase

the number of seats in trades like electrician as the demand for same would also increase from the construction phase.

- The Government should also look at other means of encouraging implementation of training programs especially by the private players, for e.g.- subsidising various training programs to be implemented by various private players, even employers.

Private players

It is practically not feasible for private players to provide training to the entry level construction workers unless the course fees are subsidised or sponsored by any third party (including Government). Thus it makes sense only to target lower and middle level management of construction organisations and at niche roles within the sector like land acquisition specialists – a skill set which is of high importance in industrial construction activity:-

- Target the skill sets as required by the supervisor and above category and other specialised skill sets:
  - Surveying
  - Land acquisition skills
  - Project Management skills
  - Labour laws
  - Safety management
- Budgeting and cost control etc.

Industry

With the growth of the building and construction industry within the district, the demand for additional man power will only be met by using up the seasonal labour available out of the agriculture sector. It is therefore very important for the industry to ensure that the man power it will eventually hire is of the desired quality.

The need of the sector is to partner with the State and District level Government machinery as well as private training institutes in introducing construction sector related trades or courses. This could be done by partnering with ITIs, colleges, other technical institutes as well as private training providers.

6.3. Food Processing

More than 75 per cent of the working population in Haveri are dependent on agriculture or agro based industries. A strong agrarian economy also translates into huge opportunities for the food processing industry. In Haveri, the main cash crop in chilli which has therefore helped setup companies involved in downstream activities of chilli processing within the district.

In order to support the existing companies in this segment as well as to encourage more companies to set up shop in the district, it is essential to create an educational infrastructure to address the training and skilling needs of the sector:-

Government

The Government should look to use existing government college infrastructure to offer additional full time structured courses in agricultural practices and food processing like:-

- B. Sc. Agriculture
- B. Tech. Agriculture Engineering
- Certification in Chilli farming and drying
- B. Tech Food Process Engineering
- Bachelor of Science / Engineering in Food Technology
- Master of Science / Engineering in Food Technology
- Food Safety and Standards

Private players

The size of the sector when compared to other districts is still relatively smaller and hence it does not make commercial sense for private players to make huge investments to setup colleges or universities. There is a need for various short term courses which focus on specific needs of the food processing industry, which the private training companies may currently focus on like:

- Sensory and instrumental methods in texture analysis of processed foods
- Basics of flour milling with focus on quality and safety aspects of flour
- Essentials of packaging technology for distribution and marketing of food products
- Concepts of hygiene and quality in processing of meat and meat products
- Scientific practices in animal and cell model studies

- Drying of food products: Principles, practices and industrial applications

Industry

The sector has seen a tremendous amount of growth within the district in the last five years itself. Haveri has caught the attention of various players in the food processing industry who are now willing to put up their investments or even expand on their current facilities. With the advent of the proposed spice park in the district, this process will hasten even further especially for chilli processing. The recommendations for the industry are thus:-

- Setup further food processing units across various other kinds of foods, especially which can be based out of the main crops grown within the district.
- Partner with various colleges and educational institutes in order to deliver the industry specific courses like Bachelor or Masters of Science / Engineering in Food Technology, Certification in Food Safety and Standards etc. This should involve internship opportunities at various food processing companies within the district in order to ensure sufficient practical exposure and subsequent employment at the companies.

6.4. Textile and clothing industry

Haveri has capabilities in creation of textile yarn using both natural fibres like cotton as well as man-made ones like VSF. These industries face problems in terms of getting the quality manpower from within the district and hence look to satisfy their hiring needs from adjoining districts and in some cases from outside of the state too. Also, there is a need to up-skill the existing man power within all of the companies in the sector like Grasim Industries Limited, Harihar Polyfibres Limited, Fortune Cotton and Agro Industries Limited etc. These companies also need entry level skilled personnel for various support jobs within the company – like electricians, plumbers etc.

Training in this sector should primarily focus on various upskilling programs which can be imparted by the private players in the space:-

Private players

The private players may look at various upskilling programs which focus on project / people management as well as those skill sets unique to the industry. The training could be imparted as a

corporate training exercise and by tying up with the industry players to needed correct curriculum is delivered:-

- Project management
- Team management
- Quality Control in Cotton Ginning
- Waste minimization
- Executive Development Programme in HRD techniques, financial management, product innovation etc.
- Soft skills and communication skills training
- Quality and Environment management systems

3.19. KODAGU

1. Introduction

Kodagu, also known by its anglicised former name of Coorg, is an administrative district in Karnataka located in the Western Ghats of South-western Karnataka. The district is bordered by Dakshina Kannada district to the northwest, Hassan district to the north, Mysore district to the east Kerala to the south. Kodagu is well known in the world for coffee.

Kodagu district has an area of 4,102 square kilometres and a population density of just 135 persons per square kilometres. It is divided into three sub-districts – Madikeri, Somwarpet and Virajpet and has 291 villages which are inhabited. Majority of the population at 86.3 per cent lives in rural areas. Other workers[1] are major class of the workers in the district, employing 86.8 per cent of the labour force (as of Census 2001) followed by agricultural workers (including cultivators) at 12.2 per cent and household industry at just one per cent.

Madikeri is the headquarters of Kodagu. It is situated 3,484 feet above the sea level and is one of the popular tourist destinations. It lies on the Karnataka State Highway 88 that runs from Mysore to Mangalore. It is 120 km from Mysore and 136 km from Mangalore.

Coffee, paddy and spices like cardamom and pepper are the key crops grown in the district. This has led to setting up of many coffee and spice processing units in the district. In the last five to six years Coorg

has become a major tourist destination thus creating further opportunities in the region for employment.

Table 289: Comparison of Kodagu district with Karnataka – key indicators

Indicator	Year	Kodagu	Karnataka
Area, in sq.km.	2001	4,102	191,791
Percentage share in State geographical area, %	2001	2.1%	100%
No. of sub-districts	2011	3	175
No. of inhabited villages	2001	291	27,481
No. of households	2001	130,110	10,401,918
Forest area as a % of total geographical area	2001	32.8%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Kodagu district has a population of 5.5 lakh persons – 0.9 per cent of the State population making it the least populous district in the state. Majority of the population (37.5 per cent) is concentrated in Somwarpet sub-district, followed closely by Virajpet sub-district at 36.6 per cent and Madikeri sub-district at 25.9 per cent. While 66.5 per cent of the population in the district is in working-age group (15 to 64 years), about 48.6 per cent is actually working i.e. work participation rate.

The district's literacy rate is 82.5 per cent, which is higher than the State average of 75.6 per cent as well as the All-India average of 74 per cent. Male literacy at 87.2 per cent is significantly higher than female literacy rate at 77.9 per cent. Of the 30 districts, Kodagu ranks fourth on Gender Development Index (GDI), with a value of 0.690.

Most of the population (87.3 per cent) lives in rural areas. In fact, as mentioned earlier, working in coffee and spice plantations is the main occupation of the people of the district.

Table 290: Key demographic indicators

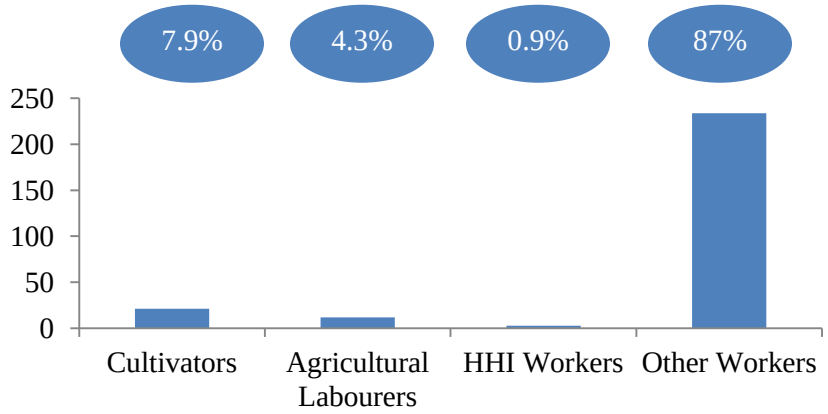
Indicator	Year	Kodagu	Karnataka
Population, No.	2011	554,762	61,130,704
Decadal growth rate of population, %	2001-11	1.1%	15.7%
District's share in State's population, %	2011	0.9%	100%
Urban population as a percentage of total population, %	2001	13.7%	34%
SC population, %	2001	12.3%	16.0%
ST population, %	2001	8.4%	7.0%
Sex ratio, No. of females per 1000 males	2011	1,019	968
Population density, per sq. km.	2011	135	319
Literacy rate, %	2011	82.5%	75.6%
Main workers, No.	2001	247,574	19,364,759
Marginal workers, No.	2001	18,804	4,170,032
Working age population* as a percentage of total population, %	2001	66.5%	63%
Work participation rate^, %	2001	48.6%	45%
HDI	2001	0.697	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 2.7 lakh persons. Of this, 7.9 per cent are cultivators, 4.3 per cent are agricultural labourers, one per cent are workers in household industry and 87 per cent are other workers.

Figure 162: Kodagu district's worker profile, as of 2011, in thousands

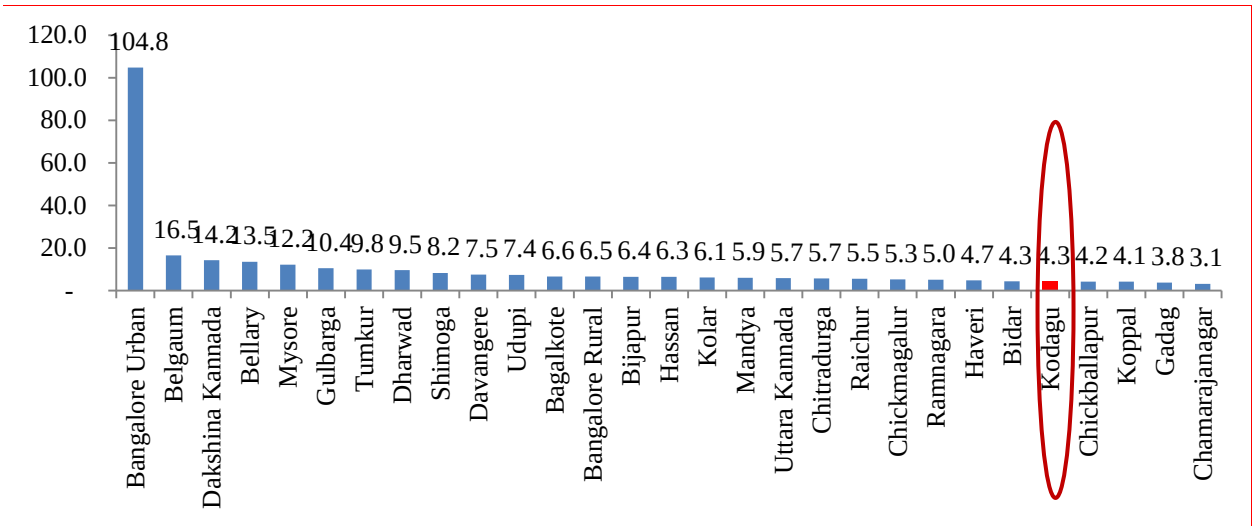


HHI: Household Industry; Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Kodagu district had a Gross District Domestic Product (GDDP) in Karnataka of Rs 4,308.20 crore (1.4 per cent of the Gross State Domestic Product). In terms of per capita GDDP though, it ranked second amongst 30 districts at Rs 71,648. This was much higher than the State average of Rs 53,101. This is primarily because of existence of coffee cultivation and processing activities in the district.

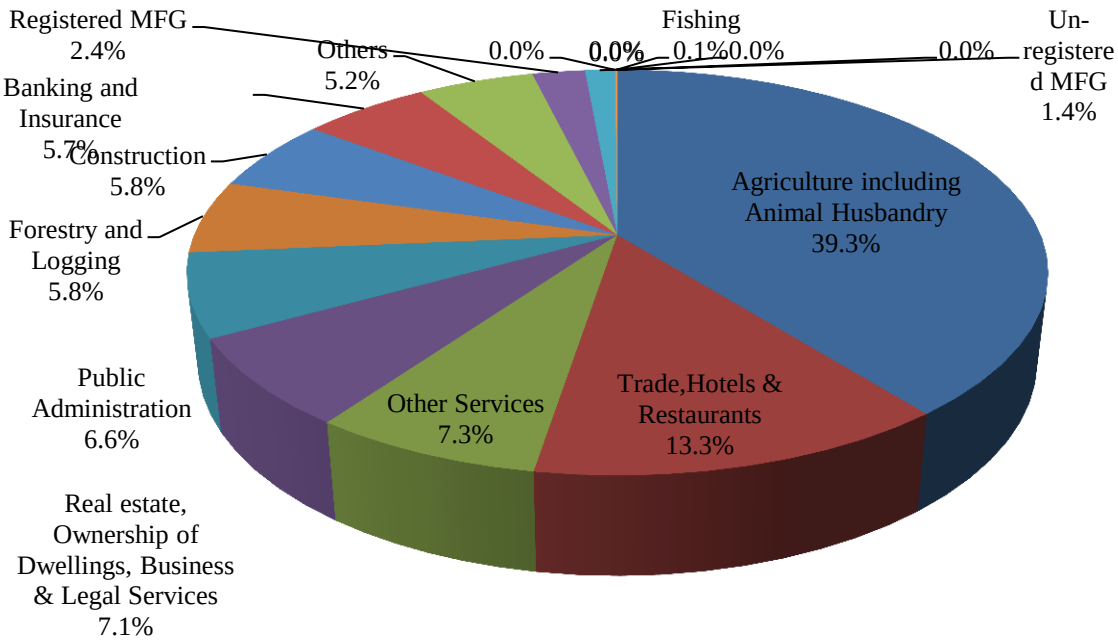
Figure 163: Gross District Domestic Product, in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is both an agriculture based and service based, because of the existence of two dominant sectors – plantations and tourism. The service sector's share in GDDP was at about 51 per cent in 2008-09 followed by primary sector at 45 per cent and secondary sector at four per cent.

Figure 164: Sector wise distribution of Kodagu's GDDP, as of 2008-09, 100% = Rs 4,308.20 crore



Source: Kodagu District At a Glance 2009-10

Agriculture: Of the total area of 4,102 sq. km. in the district, over 40 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by paddy under food crops and coffee and spices under plantation crops. For details of crops grown in Kodagu district, refer to annexures.

Industry: The only notable industry in the region is Tata Coffee. Tata Coffee owns 17 coffee plantations and two tea plantations in the district. They also have their own curing works facility at Kushalnagar, Kodagu district in Karnataka, with an installed capacity of 20,000 metric tons. Overall, Tata coffee employs about 3,500 people on a permanent basis within the company and an additional 5,000 people during the picking season.

Kodagu also has 1,500 Small Scale Industries (SSIs), employing 7,841 persons. As of March 2010, majority of these were food and intoxicants based industries at 37.6 per cent, followed by textile based industries at 21.4 per cent, engineering based industries at 8.3 per cent, wood based industries at 6.5 per cent and remaining in others. Refer to annexures for details. The district has one industrial area in Kushalnagar of a size of 250 acres of land.

Kodagu district is attracting significant investments in the tourism space. During the Global Investors Meet (GIM) held in 2010 in Karnataka, two Memorandums of Understanding (MoUs) amounting to Rs 52.7 crore were signed for the district. Once set up, these are estimated to employ about 480 persons. Both projects are currently awaiting land related clearances. For detailed status of these projects, refer to annexures.

Services: The services sector includes hotels and restaurants, real estate, ownership of dwellings, business & legal services, banking and insurance, public administration and other services. As mentioned above, services account for 51 per cent of GDDP in Kodagu district. Of all the services, the key services in the district are of 'Hotels and Restaurants' at 13.3 per cent of GDDP, followed by other services at seven per cent and real estate, ownership of dwellings, business & legal services at seven per cent.

2.3. State of education

As of March 2010, Kodagu district had 669 schools, with 89,133 students enrolled. The drop-out rate was 1.12 per cent both for lower and higher primary schools. This is much lower than the State average of 4.6 per cent for lower primary and 8.1 per cent for higher primary schools.

There are 49 pre-university (PU) colleges with 10,367 students. There are also 10 general colleges, two polytechnic colleges (for technical education), two engineering colleges and one dental college. For details of courses offered by polytechnics, refer to annexures.

Table 291: School education infrastructure in Kodagu district, as of March 2011

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Govt.	147	25,830	280	11,888	53	9,953
Aided	1	3,049	11	1,640	48	10,334
Unaided	15	16,379	81	5,635	66	7,000
Total	163	45,258	372	19,163	167	27,287

Source: District Information for School Education, Karnataka, 2011-12

Table 292: Higher education infrastructure in Kodagu district, as of March 2010

Colleges	No.	Students
PU Colleges	49	10,367
General	10	4,283
Polytechnic	2	1,205
Engineering	2	1,342
Dental	1	286

Source: Kodagu District At a Glance 2009-10

For vocational training, Kodagu district had eight Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, eight were Government ITIs, 11 were private aided ITIs and remaining 46 were private unaided ITIs. All the 8 ITIs together have a seating capacity of 963.

Table 293: Key ITI indicators in Kodagu district, as of March 2012

Indicator	Value
Total Number of ITIs	8
Number of Government ITIs	3
Number of Private aided ITIs	1
Number of Private unaided ITIs	4
Total Seating capacity	963
Student pass rate	80 to 85%
Student drop-out rate	5 to 7%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Kodagu district, we have found that on an average, of all the students that pass out from an ITI in each year, 80 per cent find jobs in the market. For details on courses offered by ITIs in Kodagu, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions. While the Government Department offer courses in trades like agriculture status (soil, crops etc.), technical health, mental health, teacher education and evaluation, policy planning, personality development, information act etc. the private training institutes are mainly offering teacher training, nursing and computer related courses. For details of training institutes and courses offered, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Kodagu district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- Since the students are not able to find good colleges of their choice they move to Mangalore, Mysore or Bangalore for better opportunities. Once they move out of the district they look for jobs outside and do not come back to the district.
- Students from poor economic as well as academic background get admitted to ITIs in order to make themselves job worthy. But these students face problems in terms of finding jobs within the district as there is very little industrialisation and hence have to eventually move out.
- These students have a preference to work for public sector companies or even Government departments over private jobs.
- The training institutes in Kodagu seriously lack modern machinery and infrastructure for training and thus students are not exposed to any kind of practical environment.
- The technically trained students do no mind switching over to a service sector job especially in the tourism industry.

3. Developmental concerns

Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Inadequate educational infrastructure:** Students from the district have to migrate to other nearby districts in order to complete their higher studies. The district is deficient in terms of educational infrastructure especially in the higher education (Graduation and above). A simple comparison of number of schools and students enrolled at each level proves this:-

Table 294: Education infrastructure in Kodagu district, as of March 2010

Colleges	Number of institutes	Number of Students
Colleges	13	5,911
Polytechnic	2	1,205
ITIs	8	963

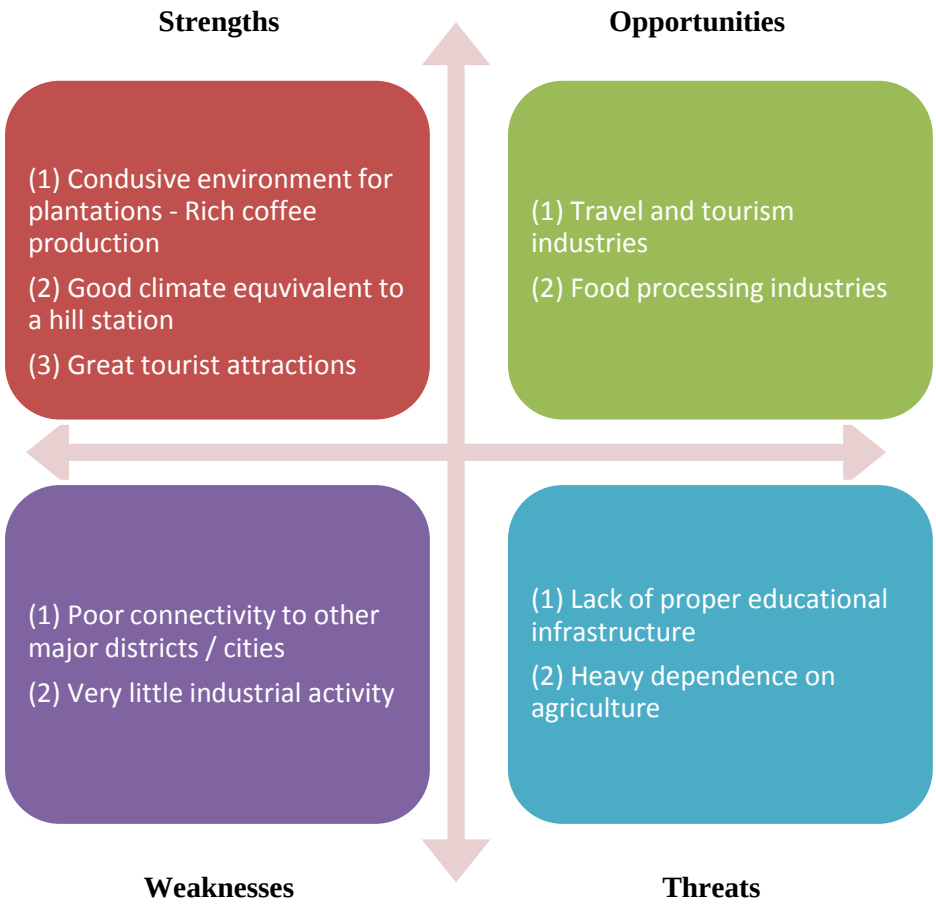
Source: Kodagu District At a Glance 2009-10

For any district to attract industrial and service sector based investments, it is essential to have good educational infrastructure which can churn out good numbers of skilled individuals. A case in point is Mangalore, where the existence of good medical colleges is in turn encouraging the growth of the healthcare services industry in the district. There is thus, a very serious and urgent need to setup further educational institutes – varied across different skill sets.

SWOT analysis

Based on the diagnostics of the Kodagu district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 165: SWOT Analysis of Kodagu district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 1.09 lakh persons is likely to be generated in Kodagu district.

Travel, tourism and hospitality and agriculture and allied (mainly coffee plantations) have the largest potential in the district. This will be followed by Building, Construction industry and Real Estate sector, Healthcare services, etc. Within agriculture and allied, thrust will be on the plantation activities (coffee, tea and spices) as has been historically seen.

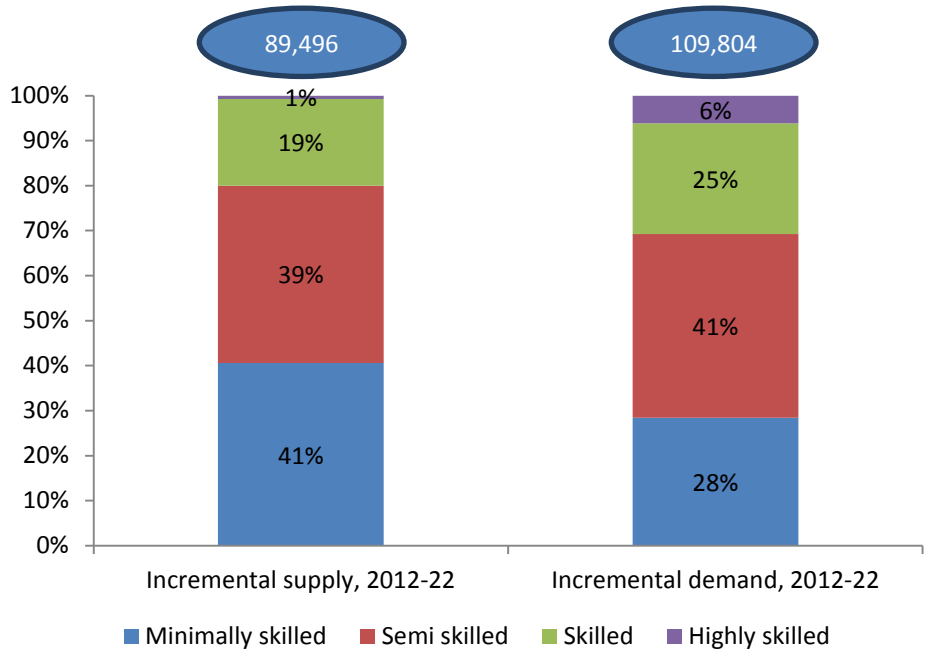
Table 295: Incremental demand in Kodagu – 2012 to 2022

SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	34,198	28,482	4,257	775	684
BFSI	5,143	-	3,086	1,543	514
Building, Construction industry and Real Estate	11,748	3,524	5,874	1,762	587
Construction Materials and Building Hardware	730	73	474	146	36
Education and Skill Development	3,460	-	-	3,114	346
Food Processing	2,963	889	889	889	296
Furniture and Furnishings	63	25	25	9	3
Healthcare Services	12,360	-	1,236	8,652	2,472
Textile and Clothing	3,745	749	2,247	562	187
Transportation, Logistics, Warehousing and Packaging	6,262	1,252	3,632	1,252	125
Tourism, Travel, Hospitality & Trade	29,088	5,818	19,780	2,909	582
Unorganised	44	9	25	9	1
Total	**109,804**	**40,821**	**41,525**	**21,622**	**5,835**

Source: IMaCS Analysis Includes plantation workers.Sector total might not add up to the 'Total' as sectors such as furniture and furnishings and unorganized sectors had very small values and were not included in the table above.*

The incremental supply of work-force between 2012 and 2022 is estimated at 0.89 lakh persons. This implies a man power crunch to be seen in the coming few years especially in the minimally skilled and semi-skilled categories.

Figure 166: Skill wise incremental demand and supply in Kodagu district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on the diagnostics above and our discussions with the key stakeholders in the district, we have identified sectors which will be the employment growth engines in the district in the next five years and will have skill training requirements. While agriculture will continue to be the biggest employer, additional employment will be generated from non-agricultural sectors only.

Within non-agricultural sectors, as discussed above, Kodagu district has great potential as a tourist destination. Over the years, Coorg has already established itself as a preferred tourist location through the presence of good resorts like Orange county and Mahindra resorts. There is a unique opportunity for eco tourism of combining its strengths of plantation to its image as a hill station destination.

NSDC has conducted skill mapping studies across 19 high growth sectors earlier. Of those, only 'travel and tourism' and 'food processing (including plantation)' exists in Kodagu district. In addition, agriculture will continue to remain a major employment provider. Sector comparison of Kodagu with Karnataka is given in Table 9 below.

Table 296: Sectors present in Kodagu district – comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Kodagu	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 297: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Food Processing (including plantations)	√	√	√
Travel and Tourism		√	√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Plantations and Food Processing

As of March 2010, Kodagu district had 564 food and intoxicants based SSIs, employing 3,987 workers. This was the highest number of units and employment under any category in SSIs in Kodagu. This is essentially because of a strong coffee and spice plantation economy in the region. The most common plantation crop is coffee, especially Coffea Robusta variety. Kodagu accounts for about 25 to 30 per cent of coffee production in the country. Coffee revenue has in fact helped Kodagu to become one the richest districts in India. The Coffea Arabica variety is also grown in some parts of southern and western Kodagu, the historical area of coffee production. The average daily number of people employed in this sector in Kodagu was 2.54 lakh people in 2009-10. Tata coffee has its own curing works facility with an installed capacity of 20,000 metric tons.

Spice cultivation is the next major activity in plantations. The spices grown include mainly pepper and cardamom. The spices are grown in conjunction to coffee but there not many spice processing units within the district.

Coffee plantations (and ripened coffee berries) in Kodagu

Figure 24 given below explains the value chain of the coffee processing right from the plantation stage to the curing, packaging and marketing stage. The entire value chain exists in Kodagu district. Within the spice processing industry, the value chain followed in Kodagu district is given in Figure 7 below.

Figure 167: Value chain in coffee processing industry

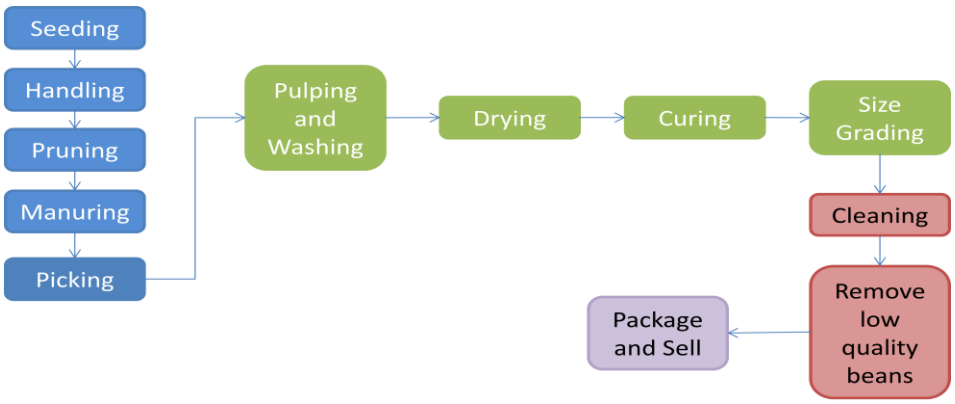


Figure 168: Value chain in spice processing industry – present in Kodagu district

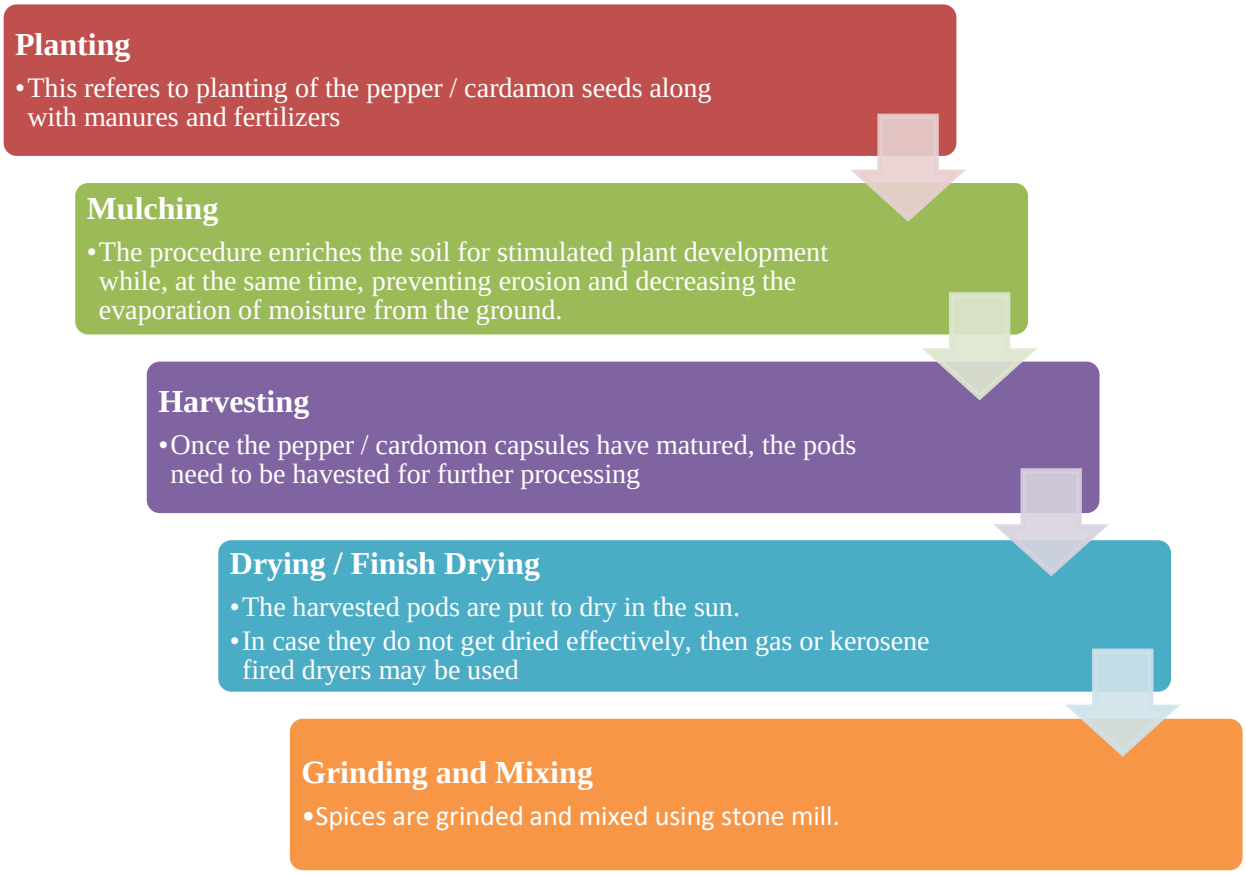


Table 298: Skill gaps in food processing industry in Kodagu district

Role, educational qualification	Expected competency	Skill gaps
Farm Worker (Illiterate)	▪ Knowledge of the entire process of growing the crops from seeding to harvesting. ▪ Ability to recognised matured capsules / berries in order to harvest them at the right time. ▪ Ability to use various machines during various processes of farming. ▪ Ability to finish the harvesting of crops quickly. ▪ Understanding of safety hazards ▪ Trained to use adequate amount of manure / fertilizers only.	▪ Inability to recognise the correct time for harvesting ▪ No knowledge of safety hazards. ▪ Lack of exposure to various machines used in each process of the crop growth.
Machine Operator – processing of coffee / spices (10th pass to 12 pass with experience)	▪ Basic understanding of the whole coffee / spice processing procedures. ▪ Ability to handle the machines used for drying, curing etc. ▪ Ability to identify different grades of the product during processing. ▪ Expertise in particular machine being handled by the said operator. ▪ Ability to communicate clearly on the shop floor with co-workers and Manager	▪ Even those who are trained before the job have to be re-trained, especially on running of machines, as the training institutes do not have good machine infrastructure. ▪ Inability to identify different grades of the product, thus affecting quality of output. ▪ Lack of effective communication skills.
Manager / supervisor /	▪ Managing all the facilities and the functioning of the work-force.	▪ Most of the managerial / supervisory staff is hired from

Role, educational qualification	Expected competency	Skill gaps
Factory-shop floor in charge (Graduate with 3 to 5 years of experience)	▪ Supervising of the work conducted by operators / workers and conducting quality checks. ▪ Knowledge of machine operations as well as grading of coffee / spices. ▪ Ability to undertake inspection, production planning and control. ▪ In-depth knowledge of production processes and inspection methods. ▪ Leadership skills	Bengaluru, as people with such skills are in scarcity in Kodagu district. ▪ Lacks people management skills ▪ Lack of machine operation knowledge.

Source: IMaCS Analysis

5.2. Travel, Tourism and Hospitality

Kodagu is rated as one of the top hill station destinations in India. Some of the most popular tourist attractions in Kodagu include:

Table 299: Major tourist spots in Kodagu district

Tourist Spot	Brief Description
Talakaveri	The place where the River Kaveri originates. The temple on the riverbanks here is dedicated to lord Brahma, and is one of only two temples dedicated to Brahma in India and Southeast Asia.
Abbey Falls	Abbi Falls is 6 Kms from Madikeri, where the Madikeri or Muttaramutta stream naturally falls from a precipice at a height of 70 feet in between huge boulders to a rocky valley. 'Abbi' in Kodava language means a waterfall.
Dubare	It is mainly an elephant-capturing and training camp of the Forest Department at the edge of Dubare forest; on the bank of the riverKaveri along the Kushalanagara - Siddapur road.
Nagarahole	It is a national park and wildlife resort.
Bhagamandala	It is situated at the confluence of two rivers, the Kaveri and the Kanika. A third river, the Sujyothi, is said to join from underground.

Tourist Spot	Brief Description
Dargah Sharief	The Holy Tomb, of Yemmemadu is one of the most sacred shrines for Muslims in Kodagu district. (35 km from Madikeri; Madikeri-Bettageri-Napoklu-Hale Taluku-Yemmemadu)
Omkareshwara Temple	A beautiful temple in Coorg. A legend is associated with the temple, built by Lingrajendra II in 1820 CE. The king put to death a pious Brahmin who dared to protest against his misdeeds. The spirit of the dead man began to plague the king day and night. On the advise of wise men, the king built this temple and installed a shivlinga procured from Kashi, North India.

Omkareshwar temple in Madikeri

Raja Seat

The supply chain as observed for the Tourism sector is:-

Figure 169: Tourism supply chain

Kodagu district is attracting significant investments in the tourism space. During the Global Investors Meet (GIM) held in 2010 in Karnataka, two Memorandums of Understanding (MoUs) amounting to Rs 52.7 crore were signed for the district.

Table 300: Skill gaps in the Travel, Tourism and Hospitality sector in Kodagu district

Role, educational qualification	Expected competency	Skill gaps
Front Desk Manager – Hotels (Graduate / Diploma in Hotel Management)	▪ Ability to maintain guest history and network. ▪ Facilitate smooth client check-ins and check-outs. ▪ Ability to quickly resolve any customer grievances. ▪ Effective communication and coordination skills to coordinate with other departments – Food and Beverage, Housekeeping etc. ▪ Good knowledge of the local region to guide all guests and tourists.	▪ Inadequate customer handling skills. ▪ Lacks proper coordination skills. ▪ Lack of proper communication skills. ▪ Inadequate knowledge of local region.
Restaurant Manager (Graduate / Diploma in Hotel	▪ Complete knowledge of the dishes served at the restaurant at various times. ▪ Basic understanding of the cooking	▪ Lacks people management skills. ▪ Inadequate understanding of the cooking procedures of dishes and inability to explain the same to the

Role, educational qualification	Expected competency	Skill gaps
Management with experience)	procedures of each of the dishes. ▪ Ability to market the restaurant. ▪ Effective communication and coordination skills to coordinate with other departments. ▪ Interacting with guests and explaining the speciality of the cuisines. ▪ Manage the team of waiters / servers.	guests. ▪ Lacks communication skills.
Housekeeping Executive (Graduate / Diploma in Hotel Management with experience)	▪ Ability to ensure smooth functioning of the housekeeping activities while causing least / no hassles to the guests. ▪ Broad knowledge of using housekeeping equipments. ▪ Ability to groom, train and manage the housekeeping staff. ▪ Ability to resolve any issues pertaining to guests quickly. ▪ Good communication skills.	▪ Lacks people management skills. ▪ Inability to groom and train the housekeeping staff. ▪ Lacks communication skills.
Tour operators / guides (illiterate to 10th pass, trained by Tourism department)	▪ Route planning and optimisation ▪ Ability to liaison with airline, hotels and local community ▪ Route optimisation skills ▪ Ability to manage tourist expectations ▪ Customer Relationship Management ▪ Soft skills ▪ Understanding of local and English speaking skills	▪ The district is in need of a large number of professionally trained guides. ▪ Lacks knowledge of travel tools like route optimisation. ▪ Lack of soft skills ▪ Inability to communicate in English or Hindi.

Source: IMaCS Analysis

6. Recommendations

The objective of our recommendations is to provide areas of skill gaps which need to be addressed either by the private players or the Government or both. These recommendations are made keeping in mind the current situation of the respective sector within the district as well as future prospects for the same.

For Kodagu district, the recommendations will focus on two industries:-

1. Food Processing Industry
2. Travel, Tourism and Hospitality sector

A summary of all recommendations has been collated in the below table followed by detailed recommendations for each of the above mentioned sectors:-

Table 301: Summary of Recommendations made for Dakshina Kannada district

Sector	Recommendations to the Government	Recommendations to the private sector / NSDC	Recommendations to the respective Industry
Food Processing	▪ Setup training institutes in rural areas to impart training in various aspects of coffee / spice farming as well as processing ▪ Put forward initiatives to encourage entrepreneurship in the area of spice processing.	▪ The private players can focus on training in the following areas:- – Facilities Management – Quality Control – Food Safety and Standards – Effective communication – People management etc.	• Setup spice processing units especially for pepper and cardamom • Further investment into tea and coffee plantations for the region, with other bigger companies participating. ▪ Build ownership of plantations and develop multiple product plantations
Travel, Tourism and Hospitality	Recommendations to the Department of Tourism:- ▪ Setting up colleges to	• Provide short duration intensive courses in the subject areas of :-	• Make investments into setting up more resorts and hotels.

Sector	Recommendations to the Government	Recommendations to the private sector / NSDC	Recommendations to the respective Industry
	impart formal, structured degree programs in the field of hospitality. ▪ Training also to be given for:- ○ Tourist guides ○ Tour operators	– Food Production – F&B Management – Accommodation Operations – Front Office Management – Sales and Marketing	• Promote eco-tourism and health and wellness based tourism in the district.

6.1. Food Processing

Coffee plantation and processing has been the main stay of Kodagu's economy for ages. In 2011-12 coffee plantations covered more than 104.8 thousand hectares of land in Kodagu producing about 1.24 lakh Metric Ton (MT) of coffee produce and employing close to 2.5 lakh people on a daily basis (average daily number of persons employed in the district in 2009-10).

The importance of coffee production and processing to the district cannot at all be denied. Similarly, the spices production and processing augments and enhances the strength of the food processing industry as a whole in the district. As already seen, there are certain training gaps within the sector and hence the recommendations are as follows:-

Government

There are two facets to the Government's action in the sector:-

- Setup training institutes within the rural sections of the district which focus on imparting training in :-
  - Farming process for cash crops like coffee, cardamom, pepper etc.
  - Scientific means of ascertaining need for harvesting and techniques of quick harvesting.
  - Training on machines used for various processes like curing, drying etc.
  - Training to act on safety hazards.

- Put forward initiatives to encourage entrepreneurship in the area of spice processing. This is doable in a small scale and hence will increase the livelihood for a lot of people. The specific initiatives which can be taken are:-
  - Provide financial support to those who want to setup processing units.
  - Provide subsidised training to the units' employees
  - Provide support to enable packaging and branding.
  - Create a common market in order to make sales of the processed products.

Private players

The private players can focus on the lower and middle level management personnel of the processing companies in the district and impart training in the following areas:-

- Facilities Management
- Quality Control
- Food Safety and Standards
- Effective communication
- People management etc.

as these are skills which are found lacking in a huge way in the food processing units.

Industry

Kodagu is a rural region as well as one of the more prosperous parts of Karnataka. This is primarily due to coffee production and other plantation crops. The large sized presence of coffee, tea and spice plantations in the district provides the industry with an opportunity to setup various processing units in the form of small, medium and large scale units. As of today the only big player in the segment with a presence in the district is TATA Coffee. The recommendations, thus, are as follows:-

- Setup spice processing units especially pepper and cardamom
- Further investment into tea and coffee plantations for the region, with other bigger companies participating in the same.
- Build ownership of plantations (like how TATA Coffee operates) and develop multiple product plantations - cardamom, pepper and oranges are inter-planted within the estates of coffee.

6.2. Travel, Tourism and Hospitality

Tourism has come up as big industry in Kodagu only in the last five to six years. Kodagu is now being recognised as a hill station destination of preference amongst the youth. The growth in tourism has given rise to many hotels, resorts and 'home-stays' springing up in the district. Many big and renowned corporate like Taj Hotels, Mahindra Resorts etc have already invested in creating large scale luxury resorts near Madikeri. During GIM 2012, EoIs were signed for investments more than Rs. 400 crore all in the field of hospitality. But this growth has not been accompanied by a growth in training institutes within this sector.

Government

There is an immediate need to setup a hotel management institute within the district in order to meet the current and future demand for skilled professionals. The institute must focus on delivering structured degree programs like:-

- B Sc. Hotel Management
- M Sc. Hospitality Administration
- Diploma in Culinary Management
- Bachelors in Catering Technology & Culinary Arts
- MBA in Hospitality Management
- Post Graduate Diploma in Accommodation Operation and Management
- Post Graduate Diploma in Dietetics and Hospital Food Service etc.

The hospitality industry is facing a serious crunch of skilled manpower within the district and hence it is very essential to facilitate the setting up such an institute on an immediate basis.

Also, from the perspective of tourism, the Department of Tourism needs to implement programs in order to train people in:-

- Tourist guides: These people need specific training in:-
  - Knowledge of the significance of each of the places they operate in.
  - Effective communication skills with proficiency in English and Hindi languages
  - Ability to help out foreign tourists especially to travel around the district

    It is essential to provide certification to such trained guides as it will enhance the credibility of the people and further the confidence of the tourists

- Tourist Operators: These people need specific training in:-
  - Route planning and optimisation
  - Ability to liaison with airline, hotels and local community
  - Ability to manage tourist expectations
  - Ability to converse in English and Hindi languages

Private players

There is a huge scope for training and up-skilling within the hospitality segment from a private training institution perspective:-

- Provide short duration intensive courses in the subject areas of :-
  - Food Production
  - F&B Management
  - Accommodation Operations
  - Front Office Management
  - Sales and Marketing
  - Hotel Accounting and Controls
  - Quality Improvement
  - Housekeeping
  - Front desk management etc.

Industry

Tourism and Hospitality are relatively new sectors within Kodagu district but ones which see maximum potential for growth and employment in the coming years. The potential for tourism is already seen through the interest of major hospitality companies like Taj Hotels (TATA group), Mahindra resorts etc who have either already set up their respective hotels / resorts or are in the process of doing so. This sector provides opportunity for the industry to :-

- Make investments into setting up more resorts and hotels. Currently most of the hotels are in the form of 'Home-stays' where private homes are converted into bed and breakfast like joints with the owners of the place themselves taking care of the guests and helping them out with local tourist spots and plantation visits. This sector can be organised by setting up bigger hotels and resorts to further encourage tourists to visit the place.

- Promote eco-tourism and health and wellness based tourism in the district. The climate and the location of abundant green cover over the hills and valleys gives the hill station a great opportunity to be promoted and marketed as a eco-tourism and a wellness destination. This requires setting up on ground various therapeutic and spa treatment centres along with the resorts at the right locations and proper trained people on ground, for eco-tourism too.

3.20. KOLAR[41]

1. Introduction

Kolar district is known for milk, gold and silk. This is home to the erstwhile flourishing Kolar Gold Fields (KGF) and the Kolar-Chikballapur Co-operative Milk Union which has one of the highest milk production in Karnataka. Kolar is also religiously significant, being known for the Someshwara and the Kolaramma temples. The district is bounded by the Bangalore Rural district in the west, Chikballapur district in the north, Chittoor District of Andhra Pradesh in the east and on the south by Krishnagiri and Vellore district of Tamil Nadu. Infact, Kolar district lost some of its land area to the Chikaballapur district, which was carved from it in 2007.

Kolar has 5 talukas – Kolar, Bangarapet, Mulbaigal, Srinivasapura and Malur. The headquarters of the district is Kolar town, which is about 80 kilometres from Bengaluru, the state capital. The district is spanned across an area of 3,969 square kilometres. The economy is agrarian with paddy being the main crop that is cultivated. Kolar has rich potential to cultivate vegetables for commercial uses and steps are being taken to do the same. Infact, about 75.33 per cent (Census 2001) of the population is engaged in rural activities.

[41] The map also includes certain talukas which now form the separate district of Tumkur.

As of 2011, Kolar district has a population of 15,40,231 people with a density of population of 384 persons per square kilometre. Its share in total population of Karnataka is at 2.5 per cent. In 2011, district's literacy rate was 74.3 per cent, marginally lower than the Karnataka average of 75.6 per cent.

Kolar was abundant with gold deposits in the KGF, which was closed down in the year 2003 after being in operation from the 1850s due to the rising costs of mining the gold.

Kolar town and the talukas of Bangarapet and Malur reap benefits because of the proximity to Bengaluru and Chennai. Infact, Bangarapet is major railway junction through which trains to and from Karnataka, Andhra Pradesh and Tamil Nadu pass. Added to this, Bharat Earth Movers Limited (BEML) is also present in the Bangarapet taluka, because of which the transport infrastructure is well developed in the taluka. Malur is an industrial hub for the district of Kolar. One of Kolar's biggest constraints to development is the acute water scarcity the district faces, with drip irrigation being utilized for the cultivation activities.

Table 302: Comparison of Kolar district with Karnataka – key indicators

Indicator	Year	Kolar	Karnataka
Area, in sq.km.	2001	3,969	191,791
Percentage share in State geographical area, %	2001	2.07%	100%
No. of sub-districts	2011	5	175
No. of inhabited villages	2001	2,919	27,481
No. of households	2001	504,185	10,401,918
Forest area as a % of total geographical area	2001	5.5%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As of Census 2011, Kolar district had a total population of 15.4 lakh persons, which is 4.4 per cent of the State population. Within the district, majority of the population at 30 per cent is concentrated in Bangarapet. This is due to the taluka being a hub and the presence of BEML and the erstwhile Kolar Gold Fields in which many of the locals were employed. This is followed by the Kolar taluka at 25 per cent,

Mulbagal at 17 per cent, Malur at 15 per cent and Srinivasapura at 13 per cent. Malur, though an industrial hub, has lower population due to it being only an industry center and other infrastructure being not very well developed.

The district's literacy rate was at 74.3 per cent, which was slightly lower than the State average of 75.6 per cent, but close to All-India average of 74 per cent. Male literacy at 82.05 per cent is significantly higher than female literacy rate at 66.45 per cent. Of the 30 districts, Kolar ranks 16th on Gender Development Index (GDI), with a value of 0.613.

Though the district has several areas around which the urban clusters have already developed (like the Bagarapet taluk and the areas around KGF), the majority of the population at 71 per cent lives in the rural areas.

Table 303: Key demographic indicators

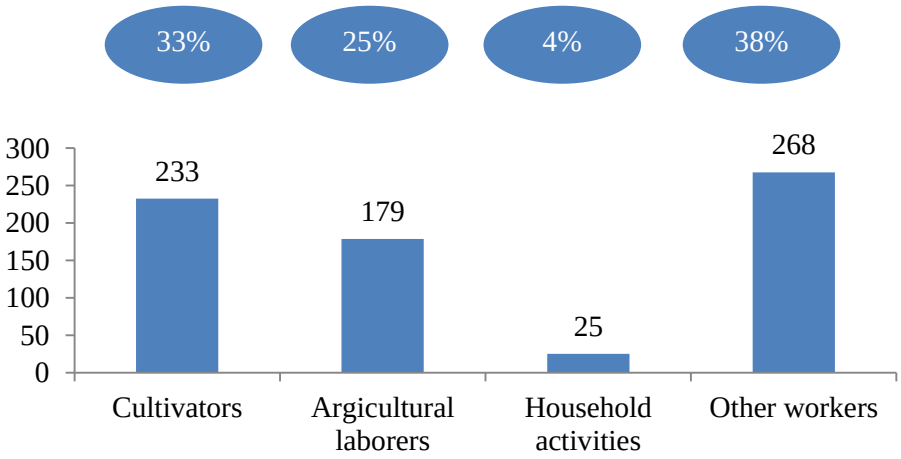
Indicator	Year	Kolar	Karnataka
Population, No.	2011	1,540,231	61,130,704
Decadal growth rate of population, %	2001-11	11.04%	15.7%
District's share in State's population, %	2011	4.4%	100%
Urban population as a percentage of total population, %	2001	29.1%	34%
SC population, %	2001	28.6%	16.0%
ST population, %	2001	4.9%	7.0%
Sex ratio, No. of females per 1000 males	2011	976	968
Population density, per sq. km.	2011	385	319
Literacy rate, %	2011	74.3%	75.6%
Main workers, No.	2001	523,550	19,364,759
Marginal workers, No.	2001	110,827	4,170,032
Working age population* as a percentage of total population, %	2001	65%	63%
Work participation rate^, %	2001	46%	45%
HDI	2001	0.625	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 704,000 persons. Of this, 33 per cent are cultivators, 25 per cent are agricultural labourers, four per cent are workers in household industry and 38 per cent are other workers[42].

Figure 170: Kolar district's worker profile, as of 2011, in thousands



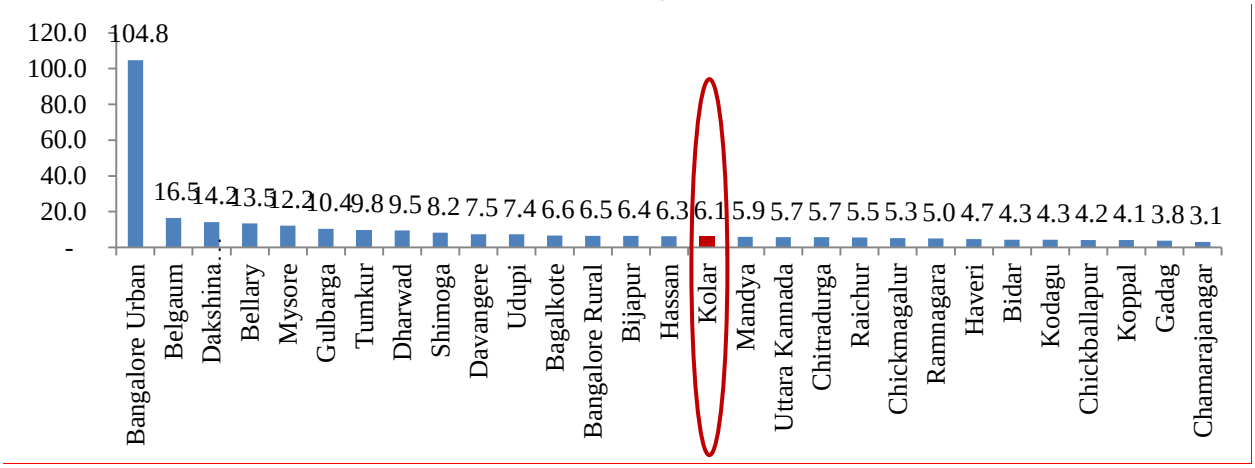
HHI: Household Industry
Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Kolar district had the Gross District Domestic Product (GDDP) at Rs 6,090.65 crore (1.98 per cent of the Gross State Domestic Product). In terms of per capita GDDP, it ranked 12th amongst 30 districts at Rs 40,062. This was lower than the State average of Rs 53,101.

[42] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

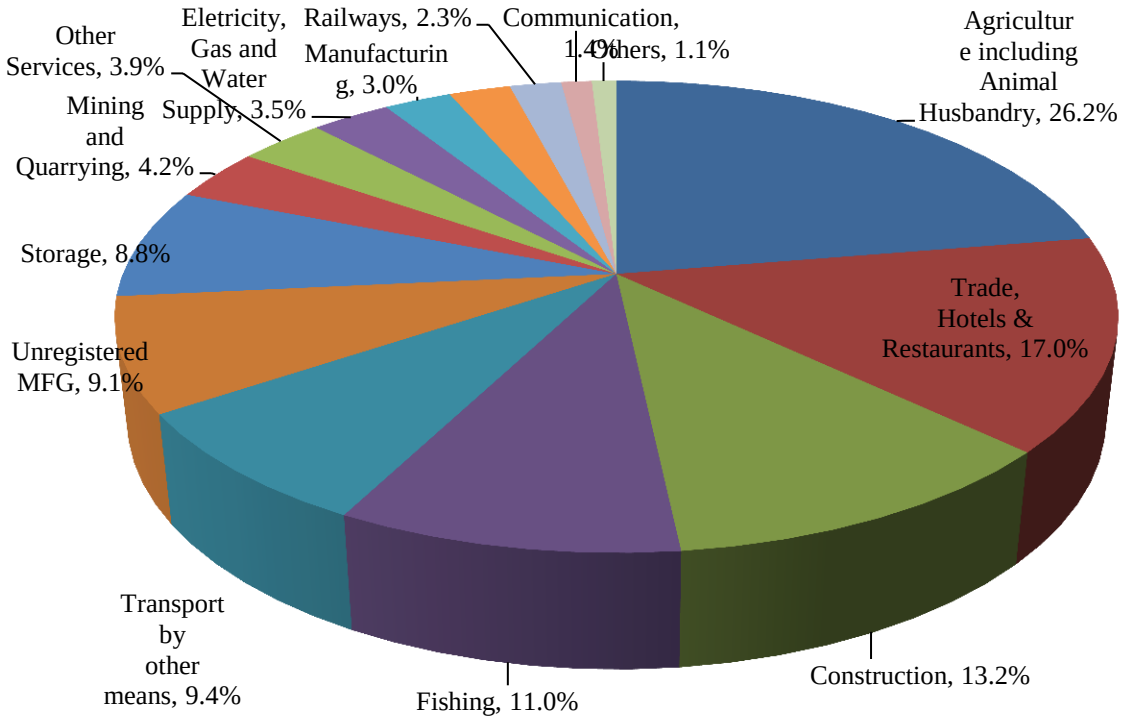
Figure 171: Gross District Domestic Product, in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district is pre-dominantly a service economy, with service sector's share in GDDP at 41 per cent in 2008-09. This was followed by primary sector at 30 per cent and secondary sector at 29 per cent.

Figure 172: Sector wise distribution of Kolar's GDDP, as of 2008-09, 100% = Rs 6,090.65 crore



Source: Kolar District At a Glance 2009-10

Agriculture: Of the total area of 374,966 hectares in the district, about 48 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of ragi and paddy under food crops. Agri-based processing represents the biggest potential for the district with the Srinivasapura taluka mangoes having a distinct taste. For details of crops grown in Kolar district, refer to annexures.

Industry: As of March 2012, Kolar had four medium scale industries employing 362 people and two large scale industries employing about 13,000 people. The large scale employment is dominated by BEML.
In addition to these, the district also has 8,039 Small Scale Industries (SSIs), which employ about 49,903 persons. Textiles employ the maximum number of people – 10,562. This is followed by chemical and engineering units that are scattered across the Malur and Bangarapet talukas. The maximum number of small units is dedicated to brick making. Refer to annexures for details.

The district has five industrial areas and five industrial zones. These are mostly located in the Kolar, Bangarapet and Malur talukas. The other two talukas are not relatively earmarked for industrial development.

In the GIM 2010 held, four MoUs were signed which had a proposed investment of about Rs 340 crores. These were mainly focussed on the agro based processing sector.

Kolar district is attracting significant investments from industrial players due to its locational advantage. During the Global Investors Meet (GIM) held in 2012 in Karnataka, Memorandums of Understanding (MoU) have been signed in the arena of aerospace, automobiles, engineering and manufacturing. The proposed investment is of the order of Rs. 8,634 crores and has proposed employment opportunities for 17,810 people. Refer to annexures for the sector-wise proposed investment and employment opportunities.

Services: The services sector includes construction, wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 41 per cent of GDDP in Kolar district. The chief contributors are trade and transport with about 17 per cent and 9.4 per cent respectively.

2.3. State of education

In terms of school infrastructure, as of 2009-10, Kolar had 2,532 schools which had 2,70,178 students totally. Kolar also has nine general colleges which have 8,696 students. Also, there is one medical college, one dental college, 12 polytechnics and two engineering colleges. Majority of the higher education is present in the Bangarapet taluka due to it being a transport and industrial activity hub.

For details of courses offered by polytechnics, refer to annexures.

Table 304: School education infrastructure in Kolar district, as of March 2010

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Govt.	1254	74,387	632	44,388	115	35,955
Aided	38	6,138	39	8,566	43	14,858
Unaided	43	46,434	230	21,444	138	18,008
Total	**1335**	**126959**	**901**	**74398**	**296**	**68821**

Source: Karnataka Education Department

Table 305: Higher education infrastructure in Kolar district, as of March 2010

Colleges	No.	Students
General	9	8,696
Medical	1	657
Polytechnic	12	1,800
Engineering	2	700
Dental	1	206

Source: Kolar District At a Glance 2009-10

For vocational training, Kolar district had a total of 31 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, four were Government ITIs, six were private aided ITIs and remaining 21 were private unaided ITIs. All the 31 ITIs together have a seating capacity of 3,863.

Table 306: Key ITI indicators in Kolar district, as of March 2012

Indicator	Value
Total Number of ITI	31
Number of Government ITI	4
Number of Private aided ITI	7
Number of Private unaided ITIs	20
Total Seating capacity	3,863
Student pass rate	80%
Student drop-out rate	17%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Kolar district we have found that there are placement tie-ups for the government ITIs. Approximately, 60-65 per cent of the students are placed through this channel. The remaining starts their own ventures or register with the employment exchange to look for jobs. For details on courses offered by ITIs in Kolar, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and private Institutions. While the Government Departments offers courses in trades such as sericulture, handloom, animal husbandry etc., the private training institutes are mainly offering computer courses. For details of training institutes and courses offered, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Kolar district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- Students from good colleges are able to get jobs in Bangalore and prefer getting placed in Bangalore only. Lure of city life and better lifestyle is high.
- Students, who are not able to get admissions in good colleges, prefer ITIs. The latter are also preferred because ITI certification helps in obtaining Government and even private jobs. The low fee is an added advantage.
- Training institutes in Kolar lack sophisticated machinery and infrastructure for training. Practical exposure is lacking.
- Quality of courses and teachers is average. Quality of infrastructure is below average.
- First preference is to work within Kolar district only. However, better salaries offered in Bangalore are incentive enough to migrate.
- Also, there is very little local opportunity for jobs.
- Preference for white collar jobs as compared to blue collar and manual jobs.
- Want soft skill development courses to help them compete with students from city ITI for good profiles.

3. Developmental concerns

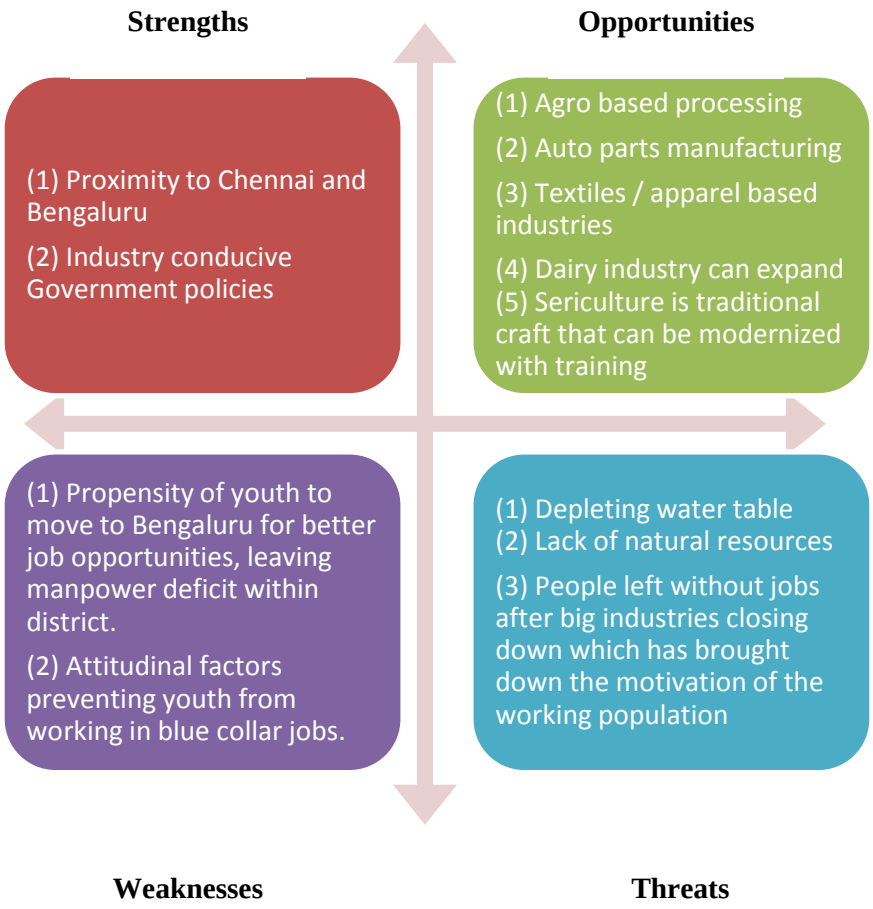
Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Depleting natural resources:** The district was rich in mineral resources, mainly gold, being eponymous with the Kolar Gold Fields. Due to the operational cost being higher than the productivity of the mines, this was closed down. Lots of local labourers were left in the lurch following this closure.
- **Shortage of skilled manpower within the district:** The district has many educational institutions providing education and training to the locals. However, locals, especially youth are more prone to moving to nearby Bengaluru for better job opportunities. The lure of better city life along with higher compensation packages and standard of living encourage the youth to move from Kolar to Bengaluru. Trains from Bangarapet to the state capital are aplenty and tickets are priced as low as Rs 5/- which further make the daily commuting easier.
- **Depleting water table:** Kolar is one of the driest districts in Karnataka. The fact that there is acute shortage even for drinking water has made it very difficult for big industries and agro based processing to flourish in the district.
- **Lack of big local industries:** Kolar lacks big industries (barring BEML) that can generate employment for the local people. This is due to afore mentioned water shortage and lack of resources on which these industries can be developed.

SWOT analysis

Based on the diagnostics of the Kolar district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 173: SWOT Analysis of Kolar district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 1.86 lakh persons is likely to be generated in Kolar district. Agriculture and allied activities are expected to remain the biggest employers. With Kolar emerging as an auto hub, with several MNCs planning putting up their manufacturing centers there is demand for people skilled in auto. Also, garmenting in textile will be an employment provider. As the economy grows, employment demand in supporting sectors such as construction, transportation, healthcare and education is also expected to increase at a faster rate. There is rising demand for semi-skilled people, especially in welding, fitting and masonry in Kolar due to higher number of manufacturing and engineering units.

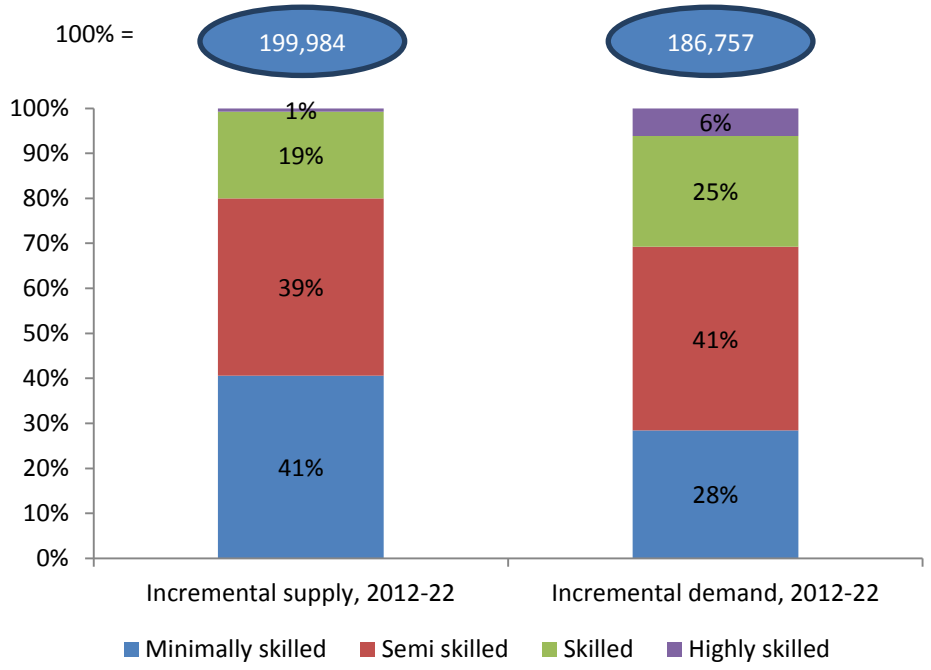
Table 307: Incremental demand in Kolar – 2012 to 2022

SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	94,227	78,478	11,730	2,134	1,885
Auto and Auto component	8,136	814	5,289	1,627	407
BFSI	4,458	-	2,675	1,337	446
Building, Construction industry and Real Estate	26,101	7,830	13,051	3,915	1,305
Chemicals & Pharmaceuticals	587	117	176	176	117
Construction Materials and Building Hardware	1,621	162	1,054	324	81
Education and Skill Development	9,789	-	-	8,810	979
Food Processing	45	14	14	14	5
Furniture and Furnishings	409	164	164	61	20
Healthcare Services	15,714	-	1,571	11,000	3,143
Textile and Clothing	4,272	854	2,563	641	214
Transportation, Logistics, Warehousing and Packaging	11,401	2,280	6,612	2,280	228
Tourism, Travel, Hospitality & Trade	5,283	1,057	3,592	528	106
Unorganised	4,714	943	2,734	943	94
Total	**186,757**	**92,713**	**51,224**	**33,792**	**9,029**

Source: IMaCS Analysis

The incremental supply of work-force between 2012 and 2022 is estimated at 1.99 lakh. This is slightly higher than the demand. Past trends show that skilled people from Kolar migrate to Bangalore in search of better job opportunities. These people commute on a daily basis, as the city is just about two hours away from Kolar. This has rendered the local industries short of skilled personnel.

Figure 174: Skill wise incremental demand and supply in Kolar district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on our field surveys in Kolar district, we have found out that sectors where skilling interventions are required are mainly agriculture and allied, textiles and clothing, auto and auto component and dairy processing. In addition, the district also has other manufacturing and engineering industries, which do not have significant employment generation potential, but are facing shortage of skilled manpower for functional skills such as fitting, electrical, welding, metallurgy, masonry etc. These trades also need to be offered to the youth.

Table 308: Sectors where interventions are required in Kolar district – comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Kolar	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		

High Growth Sectors identified by NSDC	Kolar	Karnataka
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 309: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Textiles and clothing industry		√	√
Food processing (Agro-based processing and Dairy)	√	√	√
Others (fitter, welder, mason etc. For auto component)	√	√	√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Textiles and clothing industry

As of March 2012, Kolar district had 1,612 textiles based SSIs, employing 10,512 workers. The main motivation behind Kolar having so many textile based units is the proximity to the state capital and

availability of cheap labour. Majority of the workers employed in these mills are women. The industry is poised to grow with the growth of the textile industry in the state. The garmenting units in Kolar make the fabric to the designs that are sent from Bengaluru and these are sent back to the order location. These organizations attach the label.

In the last two to three years, many garment based industries have moved some of their factories from Bangalore to Kolar, due to low cost of production and availability of cheap labour. In most cases, companies are shifting only part of their operations to smaller towns, whereas the final finishing, packaging and marketing is still being undertaken in Bangalore.

Figure 24 given below explains the value chain of the textile and clothing industry. Of the entire value chain, only the circled part (garments) exists in Kolar district. Within the garments industry, the value chain followed in Kolar district is given in Figure 7 below.

Figure 175: Value chain in textiles and clothing industry

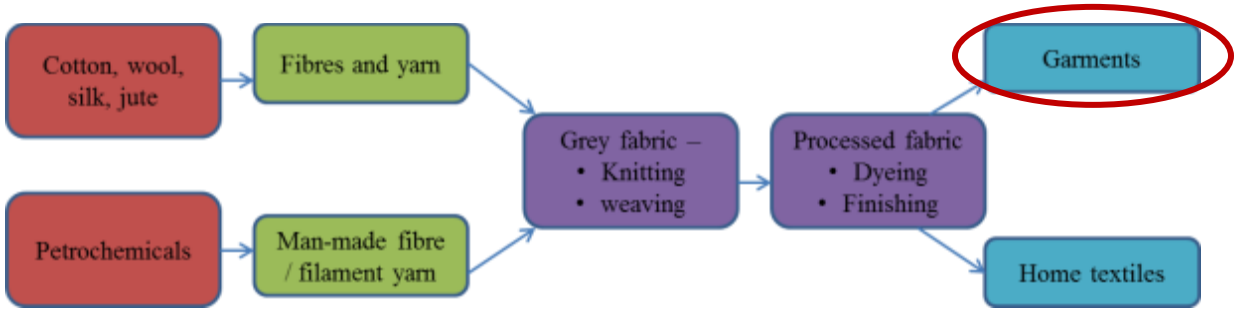


Figure 176: Value chain in garments industry – present in Kolar district

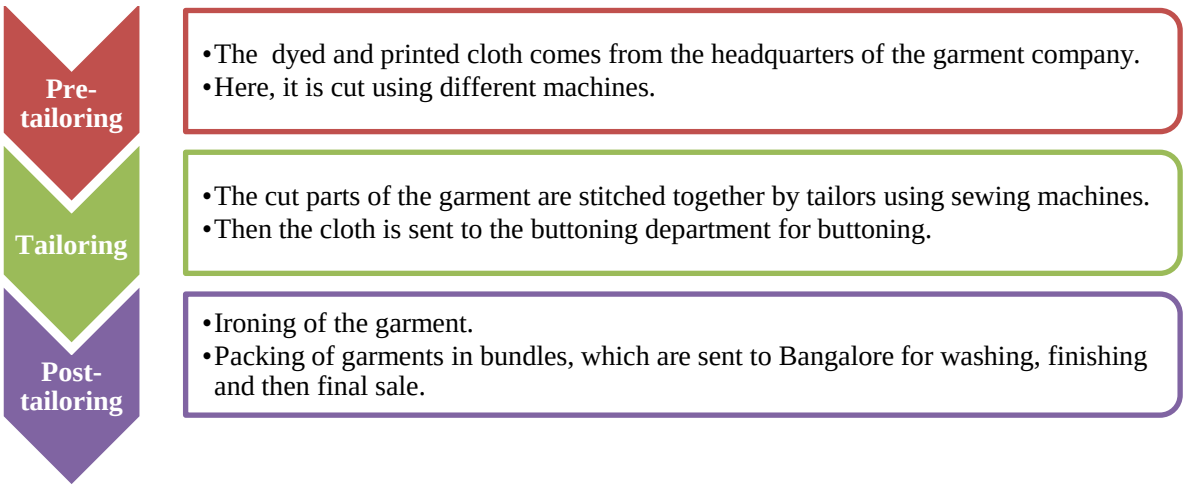


Table 310: Skill gaps in textiles and apparel in Kolar district

Role, educational qualification	Expected competency	Skill gaps
Manager / supervisor / floor in-charge (Graduate)	▪ Managing all the facilities and the functioning of the work-force. ▪ Supervising of the work conducted by operators / tailors and conducting quality checks. ▪ Knowledge of pattern making. ▪ Ability to undertake inspection, production planning and control. ▪ In-depth knowledge of production processes and inspection methods. ▪ Leadership skills ▪ Soft skills and interpersonal skills	▪ Most of the managerial / supervisory staff is hired from Bangalore, as people with such skills are in scarcity in Kolar district. Those who are educated with these skills in the district prefer to move to Bangalore in search of better jobs.

Role, educational qualification	Expected competency	Skill gaps
Operators / tailors (illiterate to 10th pass, trained in tailoring from NGOs or training provided by Department of Textiles)	▪ Tailors are classified into five categories based on their skill level. Higher skills mainly obtained from experience in the industry. ▪ Proficiency in tailoring / stitching is required for stitching garments with different specifications. ▪ Good machine control – knowledge of threading of sewing machine, stitching on different shapes, seaming garment components together in various fabrics to specified quality standard ▪ Knowledge of machine maintenance procedures ▪ Knowledge of pattern making, grading and draping ▪ Ability to understand instructions properly and stitch the garments based on them. ▪ Ability to work in teams / inter-personal skills. ▪ Soft skills	▪ On the job training provided for one week, on joining of job to explain requirements and basic skill-up gradation. ▪ Even those who are trained before the job have to be re-trained, especially on running of machines, as the training institutes do not have good machine infrastructure.
Quality control executive (Graduate and with some experience in garment industry)	▪ Ability to inspect if the garments have been stitched as per given specifications and instructions ▪ Ability to check for quality adherence ▪ Ability to understand and prevent defects like size variations, loose threads, stains etc.	▪ On-the job training provided as such skills are lacking in persons trained at training institutes and usually come from experience only.

Role, educational qualification	Expected competency	Skill gaps
Helpers (illiterate to 10th pass)	▪ Ability to cut the cloth based on specifications. ▪ Ability to button the stitched garments. ▪ Ability to put labels on the stitched garments. ▪ Ability to iron the ready garments properly. ▪ Ability to iron the garments ▪ Ability to pack the garments in bundles	▪ Basic skills required for this profile, for which no / minimal training required. Mostly provided easily on the job.

Source: IMaCS Analysis

5.2. Food processing - dairy

The Kolar Chikkballapura District Co-operative Milk Producer's Union – KOMUL – is one of the highest milk producing entities in Karnataka. The product portfolio of KOMUL is extensive, which includes the milk, milk products, milk powder, fermented products, ghee and butter, ice cream and frozen desserts, milk sweets and flavoured milk. The area of operation is across 2,919 villages across the two districts. During the month of February 2012 the Union procured an average of 6.63 lakh kg of milk per day. The total members in the union are 2,74,602.

Table 311: Member profile of KOMUL

Type	Number
Small farmers	94,029
Marginal farmers	93,663
Agri labourers	49,489
Others	37,417

Source: Kolar – Chikkaballapura Milk Union Ltd

Karnataka is the eleventh largest milk producer in India and owns the ninth largest bovine population but ranks fourteenth in milk yield. This coupled with the growing demand for milk – which is expected to rise to 180 million tonnes, this sector has potential for growth with the augmentation of skilled labour[43].

Figure Figure below gives the value chain of the dairy industry present in Kolar district.

Figure 177: Value chain in dairy in Kolar district

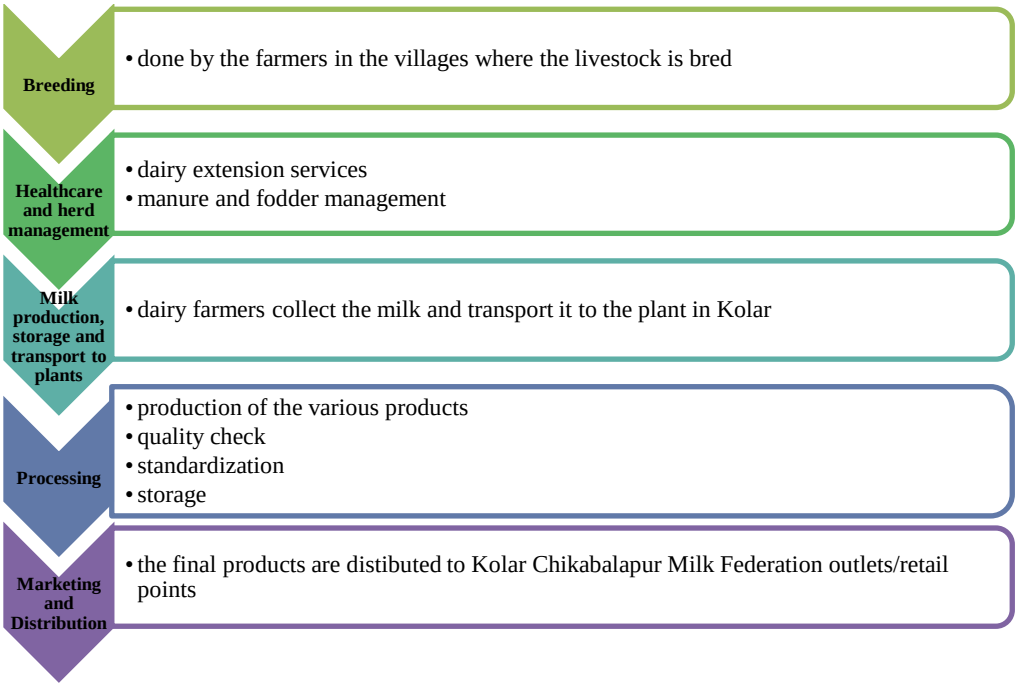


Table 312: Skill gaps in dairy in Kolar district

Entity	Role, educational qualification	Expected competency	Skill gaps
Dairy farmer (experience based. No qualifications as such)	Breeding of the different bovine breeds	▪ Providing the required food supplement ▪ Take the cattle to routine medical check-ups ▪ Ability to recognize basic ailments ▪ Provide hygienic environment for	▪ Lack of supplement knowledge ▪ Inability to provide clean environment for cattle to grow ▪ Lack of knowledge of

[43] Source: Indian Dairy Association

Entity	Role, educational qualification	Expected competency	Skill gaps
		cattle	modern feeding practices
Herd manager/ healthcare professionals (healthcare management degree)	(1) veterinary doctor (2) basic PU degree	▪ Ability to judge the ailments ▪ Knowledge to monitor the correct dosage ▪ Record maintenance for herds	▪ Veterinary doctors are lesser in number ▪ The basic herd management that requires record maintenance that keeps tab on the output, food intake, illness log, etc is not at all done which makes it difficult to implement preventive measures
Milk production and collection(un qualified)	(1) Dairy farmer (2) Daily workers to help (mostly unqualified)	▪ Collect milk hygienically ▪ Cool the milk before the storage ▪ Storage in hygienic places before the transport to the plant	▪ Infrastructure not available to keep the collected milk hygienically ▪ Lack of awareness about the ambient temperature to which the milk should cool before storing, which results in spoilage and wastage
Processing (dairy management degree holders/micr obiology	(1) dairy experts (2) dairy management degree holders	▪ Give the formulations for the products ▪ Handle large scale processing ▪ Come up with products with variations in composition, flavour, etc	▪ Less number of dairy experts ▪ Lack of micro biologists who can understand the various bacteria related issues

Entity	Role, educational qualification	Expected competency	Skill gaps
degree holders)	(3) quality control experts (4) micro biologists	▪ Check the quality and standard	
Marketing and distribution(management degree)	(1) marketing degree holders (2) channel managers	▪ Ability to identify suitable segments for marketing of products ▪ Ability to identify new target for the product development initiative ▪ Ability to build a strong marketing channel for forward linkage	▪ Less marketing and dairy management graduates who come forward ▪ In those who are involved, they are not able to form the channels for the linkage purposes

Source: IMaCS Analysis

5.3. Agro based processing

The food processing industry in Kolar is in a nascent state. The possibility of exploring the value addition to the farm produce has been realized just a few years ago. There are few food processing units that make products like squashes, pickles, juices from fruits like mangoes, banana and tomatoes.

Even these firms have been setup in the last five years. These are concentrated in the Kolar and Malur talukas. As mentioned before, the Srinivasapura taluka with the mango production is the target zone for further development in this sector.

The biggest challenge for the successful establishment and functioning of the units is the water requirement. Notwithstanding this hiccup, the Kolar horticultural productivity has been ranked in the top in Karnataka. Kolar already has a food park and food processing zone is also being planned by the Government.

Figure 178: Food processing value chain in Kolar district

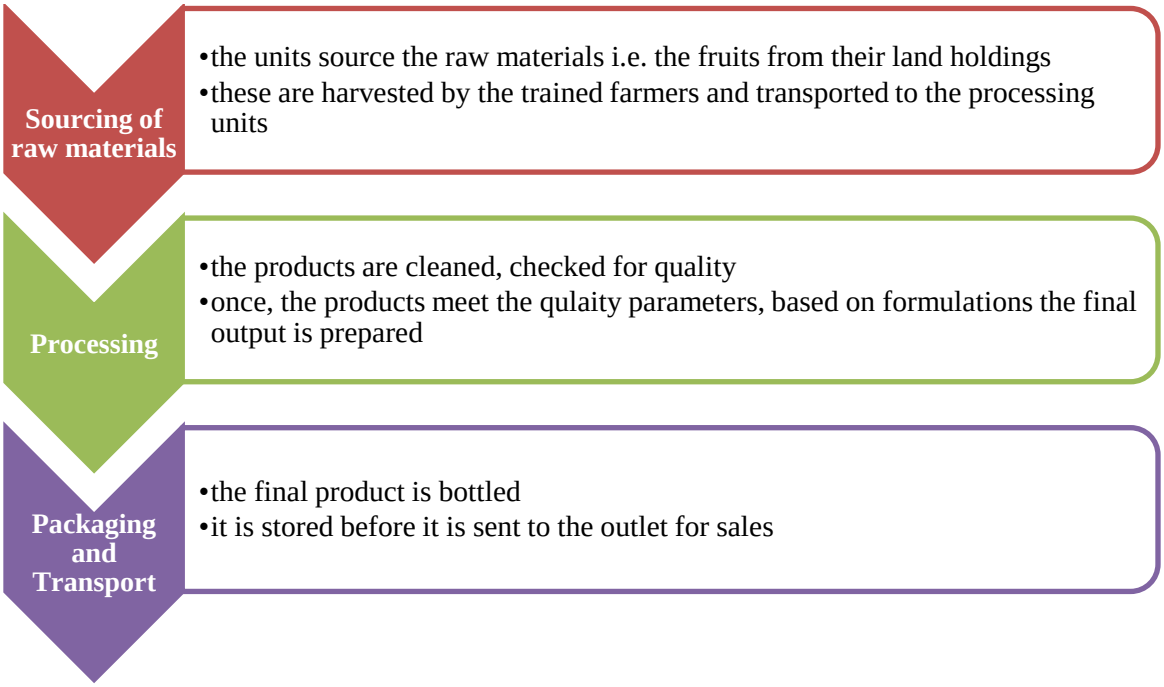


Table 313: Skill gaps in food processing industry in Kolar district

Role, educational qualification	Expected competency	Skill gaps
Farmers (unqualified)	▪ Knowledge of cropping pattern ▪ Knowledge of the usage of pesticides and fertilizers in the right quantity	▪ Very little awareness in farmers on the benefits of horticulture ▪ Prefer to sell the produce in local markets than to a food processing organization
Processing entrepreneur (diploma/degree holder in processing technology/	▪ Ability to understand the quality aspect ▪ Ability to train the helpers on how to grade the fruits ▪ Ability to find market for the final product ▪ Ability to expand the business ▪ Knowledge of preservation techniques	▪ The entrepreneurs understand the business. There is no gap as such as the industry by itself is in a nascent state

Role, educational qualification	Expected competency	Skill gaps
management degree holder)		
Formulation experts (degree in food science)	▪ Ability to create formulations for the product portfolio of the processing entity	▪ No formulation experts in Kolar. All are hired from Begaluru
Helpers / machinery attendants (High school pass)	▪ Ability to help operators with their day to day functions ▪ Help in cleaning the machines ▪ Help in loading and un-loading	▪ Lack the discipline to come and put in the required hours of work

5.4. Auto and auto components

Kolar is developing as an auto and auto component hub due to its locational advantage. This development is mainly concentrated around the Narsapura industrial area in Kolar. Narsapura is about 52 km from Bangalore. Already, Honda Motorcycle and Scooters India Limited (HMSI), a subsidiary of Japanese auto major Honda Motor Corp, is setting up its fourth two-wheeler plant in Narasapura at an investment of Rs. 1,350 crore. The state government has allotted 100 acres to the company. The new plant would go on floor by the first half of 2013. This assembly unit has the capacity to produce 1.2 million units a year in the first phase. Eventually, the production capacity would be ramped up to 1.8 million vehicles a year in the second phase which will be by 2013. The proposed employment creation is for atleast 2,500 people. Apart from HMSI and its vendors, Swedish truck and bus maker Scania is setting up its truck and bus body building facility in Narasapura Industrial Area. To add to this list is UK-based bike maker Triumph Motorcycles, has zeroed in on Narasapura for a local assembly plant.

Most of the activity in the auto and auto component making units is assembly line oriented and requires production based on the specifications the units receive from the head office. The value chain is given in figure 9 and the red circle indicates the part of value chain in Kolar

Figure 179: Value chain in auto and auto component industry

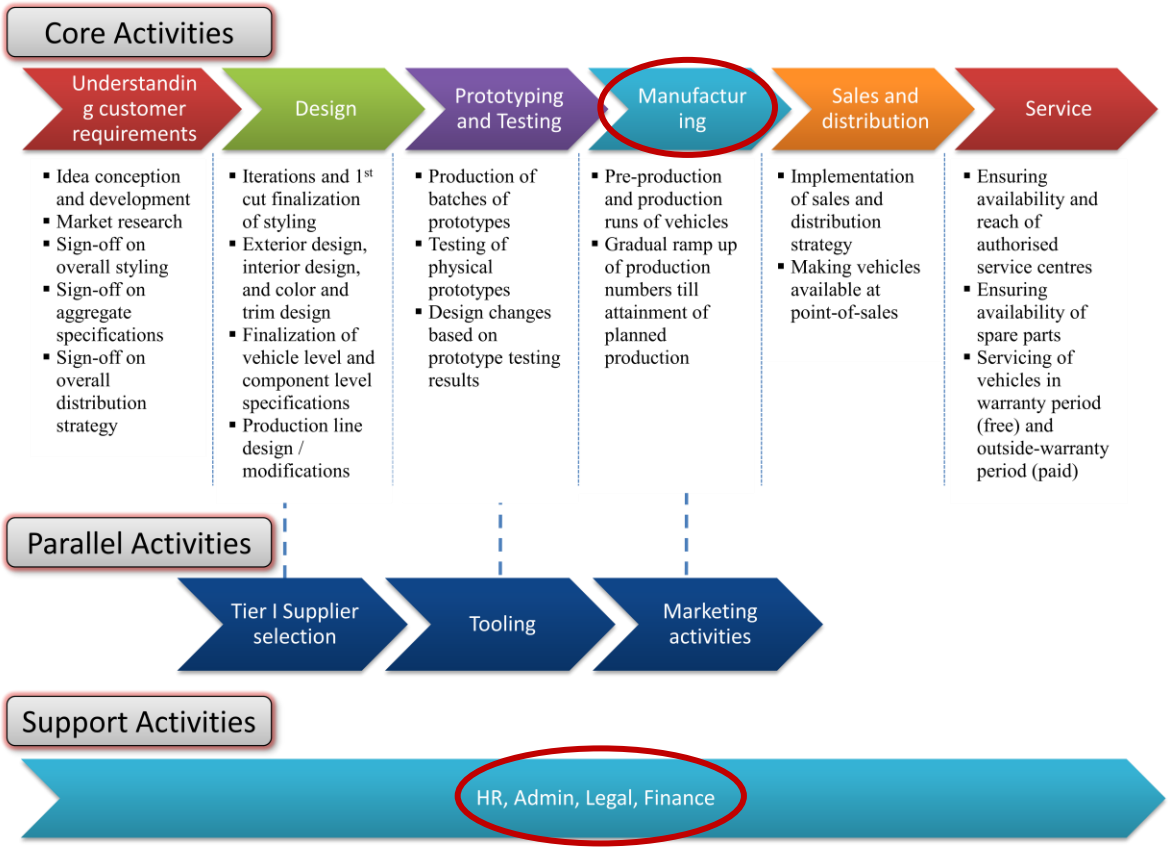


Table 314: Skill gaps in auto and auto component industry in Kolar district

Role, educational qualification	Expected competency	Skill gaps
Managers (management degree holders/experienced industry leaders)	▪ Ability to manage the workforce ▪ Ability to give strategic ideas ▪ Knowledge of market trends ▪ Knowledge of training required ▪ Record maintenance ability ▪ Highly qualified in personnel and soft skills	▪ Managers are hired mostly from Bangalore

Role, educational qualification	Expected competency	Skill gaps
Engineers (electrical, mechanical, auto)	▪ Knowledge of machinery and tools ▪ Ability to trouble shoot ▪ Shop floor management ▪ Compliance to quality measures like six sigma ▪ Soft skills	▪ Not able to adapt to the latest technology quickly ▪ Lack the soft skills – in terms of report writing, documentation of faults, etc ▪ The district's education system is not able to produce enough engineers
Supervisors (Diploma in electrical, auto, mechanical, ITI qualified)	▪ Ability to supervise activities conducted in the department for which responsibility is entrusted. ▪ Ability to train the new comers ▪ Overseeing the safety of all workers ▪ Complete understanding of all safety regulations and ability to handle safety issues ▪ Give the specifications to the operators and welders/fitters	▪ Not able to adapt to the latest technology used in shop floor ▪ Not enough mechanical and electrical diploma holders available
Fitters (experience based), Welders, machinists, lathe operators	▪ Basic ability to handle the machines ▪ Understand the basic safety aspects ▪ Do the given module of the assembly line to them to the specifications	▪ Not able to adapt to the latest technology used in shop floor ▪ Less number of fitters, which forces the managers to recruit from outside ▪ Lack the discipline to come and put in the

Role, educational qualification	Expected competency	Skill gaps
		required hours of work
Helpers / machinery attendants (High school pass)	▪ Ability to help operators with their day to day functions ▪ Help in cleaning the machines ▪ Help in loading and un-loading	▪ Lack the discipline to come and put in the required hours of work

Source: IMaCS Analysis

6. Recommendations

Recommendations for Kolar focus on the sectors of auto, textile and food processing. The food processing sector includes dairy and agro based processing. Some of these sectors will have recommendations for the private sector which will directly translate to skills being developed and the others will need government intervention to facilitate improvements.

Finally, since a significant chunk of employment is concentrated in agriculture, thus, major up-skilling can be done for those workers, updating them of latest techniques of farming. This will help them improve their livelihood opportunities and will increase their income levels. While the detailed recommendations follow, summary is given in the table below.

Table 315: Key recommendations for Kolar – summary

Sector	For private players	For Government players	For industry
Food processing – dairy and agro based processing	▪ Courses across the dairy value chain ▪ Focus on hygienic storage of milk ▪ Courses to increase	▪ To spread awareness about horticulture ▪ Set up more research centers on the lines of mango	▪ The milk industry is based on the co-operative structure, which

Sector	For private players	For Government players	For industry
	knowledge on food supplements ▪ Courses to impart food processing technology ▪	development center	ensures that the milk farmers get fair deals, so, there is no specific industry intervention required ▪ In agro based processing, more units can be set-up, especially in Srinivasapura taluka
Textile	▪ Courses to modernise tailoring and sewing ▪ Designing and finishing techniques to make the garment look more attractive	▪ Motivate people to take up the sector with the help of melas and job fairs ▪ Facilitate the NGOs and SHGs to source more women	▪ Industry players to expand the value chain so that Kolar directly caters to the market
Auto	▪ Skilling based on the functional roles ▪ Degree and complexity varies on the roles of shop floor worker, supervisor and management level	▪ Better the road infrastructure ▪ Better connectivity to the industrial areas ▪ Making the curriculum in ITI and polytechnic to reflect the needs to the	▪ Industry players to conduct courses that are directly required in their shop-floor

Sector	For private players	For Government players	For industry
	personnel	industries	

6.1. Food processing - Dairy

Dairy industry in Kolar has made the district eponymous with milk. As described earlier, this industry gives livelihood to over 2.5 lakh people directly and indirectly. With the incremental demand for dairy products this industry is poised to grow further. In addition, the KOMUL has also launched various programmes to integrate more of the local population into its growth story.

The Clean Milk Production Programme

KOMUL has commissioned the procurement of 2.5 lakh Kgs of milk every day. This procured milk needs to be maintained at some defined temperature and specifications. This activity would require an additional 52 functioning milking machines and 456 milk collection units. This translates to more skilled workforce which is capable of undertaking these activities.

UHT – KOMUL Speciality

This is a new product launched to provide zero bacteria milk with longer shelf life. This requires speciality processing and Tetra packaging.

Apart from these new initiatives and raising demand, this industry requires skilling interventions for the following unique reasons, which are peculiar to the Indian dairy industry. This presents an opportunity for the private sector.

Private player

Across the value chain, the following training is required which will lead to overall development in the dairy sector:

- Milk is mainly collected from the small dairy farmers scattered all over the district who may/may not know the hygiene and safety procedures. Courses to make the dairy farmers aware of the procedures
- Very less awareness of the feed supplement required. Short term modules on feed supplements

- Dairy technologists, who are the need of the hour, but on the wane as the education in the district is not market oriented. Medium duration courses to hone dairy technologists
- The need for micro biologists to understand the intricacies of producing milk and other associated dairy products with greater shelf life. Medium duration courses to hone micro biologists
- Dairy marketers need to be honed as the product portfolio has widened, based on the need for every target segment, but the channel needs to be built that will do justice to this broadening portfolio.
- The veterinary experts – where capacity building is required.
- Packaging technologists – who can provide innovative packaging ideas to prevent wastage due to spoilage.

In essence, the entire value chain of this thriving industry of Kolar district needs some form of skilling to prepare itself for higher production and innovation in its products.

6.2. Food processing – Agro-based processing

Though Kolar has water scarcity, it still produces quality fruits and vegetables that are exported to Chennai and also other places in the State. Kolar grows several fruits like banana, sapota, jackfruit and guava. The vegetables and fruits grown here are of superior taste and the mangoes of Srinivasapura taluka are considered to be the best in the State. This taluka grows different varieties of mangoes like alphonse, neelam, totapuri, sindura and beneshan. Total area of about 43,117 hectares is cultivated. But, there are some challenges that need to be overcome by the intervention of the Government so that this sector can have a start. Once there are positive returns, more farmers will take up the horticulture and the allied processing. Currently, following skill gaps are observed:

- Less awareness about the sector
- No idea about the benefits of processing
- Not aware of methods to boost productivity

There are three food processing units that make squashes, juices and also powdered egg. They have the knowledge but would welcome institutes that can propagate the advantages and opportunities in agro based processing in the district. Thus, the private sector can offer courses related to processing and the Government can intervene at the farm level.

Private player

The thrust should be to create entrepreneurs who can interface with the farmers and actively drive the processing industries. Some of the critical points where training can be given are:

- Gauging of quality of fruits
- Basic fruit processing steps
- Formulations
- Techniques to add value to various fruits
- Fund management
- Packaging hygienically
- Marketing practices
- Supply chain management

Government

The government, the Department of Horticulture, needs to play the role of an agent that will spread awareness about the benefits of fruit processing. The extent to which the income will increase has to be clearly explained to the farmers who are not aware about the positives of horticulture. Also, the different cropping patterns and supplements required can be told to the farmers, going at the village level.

The Department of Horticulture is currently setting up a 'Mango Development Centre' for mango processing in the district. Once set up, it will be a demonstration cum training centre.

Industry

More fruit-processing units can be established in the district. Especially, in the Srinivasapura taluka, there is extensive mango production, as discussed previously. These are, largely, sold in local markets. There is also wastage when these fruits are not sold. If fruit processing units are established in the district, there can be value addition done. Coupled with marketing and packaging, this will give rise to more employment and give better value for money for the farmers.

6.3. Auto and auto components

Kolar is emerging as an auto hub. With big names like Honda, Scania and Triumph planning to set up their manufacturing units in the industrial areas in the district there is need for the skilled man power who can work across the units. This presents an opportunity for the private player to setup skilling institutes in the district.

Private player

The training can be offered for the auto and auto component based on functional roles that would be required in the factories.

Functional role	Training required
Shop floor worker	5. Basic assembly line activities 6. Skills like welding, fitting and fabrication 7. Work culture modules
Supervisor	5. Quality control tools 6. Basic principles of lean manufacturing 7. Shop floor management skills 8. Soft skills 9. Leadership modules
Higher management	5. Management modules crash course 6. Implementation of quality and productivity enhancing tools like six sigma 7. Courses to form and lead quality circles 8. Leadership modules

Industry

Majority of the training programmes can be conducted in partnership with the auto companies itself. The Toyota group in Ramanagara district conducts courses for its own captive requirement. On similar lines, training initiatives can be developed for the requirement in Kolar according to the captive industry requirements. This will reflect the market demands better.

6.4. Textile

The textile in Kolar district mainly involves the tailoring and sewing of the garments. These finished garments are sent to shops across Bengaluru where the respective label is attached and sold to the end customer. The interventions required here should focus on orienting the workers involved to use modern machines which will increase the productivity.

Private Player

The sewing and training institute can be set up in Banagarapet taluka, as that is the nodal point in the district. Also, this will serve as an opportunity to target the youth who move out of the district; as Banagarapet is the place from where the inter district migration starts. The indicative types of courses that can be offered in the institute are:

- Tailoring in modern sewing machines
- Making of designs that reflect the current market demand
- Additional skills that will make the end product look attractive like embroidery, appliqué, akoba, etc.
- Market assessment skills, which will help Kolar transform from production center to finished goods producer
- Entrepreneurship development

Government

The government's role here is to motivate the youth to join this sector. There are a few NGOs and SHGs that currently go to village level to recruit women for this. The Government Textile Department should offer its support by making this sourcing a part of its mandate. This will help in creating a pipeline of human resource that can ultimately help in Kolar transforming from a production center to a marketer of finished goods.

Industry

The industry can build better interface with the customer base and make Kolar a marketer of finished goods. Complete revamping of the value chain, with not just garmenting but also marketing can be done. With good transport facility (the Bangarapet junction) already available, this secyor can become an economy driver.

9.21. KOPPAL

1. Introduction

The Koppal district came into existence in 1998. It was carved out of Raichur district. Koppal has a total land area of 7189 sq. km., which is 3.75 per cent of the total State area. It is bordered by Bagalkot district in the north, by Raichur district in the east, Gadag district in the west and Bellary district in the south.

It is sub-divided into four talukas (Gangavathi, Koppal, Kustagi and Yelburga) and has 594 villages. Majority of the population at 91 per cent lives in rural areas. Literacy rate in Koppal district is 54.1 per cent. Agriculture is the main occupation, employing 72.7 per cent of the labour force (as of Census 2001). The remaining is in household industry at 3.3 per cent and other workers at 24.0 per cent.

Koppal district has partly red sandy and black cotton soil suitable for agriculture and horticulture crops. Paddy, jowar, bajra and maize are the key crops grown. Fruit crop like pomegranate, mango, banana, etc. are also produced. Redirection of Thunga Bhadra river waters from Munirabad town has helped the agriculture industry in Koppal. The district is situated approximately 38 km away from Hampi, a world heritage center. Anegundi village, believed to be the kingdom of monkey (Kishkinda) is famous for Ranganatha temple, Huchappayana Matha temple, Pampa Sarovara, etc. and are located in Gangavathi taluk. Other location such as Koppal fort, Kotilinga temple, Mahadeva temple makes Koppal an attractive tourist destination.

Out of the 19 large and medium companies in Koppal, around nine are in steel industry and five are power plants, primarily bio mass electric power.

Table 316: Comparison of Koppal district with Karnataka – key indicators

Indicator	Year	Koppal	Karnataka
Area, in sq.km.	2001	7189	191,791
Percentage share in State geographical area, %	2001	3.75%	100%
No. of sub-districts	2011	4	175
No. of inhabited villages	2001	594	27,481
No. of households	2001	2,10,888	10,401,918
Forest area as a % of total geographical area	2001	5.33%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Koppal district has a population of 1,391,292 persons i.e. 2.27 per cent of the State population. Majority of the population (33.97 per cent) is concentrated in Gangavathi sub-district, followed by Koppal sub-district at 26.26 per cent, Kustagi sub-district at 20.01 per cent and Yelburga sub-district at 19.76 per cent. While 56.65 per cent of the population in the district is in working-age group (15 to 64 years), about 46.4 per cent is actually working i.e. work participation rate.

The district's literacy rate is 54.1 per cent, which is significantly lower than the State average of 75.6 per cent and All-India average of 74 per cent. Male literacy at 68.4 per cent is significantly higher than female literacy rate of 39.6 per cent. Koppal has a Gender Development Index (GDI) value of 0.56 (as per GDI 2001).

Most of the population (91.0 per cent) lives in rural areas. In fact, as mentioned earlier, agriculture is also the main occupation of the people in the district, employing 72.7 per cent of the labour force as either cultivators or agricultural labourers.

Table 317: Key demographic indicators

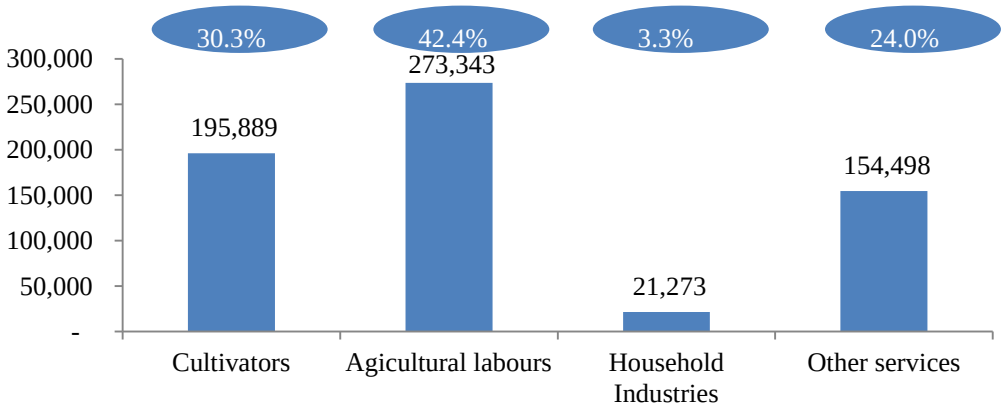
Indicator	Year	Koppal	Karnataka
Population, No.	2011	13,91,292	61,130,704
Decadal growth rate of population, %	2001-11	16.32%	15.7%
District's share in State's population, %	2011	2.27%	100%
Urban population as a percentage of total population, %	2001	9.0%	34%
SC population, %	2001	15.48%	16.0%
ST population, %	2001	11.59%	7.0%
Sex ratio, No. of females per 1000 males	2011	983	968
Population density, per sq. km.	2011	250	319
Literacy rate, %	2011	54.1%	75.6%
Main workers, No.	2001	422,208	19,364,759
Marginal workers, No.	2001	132,298	4,170,032
Working age population* as a percentage of total population, %	2001	56.65%	63%
Work participation rate^, %	2001	46.36%	45%
HDI	2001	0.58	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 6,45,002 persons. Of this, 30.3 per cent are cultivators, 42.4 per cent are agricultural labourers, 3.3 per cent are workers in household industry and 24.0 per cent are other workers.

Figure 180: Koppal district's worker profile, as of 2011, in thousands

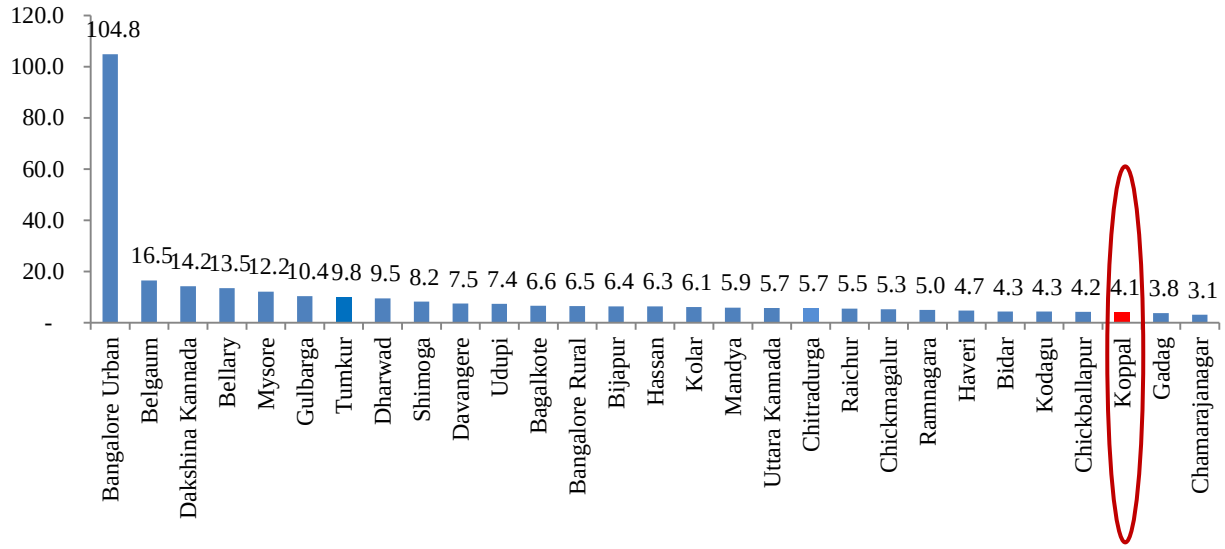


Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Koppal district had the third smallest Gross District Domestic Product (GDDP) in Karnataka at Rs.4,10,404 Lakh (1.33 per cent of the Gross State Domestic Product) and per capita income was at Rs.31,305 which was significantly lower than the State average of Rs.53,101.

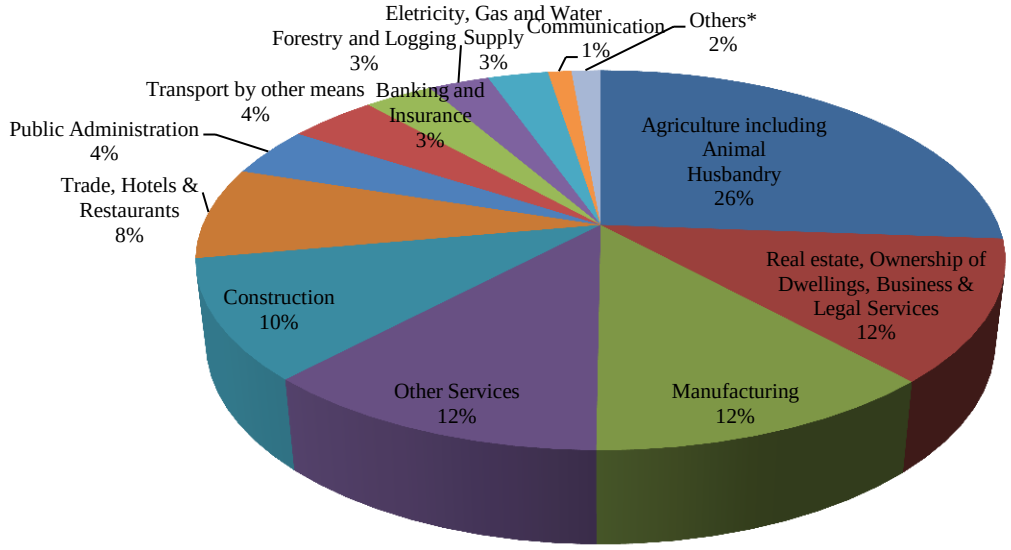
Figure 181: Gross District Domestic Product, in Rs thousand crore, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 45.2 per cent in 2008-09. This is followed by primary sector at 29.8 per cent and secondary sector at 25.0 per cent.

Figure 182: Sector wise distribution of Koppal's GDDP, as of 2008-09, 100% = Rs 9,837.64 crore



**Others include Railways (0.64%), Mining and Quarrying (0.47%), Fishing (0.25%) and Storage (0.017%.*
Source: Koppal District At a Glance 2009-10

Agriculture: Of the total cropped area of 5,07,795 hectares in the district, over 74.9 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by paddy (2,94,055 tonnes), jowar (37,634 tonnes), bajra (17,476 tonnes) and maize (88,545 tonnes). Also in oil seed category, majorly ground nuts and sunflower are grown. Pomegranate (4657 tonnes) is largely grown in Koppal district, followed by mango, banana, chikku, grapes, papaya, lemon and watermelon. In addition pulses like gram (17,998 tonnes), tur, etc are also cultivated.

Industry: As of 31st December 2011, Koppal district had 19 large and medium scale industrial units, employing 3,759 persons. These includes Kirloskar Ferrous Industries Limited, Hospet Steels Limited, M.S.P.L. Limited, etc with end products like steel, agro, chemical, etc.

Koppal also has 374 Small Scale Industry units (SSIs), employing 2,111 persons. As of March 2010, around 66 per cent of the industries are present in Gangavathi and Koppal taluk, followed by Kustagi (17 per cent) and Yelburga (18 per cent) taluks. Majority (86 per cent) of the candidates are employed in sectors such as Food and Intoxicants, Ferrous and Non-ferrous, Textile, Wood and Electrical and Electronics industry.

There are one industrial estate and one industrial area in district i.e. KIADB industrial area (38 acres) in Kustagi taluk and KSSIDC industrial estate (over 30 acres with 2'C' type and 2 super mini sheds at Gangavathi taluk). In Global Investors Meet (GIM) 2010 Koppal district has attracted around nine projects in sectors like sponge iron, power, etc which are in various stages of implementation.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 45.2 per cent of GDDP in Koppal district. Of all the services, the key services in the district are of 'real estate, ownership of dwellings, business and legal services' at 12.04 per cent of GDDP, followed by other services at 11.85 per cent and trade, hotels and restaurants at 7.81 per cent.

2.3. State of education

As of September 2011, Koppal district had 504 Lower Primary schools, 747 Higher Primary schools and 267 High schools with a total enrolment of 2,79,092 students.

Table 318: School type wise enrollment numbers

	Lower Primary		Higher Primary		High School	
	No.	Students	No.	Students	No.	Students
Government	396	113,250	571	42,499	142	38,191
Aided	2	3,886	14	1,876	26	6,670
Unaided	103	31,915	142	7,408	83	8,097
Others	3	622	20	1,789	16	1,986
Total	504	149,673	747	53,572	267	54,944

Source: District Information System for Education

There are 62 pre-university (PU) colleges with 8,916 students. There are also 14 general colleges, one medical college and three polytechnics (for technical education). There are no engineering and dental colleges in the district.

Table 319: Higher education infrastructure in Koppal district, as of March 2010

Colleges	No.	Students
PU Colleges	62	8,916
General	14	3,954
Medical	1	218
Polytechnic	3	999
Engineering	0	0
Dental	0	0

Source: Koppal District At a Glance 2009-10

For vocational training, Koppal district had a total of 47 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, six were Government ITIs, three were private aided ITIs and remaining 38 were private unaided ITIs. All the 47 ITIs together have a seating capacity of 3,787.

Table 320: Key ITI indicators in Koppal district, as of March 2012

Indicator	Value
Total Number of it is	47
Number of Government ITIs	6
Number of Private aided ITIs	3
Number of Private unaided ITIs	38
Total Seating capacity	3,787
Student pass rate	90-95%
Student drop-out rate	10%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Koppal district, we have found that on an average, of all the students that pass out from an ITI in each year, 75 per cent find jobs in the market. For details on courses offered by ITIs in Koppal, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions. While the Government Department offers courses in trades like horticulture, agriculture, teacher training, personality development etc., the private training institutes

are mainly offering computer courses, horticulture, tailoring, typing, etc. For details of training institutes and courses offered, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Koppal district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- Students from good colleges are able to get jobs in Bangalore and prefer getting placed in Bangalore/nearby bigger cities.
- Students, who are not able to get admissions in good colleges, prefer ITIs. The latter are also preferred because ITI certification helps in obtaining Government and even private jobs. The low fee is an added advantage.
- Students encounter problem with Spoke English and are interested in developing the same
- Training institutes in Koppal lack sophisticated machinery and infrastructure for training. Practical exposure is lacking. Ten to fifteen days of industry training is considered as a viable option by the students to increase their industry exposure.
- Students face difficulty in taking up exams in English or in Hindi, in ITIs
- Students need clarity on career opportunities available to them. Lack of awareness on alternative courses that can be taken up by the students.
- Average salary expected by the students range between Rs.7,000 to Rs.10,000 per month
- First preference is to work within Koppal district only. However, with better salaries willingness to move out of district (even to other States) prevails.
- Preference for white collar jobs as compared to blue collar and manual jobs.

3. Developmental concerns

Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Shortage of skilled manpower within the district:** There are many educational institutions providing formal education and training to the locals. However, the district has shortage of skilled manpower due to inadequate vocational training centres. The district has attracted

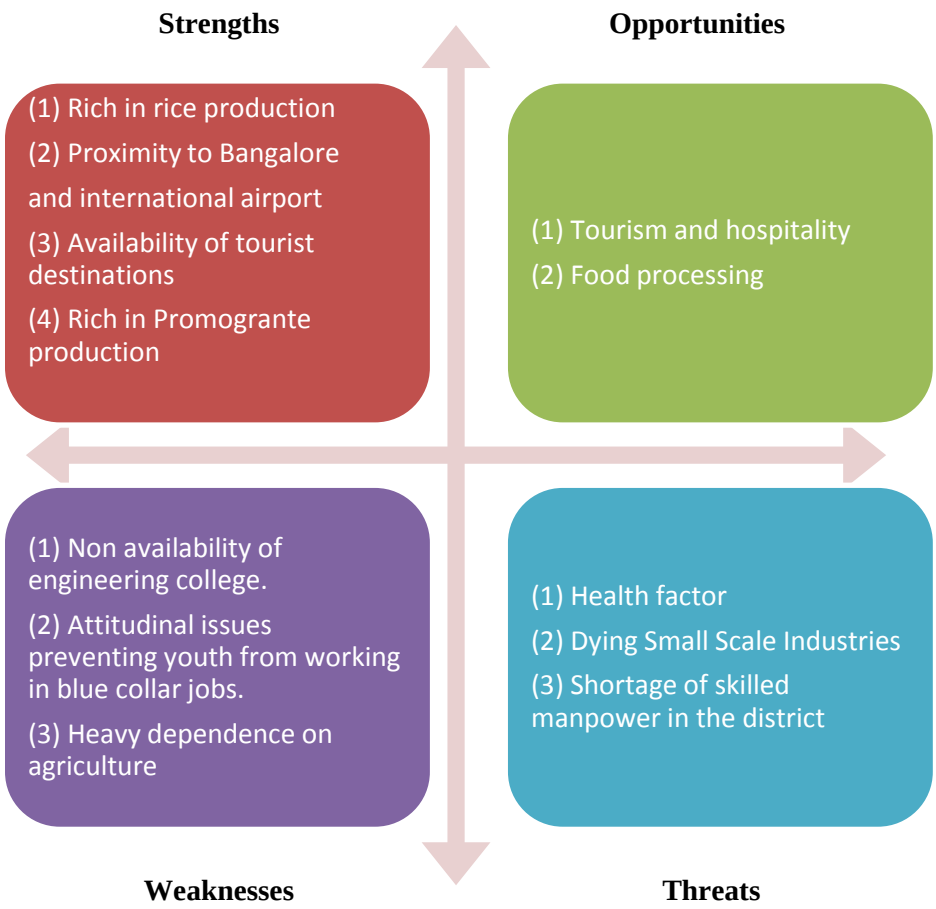
investments from big industry players in sector like steel, etc. However, they face the challenge of finding people locally.

- **Health factor:** Youths with educational qualification of 10th class go for fishing in Rathnagiri district, due to non-availability of any other vocational training centers to build their career. They work there for five to six months and are prone to communicable disease such as AIDS. Total number of HIV +ve patients identified in Koppal is 1163, and it is high in Gangavathi followed by Koppal taluk.

SWOT analysis

Based on the diagnostics of the Koppal district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 183: SWOT analysis of Koppal district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 1.45 lakh persons is likely to be generated in Koppal district.

Agriculture and allied activities and tourism and hospitality have the maximum potential in the district and are likely to provide employment opportunities to many. Other key opportunities are construction materials and building hardware. Within agriculture and allied, thrust will be on the allied activities such as horticulture as well. There is also scope for building construction industry and real estate, healthcare services, transportation and tourism sectors. In addition, as the economy grows, demand for supporting infrastructure such as health and education is also expected to increase.

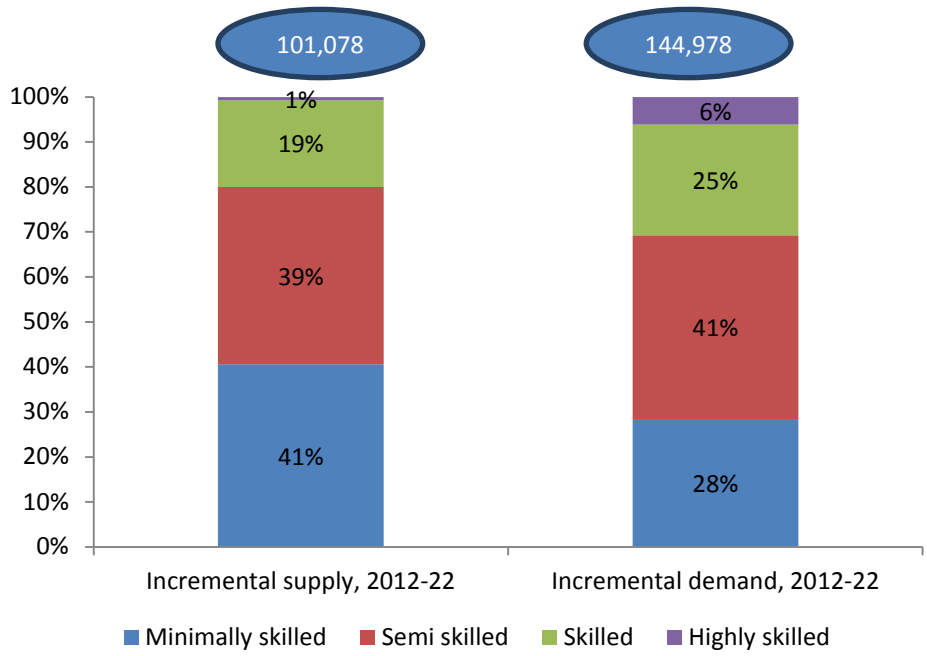
Table 321: Incremental demand in Koppal – 2012 to 2022

SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	48,042	40,012	5,981	1,088	961
Auto and Auto component	175	17	114	35	9
BFSI	4,200	-	2,520	1,260	420
Building, Construction industry and Real Estate	19,585	5,876	9,793	2,938	979
Chemicals & Pharmaceuticals	16	3	5	5	3
Construction Materials and Building Hardware	1,216	122	791	243	61
Education and Skill Development	9,703	-	-	8,732	970
Food Processing	17	5	5	5	2
Furniture and Furnishings	193	77	77	29	10
Healthcare Services	9,076	-	908	6,353	1,815
Textile and Clothing	1,472	294	883	221	74
Transportation, Logistics, Warehousing and Packaging	8,008	1,602	4,645	1,602	160
Tourism, Travel, Hospitality & Trade	43,181	8,636	29,363	4,318	864
Unorganised	51	10	30	10	1
Mining	42	8	25	4	4
Total	**144,978**	**56,663**	**55,139**	**26,844**	**6,332**

Source: IMaCS Analysis

The incremental supply of work-force between 2012 and 2022 is estimated at 1.01 lakh persons. Demand supply gap exist, to meet the demand, additional workforce need to be trained. Major gaps are faced at minimally skilled, skilled and highly skilled levels.

Figure 184: Skill wise incremental demand and supply in Koppal district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

As mentioned above, of the 19 high growth sectors identified by NSDC, only three, namely 'food processing, tourism and hospitality and, construction material' exists in Koppal district (in addition to agriculture). Sector comparison of Koppal with Karnataka is given in Table 89 below.

Table 322: Sectors present in Koppal district – comparison with Karnataka

(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Koppal	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		

High Growth Sectors identified by NSDC	Koppal	Karnataka
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 323: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Food processing	√	√	√
Tourism and hospitality	√		√
Steel	√		√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Construction material and building hardware (Steel)

As of March 2011, Koppal district had nine steel companies under large and medium category, employing 2,774 workers (around 73 per cent of total workers in the large and medium entities). Global Investors Meet (GIM) 2012 has attracted four more players to Koppal (Kalyani Steels Limited, Mukand limited, Lanco and Rajvardhan Industries Private Limited), with a proposed investment of Rs.11,567

crore and expected employment for 10,323 workers. Koppal also has 10,000 acres steel zone in the district. Based on our interaction with the industry players, following is the qualification wise bifurcation of human resource requirement:

Table 324: Qualification wise distribution of human resource in steel industry

Qualification	Expected role	As a percentage of total employees
10^{th}/12^{th} pass	Helper / Semi-skilled labour (on gaining experience)	40%
ITI	Technician/Senior technician – Machine operators / Crane operators / Maintenance fitter / Electrician, etc.	30%
Diploma	Technician/Senior technician / Supervisor	10%
BE	Engineers starting from supervisory level	10%
Others (B.Sc / B.Com/ BA/ MBA/ CA etc) – employed in Purchase/ Commercial/Accounts department	Trainee / Executive / Manager	10%
Total		**100%**

Figure 185: Value chain in steel industry

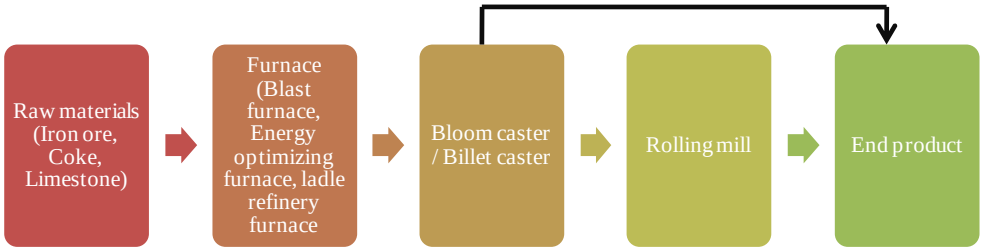


Table 325: Skill gaps in steel industry in Koppal district

Role, educational qualification	Expected competency	Skill gaps
Senior technician/engineers	▪ Process knowledge from the beginning to the end	▪ Analytical ability ▪ Reporting skill

Role, educational qualification	Expected competency	Skill gaps
(Diploma/B.E/ITI with experience) – Mechanical/Electrical/ Metallurgy/Chemical/ Production/Industrial safety	▪ Knowledge on handling and maintenance of machines ▪ Quality checking of end products ▪ Production Planning ▪ Gathering project related information, making reports and presenting it to management ▪ People management ▪ Safety regulations under Factories Act	▪ Most of the them lack Soft skills – especially communication and writing skill
Technician (Diploma/ITI)	▪ Skill to use tools ▪ Handling equipments ▪ Process knowledge ▪ Furnace operating knowledge ▪ Rolling mill operation ▪ Crane (hot metal) operation ▪ Casting operation ▪ Safety skills ▪ Communication skill	▪ Skills to use sophisticated tools ▪ Lack of knowledge on furnace operation ▪ Safety skills ▪ Communication skills

Source: IMaCS Analysis

5.2. Tourism

The district is situated approximately 38 km away from Hampi, a world heritage center and is around 380 kms from Bangalore. Some of the popular tourist locations in the district are:

- **Pampa Sarovara:** It is one the famous Sarovars and is located 45 km from Hampi.
- **Koppal Fort:** Koppal fort is located 400 feet above the plains and was built in 18th century AD with the help of French engineers. It was acquired by Tippu Sultan in 1786 AD from Paleyagar and rebuilt.

- **Temples:** Anegundi village, believed to be the kingdom of monkey is famous for Ranganatha temple, Huchappayana Matha temple, etc, and is located in Gangavathi taluk. Kotilinga temple and Mahadeva temple (built in 1112 AD) are the other famous temples that make Koppal an attractive tourist destination.

Koppal's proximity to Hampi which is a world heritage center, gives a lots of opportunity to make Koppal as an attractive tourist destination to pull Hampi tourist to Koppal as well.

Mahadeva Temple

Figure 186: Value chain – Tourism Industry

Table 326: Skill gaps in tourism industry in Koppal district

Role, educational qualification	Expected competency	Skill gaps
Tourist guides (minimum 12th standard)	▪ Knowledge on tourist spots in and around Koppal ▪ Good English communication skill to interact with national and international tourist	▪ Communication skill ▪ Time management

Role, educational qualification	Expected competency	Skill gaps
	▪ Decision making skills ▪ Ability to handle crises situation ▪ Good behaviour	
Drivers (minimum 10th standard)	▪ Driving skill ▪ Familiarity with routes ▪ Handling problems in vehicle such as tyre changing, minor repairs, etc ▪ Communication ability ▪ First aid and safety skills	▪ English communication skill to interact with tourist ▪ First aid and safety skills

5.3. Hospitality

Trade, Hotels and restaurants accounts for around 4.2 per cent of the district's GDDP at Rs.32,053 lakh. With the growth in tourism, hospitality sector in the district can also be grown. Currently there are hotels concentrated in Hospet, which is part of Bellary district. In Koppal, hotels are available in Hospet road, in Gangavathi taluk and in Koppal district as such. There are opportunities to cater to the requirement of Hampi tourist in Koppal as well. Some of the major areas if skill gaps in Hospitality sector in Koppal are:

Table 327: Skill gaps in Hospitality industry in Koppal district

Role, educational qualification	Expected competency	Skill gaps
Front office assistance (Minimum Graduation)	▪ Customer handling ▪ Call handling ▪ Check in and checkout procedures and billing ▪ Coordinating with other departments travel desk, food	▪ Customer handling skills ▪ Promoting sales ▪ Communication skills

Role, educational qualification	Expected competency	Skill gaps
	and beverage, etc ▪ Knowledge on various products offered by hotel to promote sales ▪ Communication skill	
Travel desk (12th pass/Graduation)	▪ Knowledge on local sites to see ▪ Booking tickets for customers ▪ Communication skill	▪ Communication skills
Food and beverage (High school/Diploma/ Graduation)	▪ Interacting with guest ▪ Knowledge on how to make variety of cuisines ▪ Time management ▪ Handling guest in case of delay ▪ Management of food production ▪ Avoid wastages	▪ Handling customer complaints ▪ Interacting with guest ▪ Knowledge on how to make variety of cuisines
Restaurant (High school/ Diploma/Graduation)	▪ Taking orders and serving ▪ Interacting with customers, understanding their requirement ▪ Being presentable ▪ Billing ▪ Coordination with other departments ▪ Making cocktails, mocktails, etc based on the customer requirement	▪ Servicing skills ▪ Guest handling skills in case of complaints ▪ Communication skills

Role, educational qualification	Expected competency	Skill gaps
Housekeeping (High school/Graduation)	▪ Handling housekeeping equipments ▪ Room cleaning ▪ Keeping common area clean ▪ Collecting laundry and delivering it back ▪ Interacting with customer and handling complaints	▪ New employees need training in all the areas identified under expected competency

5.4. Food Processing

Koppal has around 56 food and intoxicants SSI units employing around 542 persons. As mentioned in the earlier section paddy, jowar, bajra and maize are popular crops in Koppal district. Fruit crop production like pomegranate, mango and banana is high. In addition, oil seeds such as groundnuts, sunflower are also grown. Sugarcane is also one of the major commercial crops of the district.

Figure 187: Agriculture profile in Koppal district

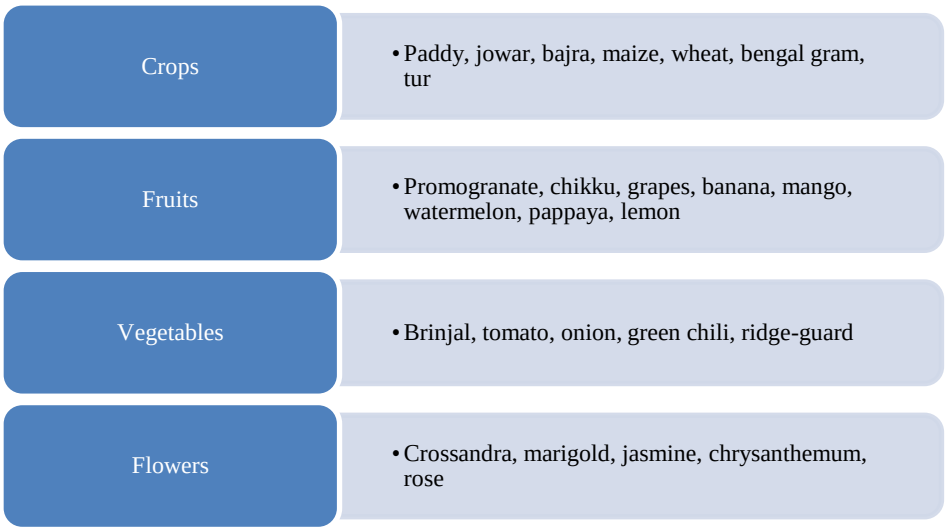
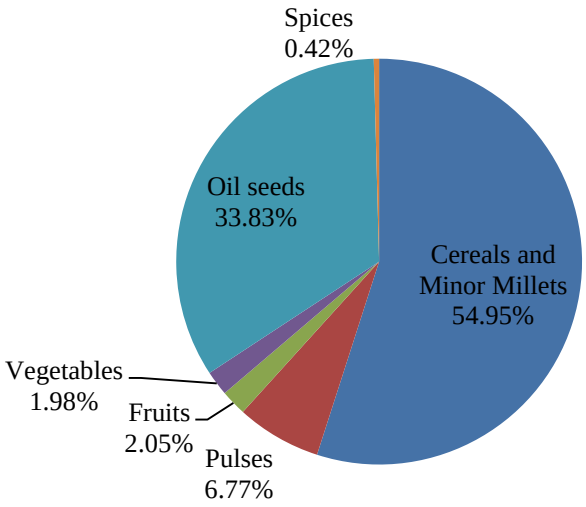


Figure 188: Distribution of area under cultivation in hectares



Total area: 462,295 hectares

Source: Koppal District At a Glance 2009-10

Availability of resource creates opportunities for food processing in Koppal, illustratively making banana chips, producing health mix powders that can be sold in other cities like Bangalore, etc. Building Food Park in 30 acres is under the shelf project for Department of Horticulture / Food Karnataka Limited. Government has also planned for a rice technology park in Koppal district.

Thus, with availability of resource and construction of Food Park there is adequate scope for development of food processing industry in Koppal district. Given the nature of the industry and the kind of skill sets required, majority of the employment will be generated for the candidates with educational qualification of 10th standard and below. This will create potential opportunities for training in food processing techniques, handling food processing machines, sales and marketing, self-employment, etc.

In addition to the sectors mentioned above, Koppal district is also home to many manufacturing and engineering based industries, such as sponge iron, bio mass, etc. While most of them don't have any employment generation or expansion plans in the next few years, they have reported shortage of skilled manpower in some of the key functions like painting, plumbers, electricians, carpentry, masons, etc.

6. Recommendations

As described in the above sections, industries contributing to employment generation in Koppal district for the next five years are:

- Food Processing
- Tourism and Hospitality
- Construction material and building hardware (Steel)

In addition to the above sectors, agriculture also contributes significant number to employment generation in the district. Any kind of up skilling programs related to technology, process and market linkages will assist the farmers in increasing their livelihood income.

Key recommendations given in the below table summarizes the recommendations for private players and government separately, while the details of the same have been elaborated below the table.

Table 328: Key recommendations for Koppal – Summary

Sector	Government	Private training providers	Industry
Agriculture and allied activities	▪ Training is provided by Agriculture department in some of the below listed areas. However, frequent up gradation of training will help the farmers to get better knowledge. ▪ Some of the focus areas for training can be ○ Scientific production methods	▪ n/a	▪ n/a

Sector	Government	Private training providers	Industry
	○ Water conservation ○ Soil conservation ○ Land levelling ○ Production of vegetables under protected conditions – poly house or green house ○ Pest control ○ Soil testing		
Food Processing	▪ Encourage setting up of more large and medium size food processing units to be done by Department of Industries and Commerce ▪ Creating awareness for Food Park to be done by Department of Industries and Commerce	▪ Training centers to provide training in the following areas: ○ Creating awareness on product need and utility ○ Food processing techniques ○ Handling food processing machines ○ Sales and marketing ○ Financial management ○ Self-employment	• Set up large and medium size food processing units ▪ Selling food processing equipments
Tourism and	▪ Promotion of tourist	▪ Training centers to	▪ To set up hotels and

Sector	Government	Private training providers	Industry
hospitality	spots through advertisements, improving the district website for tourism, etc by Department of Tourism	provide training in the following areas: ○ Tourist guides ○ Drivers ○ Front office assistants ○ Cooks ○ Waiters	resorts in the district ▪ Tying up with training providers for job assurance
Construction material and building hardware (steel)	▪ n/a	Private players / NSDC to set up training centers to deliver training in the following areas: Trades to be targeted for Engineer role ○ Analytical ability ○ Reporting skill ○ Most of the them lack Soft skills – especially communication and writing skill Trades to be targeted for Technician roles ○ Skills to use sophisticated tools ○ Lack of knowledge on furnace operation	▪ To set up steel plants in the district

Sector	Government	Private training providers	Industry
		○ Safety skills	

6.1. Agriculture

Koppal has a total area sown at 507,795 hectares, out of which 380,541 hectares is net sown and 127,254 hectares is sown more than once. Agriculture is the main occupation of the people in the district, employing 72.7 per cent of the labour force as either cultivators or agricultural labourers.

Government

Some of the areas of training that can be considered for improving the livelihood of the agriculturist by Department of Agriculture are:

- Scientific production methods
- Water conservation
- Soil conservation
- Land levelling
- Production of vegetables under protected conditions – poly house or green house
- Pest control
- Soil testing

Some of the above listed programs are already offered by the department; however frequent updation will help the farmers to gain better knowledge.

6.2. Food processing

Koppal has around 56 food and intoxicants SSI units employing around 542 persons. Paddy, jowar, bajra and maize are popular crops in Koppal district. Fruit crop production like pomegranate, mango and banana is high. In addition, oil seeds such as groundnuts, sunflower are also grown. Sugarcane is also one of the major commercial crops of the district. Availability of resource creates opportunities for food processing in Koppal district, illustratively making banana chips, producing health mix powders that can be sold in other cities, wines from grapes cultivated, etc. Building Food Park in 30 acres is under the

shelf project for Department of Horticulture / Food Karnataka Limited. Government has also planned for a rice technology park in Koppal district. Some of the interventions required for the development of food processing sector in Koppal are:

- Encouraging medium and large scale food processing units to be done by Department of Industries and Commerce
- Training in food processing areas
- Creating awareness on the usage of the food park to be done by Department of Industries and Commerce
- Setting up of food processing units

Private players

- Private training centres to be established to provide training in various areas as listed below targeting both existing small scale industries and, the large and medium scale units (prospective)
  - Creating awareness on product need and utility
  - Food processing techniques
  - Handling food processing machines
  - Branding and marketing
  - Financial management
  - Self-employment

Government

- Encourage setting up of more large and medium size food processing units to be done by Department of Industries and Commerce
- Creating awareness on the usage of the food park to be done by Department of Industries and Commerce

Industry

- Set up large and medium size food processing units
- Selling food processing equipments

6.3. Tourism and hospitality

The district is situated approximately 38 km away from Hampi, a world heritage center. Anegundi village, is famous for Ranganatha temple, Huchappayana Matha temple, Pampa Sarovara, etc, and is located in Gangavathi taluk. Other location such as Koppal fort, Kotilinga temple, Mahadeva temple makes Koppal an attractive tourist destination. Trade, Hotels and restaurants accounts for around 4.2 per cent of the district's GDDP at Rs.32,053 lakh. With the growth in Tourism, Hospitality sector in the district can also be grown. Some of the interventions required for the development of tourism and hospitality sector in Koppal are:

- Promotion of tourist spots
- Setting up training centres to offer training in tourist guide, driving, front office assistants, cooking, waiters

Private players

With the growth of tourism in Koppal there is scope for development of hospitality sector as well. Private players / NSDC can establish training centres to provide training targeting the below listed functional roles:

- Tourist guides
- Drivers
- Front office assistants
- Cooks
- Waiters

Government

- Promotion of tourist spots through advertisements, improving the district website for tourism, etc by Department of Tourism

Industry

- To set up hotels and resorts in the district
- Tying up with training providers for job assurance

6.4. Construction material and building hardware (Steel)

Koppal district had nine steel companies under large and medium category, employing 2,774 workers (around 73 percent of total workers in the large and medium entities). Global Investors Meet (GIM) 2012 has attracted four players to Koppal with a proposed investment of Rs.11,567 crore and expected employment for 10,323 workers. Koppal also has 10,000 acres steel zone in the district. Some of the interventions required for the development of Steel sector in Koppal are:

- Training in the areas such as furnace operation, safety skill, reporting and analytical skill related to steel industry, etc

Private players

Private players / NSDC to set up training centers to deliver training in the following areas:

- Trades to be targeted for Engineer role across all discipline
    - Analytical ability
    - Reporting skill
    - Most of the them lack Soft skills – especially communication and writing skill
- Trades to be targeted for Technician roles for all the technicians involved in furnace and allied activities, and rolling mill operations
    - Skills to use sophisticated tools
    - Lack of knowledge on furnace operation
    - Safety skills

Industry

- To set up steel plants in the district

9.22. MANDYA

1. Introduction

Mandya district, which was formed in 1939, is known as the land of sugar and rice, due to its rich cultivation and production of sugarcane and paddy and existence of numerous sugar mills. The district comprises of seven taluks. It is bounded by Hassan and Tumkur districts on the north, Tumkur and Bangalore districts on the east, Mysore district on the south and Hassan and Mysore district on its west.

Located between Bengaluru and Mysore, it enjoys a good communication network. Existence of a braod-guage railway line ensures easy transportation of raw materials and finished goods. The district has a total land area of 4,961 sq. km., which is 2.6 per cent of the total State area. It has a total population of 18.08 lakh people, which is about three per cent of the total population in Karnataka.

Majority of the population at about 84 per cent lives in rural areas. Agriculture is the main occupation, employing 73 per cent of the labour force (as of Census 2001). The remaining is in household industry (two per cent) and other workers[44] at 24 per cent. Other than sugarcane, the district is also known for its tourist spots, most of which are of historical significance. These include Ranganath Swamy temple, Ranganathittu Bird Sanctuary, Krishna Raja Sagara Dam, Brindavan Gardens, Shivasamudram and Gumbaz.

[44] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

Since the district is situated close to Bengaluru, many people from the district travel to the State capital on a daily basis for their employment and livelihood. Bengaluru is also the first preference for the district youth.

Table 329: Comparison of Mandya district with Karnataka – key indicators

Indicator	Year	Mandya	Karnataka
Area, in sq.km.	2001	4,961	191,791
Percentage share in State geographical area, %	2001	2.59%	100%
No. of sub-districts	2011	7	175
No. of inhabited villages	2001	1,369	27,481
No. of households	2001	373,672	10,401,918
Forest area as a % of total geographical area	2001	6.00%	13.90%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Mandya district has a population of 18.08 lakh persons – 2.96 per cent of the State population. Majority of the population at 23 per cent each is concentrated in Mandya taluk, followed by 16 per cent each in Maddur and Malavalli taluks, 14 per cent in KrishnaRaja (K.R.) Pet taluk and remaining in other taluks.

The district's literacy rate is 70.14 per cent, which is over nine per cent improvement from its literacy rate of 61.05 per cent in 2001. The 2011 literacy rate is still lower than the State average of 75.6 per cent. Male literacy at 78.14 per cent is higher than female literacy rate at 62.10 per cent.

Most of the population (83.9 per cent) lives in rural areas. In fact, as mentioned earlier, agriculture is also the main occupation of the people of the district, employing 73 per cent of the labour force as either cultivators or agricultural labourers.

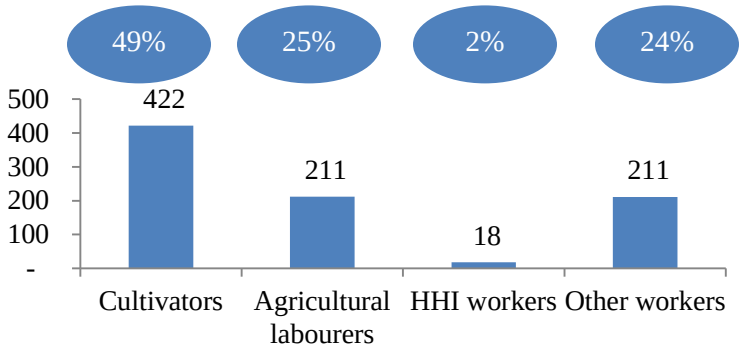
Table 330: Key demographic indicators

Indicator	Year	Mandya	Karnataka
Population, No.	2011	1,808,680	61,130,704
Decadal growth rate of population, %	2001-11	2.55%	15.70%
District's share in State's population, %	2011	2.96%	100%
Urban population as a percentage of total population, %	2001	16.03%	34%
SC population, %	2001	14.02%	16.00%
ST population, %	2001	0.97%	7.00%
Sex ratio, No. of females per 1000 males	2011	989	968
Population density, per sq. km.	2011	365	319
Literacy rate, %	2011	70.14%	75.60%
Main workers, No.	2001	682,440	19,364,759
Marginal workers, No.	2001	157,979	4,170,032
Working age population* as a percentage of total population, %	2001	66%	63%
Work participation rate^, %	2001	48%	45%
HDI	2001	0.61	0.65

** Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*
Source: Census 2001, Census 2011

The district has a total workforce of about 8.6 lakh persons. Of this, 49 per cent are cultivators, 25 per cent are agricultural labourers, two per cent are workers in household industry and 24 per cent are other workers.

Figure 189: Mandya district's worker profile, as of 2011, in thousands

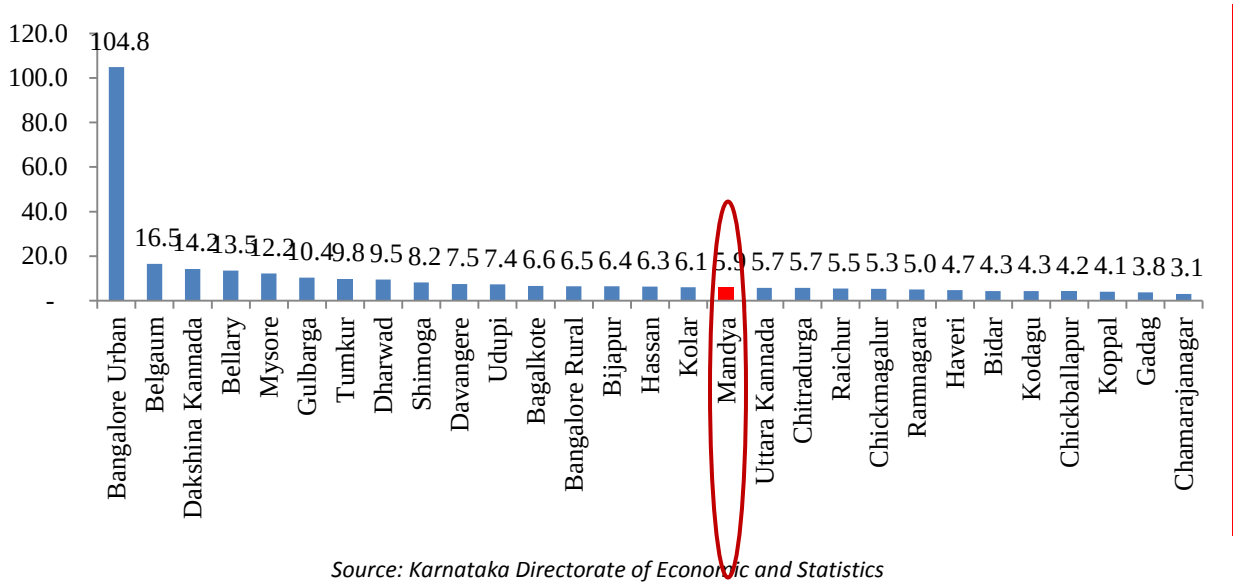


HHI: Household Industry
Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Mandya district had a Gross District Domestic Product (GDDP) of Rs 5,909.67 crore (1.9 per cent of the Gross State Domestic Product). Its per capita income was Rs. 30,571, lower than the State average of Rs. 53,101.

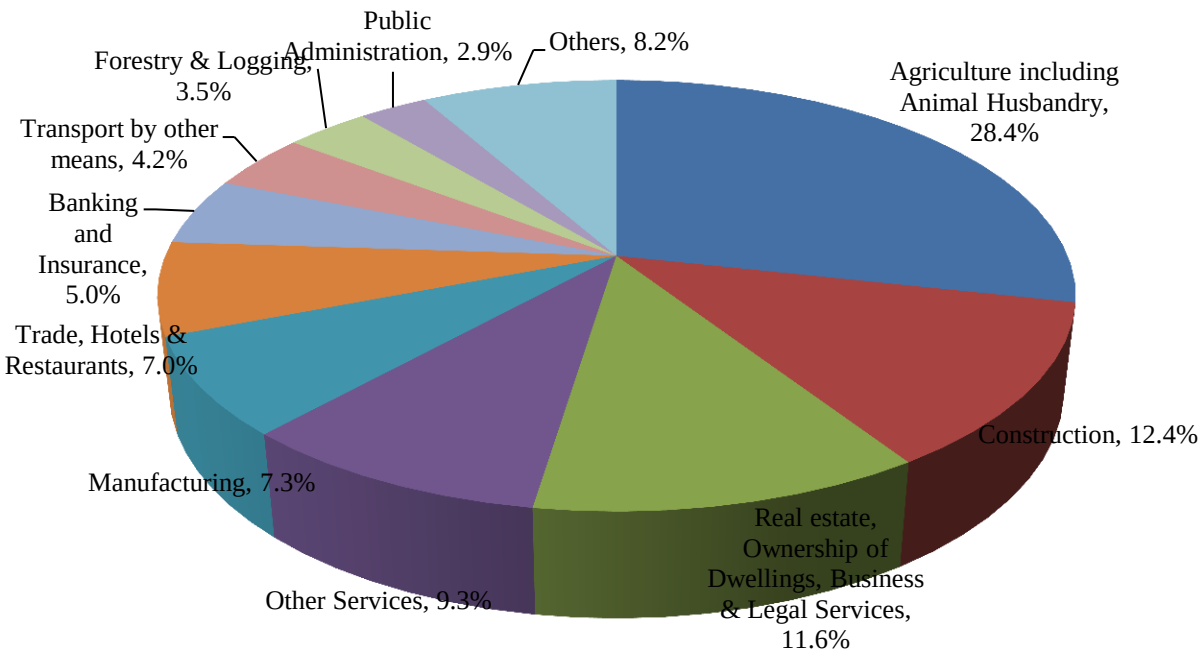
Figure 190: Gross District Domestic Product, in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 43 per cent in 2008-09. This is followed by primary sector at 35 per cent and secondary sector at 22 per cent.

Figure 191: Sector wise distribution of Mandya's GDDP, as of 2008-09, 100% = Rs 5,909.67 crore



Source: Karnataka Directorate of Economic and Statistics

Agriculture: Of the total area of 4,961 sq. km. in the district, about 50.43 per cent is the net sown area (cultivated land). District's agriculture has flourished due to availability of ample water for irrigation from Kaveri and Hemavathi rivers. About half of the agricultural land in the district receives assured irrigation from the Krishna Raj Sagar and Hemavathi reservoirs. Agriculture is mainly dominated by cultivation of paddy, ragi and sugarcane. For details of crops grown in Mandya district, refer to annexures.

Industry: As of March 2011, Mandya district had 13 large and medium scale industries. These employed 45,533 people and had a total investment of Rs. 1,061.19 crore. Six of these were involved in sugar sector alone. Remaining units were involved in production of several items such as dry cells, garments, sun flower oil, kraft paper etc. For the complete list of industries, refer to annexures.

In addition, the district had 389 Small Scale Industries (SSIs), employing 2,253 persons. Majority of these were textile based and job works & repairs based. Refer to annexures for details. The district also has two industrial areas and six industrial estates. For details, refer to annexures.

The district has attracted significant industrial investments in Global Investors Meet (GIM), which was held in 2010 and 2012 in Karnataka. During 2010, five Memorandums of Understanding (MoUs) worth Rs. 478 crore were signed. These are expected to generate employment for about a thousand persons. For details of these projects, refer to annexures.

Karnataka held its second GIM in June 2012. During this event, 15 MoUs / Expressions of Interest / Registrations of Interest were signed for Mandya district alone. These have a proposed investment of Rs. 2,555 crore. The interests have been signed for projects in several sectors including agro, food and horticulture; cement and other minerals; energy; engineering; housing and urban development; and tourism. For details of these projects, refer to annexures.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 43 per cent of GDDP in Mandya district. Of all the services, the key services in the district are of 'real estate, ownership of dwellings, business and legal services' at 11.6 per cent of GDDP.

2.3. State of education

As of March 2010, Mandya district had 2,606 schools with 258,541 students enrolled. There were 123 pre-university (PU) colleges with 30,183 students. There are also 30 general colleges, five polytechnics (for technical education), three engineering colleges and two medical colleges. For details of courses offered by polytechnics, refer to annexures.

Table 331: School education infrastructure in Mandya district, as of March 2011

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Govt.	988	79,498	825	35,178	214	42,904
Aided	3	7,929	32	3,837	68	16,606
Unaided	72	40,292	222	11,243	136	16,593
Others*	3	114	23	2,139	20	2,208
Total	1,066	127,833	1,102	52,397	438	78,311

*Source: DISE 2010-11; *Others include social welfare, local body, other management schools, and central schools.*

Table 332: Higher education infrastructure in Mandya district, as of March 2010

Colleges	No.	Students
PU Colleges	123	30,183
General	30	12,717
Polytechnic	5	1,293
Engineering	3	1,000
Medical	2	200

Source: Mandya District At a Glance 2009-10

For vocational training, Mandya district had a total of 51 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, 10 were Government ITIs, five were private aided ITIs and remaining 36 were private unaided ITIs. All the 51 ITIs together have a seating capacity of 5,777. The student drop-out rate is very high at 20-25 per cent, as many students are not able to cope up with the curriculum and also face pressure from family to join work due to financial reasons.

Table 333: Key ITI indicators in Mandya district, as of March 2012

Indicator	Value
Total Number of ITIs	51
Number of Government ITIs	10
Number of Private aided ITIs	5
Number of Private unaided ITIs	36
Total Seating capacity	5,777
Student drop-out rate	20-25%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Chickaballapur district, we have found that on an average, of all the students that pass out from an ITI in each year, over 75 per cent find jobs in the market. For details on courses offered by ITIs in Mandya district, refer to annexures.

In addition to the above, the district has several private training institutions, which offer training in different courses such as nursing, pharmacy and computers. For detailed list of the institutes, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Tumkur district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- The youth doesn't want to stay in Mandya district. While about 80 per cent want to work and stay in Bengaluru, the remaining 20 person wishes to settle down in Mysore district.
- The preference to move out of Mandya is due to lack of sufficient job opportunities in the district. However, in future, if better job opportunities come up within the district, the youth would be interested in settling down in Mandya only.
- The youth is ambitious and want to study several courses which are not present in the district. Some of these courses include animation, information technology, tool and dye making, interior decorator, architecture, electronics and sugar technology.
- Many youth from rural backgrounds prefer to join ITIs over colleges, as they feel that ITIs present better job opportunities as compared to getting degree from colleges.
- Within ITI, maximum demand is for courses such as fitters, electricians and DMM.
- There is demand for a separate women ITI.

3. Developmental concerns

Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Lack of entrepreneurship:** As per our discussions with some of the key stakeholders in the district, we have found that people in the district lack entrepreneurship and are content with what they have. Over 50 per cent of the district is blessed with ample irrigation, which has traditionally meant prosperity for the region. The prosperity has travelled down the generations and people have lost interest in being more industrious. Besides, there are not many opportunities available in the district, besides sugarcane and related activities. For sugarcane cutting as well, people are hired from Northern Karnataka. Additionally, people are more interested in Government jobs and are happy with whatever the various Government schemes offer.
- **Lack of semi-skilled and unskilled workforce:** As per the stakeholders' discussions, people in the district are not interested in doing manual jobs, which has resulted in lack of semi-skilled and

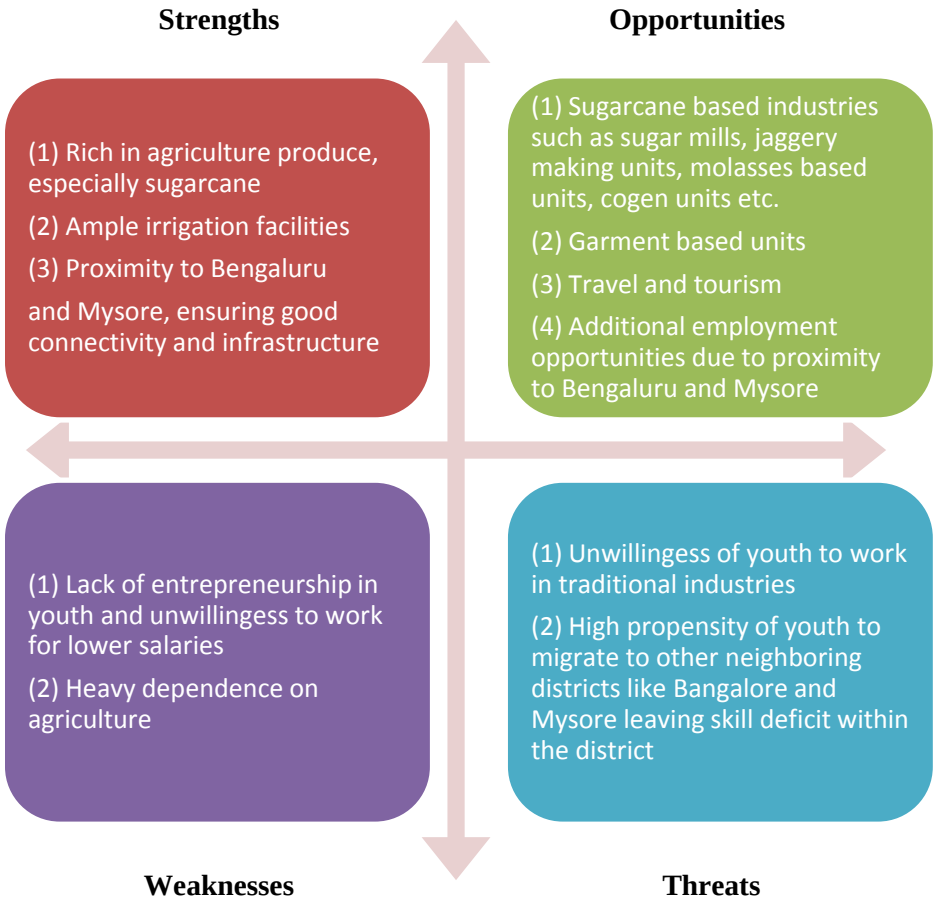
unskilled personnel. The district has high levels of disguised unemployment, despite which people are not willing to take up blue collar jobs.

-

SWOT analysis

Based on the diagnostics of the Mandya district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 192: SWOT Analysis of Mandya district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 2.89 lakh persons is likely to be generated in Mandya district. Agriculture and allied activities are expected to remain the key employer (mainly sugarcane in Mandya) along with travel and tourism. As the economy grows, employment demand in supporting sectors such as construction, transportation, healthcare and education is also expected to increase at a faster rate. However, sectors which are unique to Mandya and where skill up-gradation will be required within Mandya are food processing, textiles and clothing and mainly tourism and hospitality.

Table 334: Incremental demand in Mandya – 2012 to 2022

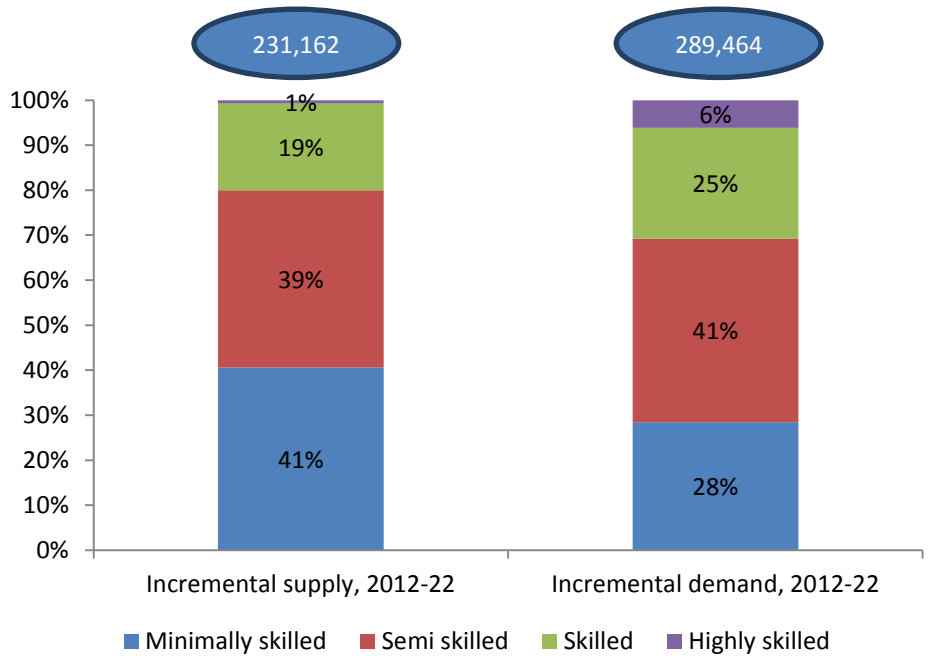
SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	73,523	61,235	9,153	1,665	1,470
BFSI	6,301	-	3,780	1,890	630
Building, Construction industry and Real Estate	34,195	10,259	17,098	5,129	1,710
Chemicals & Pharmaceuticals	88	18	26	26	18
Construction Materials and Building Hardware	2,124	212	1,380	425	106
Education and Skill Development	10,399	-	-	9,359	1,040
Food Processing	754	226	226	226	75
Furniture and Furnishings	171	68	68	26	9
Healthcare Services	26,842	-	2,684	18,789	5,368
Textile and Clothing	934	187	560	140	47
Transportation, Logistics, Warehousing and Packaging	13,253	2,651	7,686	2,651	265
Tourism, Travel, Hospitality & Trade	113,258	22,652	77,016	11,326	2,265
Unorganised	7,623	1,525	4,421	1,525	152
Mining	-	-	-	-	-
Total	**289,464**	**99,031**	**124,100**	**53,177**	**13,156**

Source: IMaCS Analysis

The incremental supply of work-force between 2012 and 2022 is estimated at 2.31 lakh. Going forward, this is estimated to be lower than the demand of persons, indicating that district will have more employment opportunities as compared to the supply available. The supply also falls short of the

demand, as people prefer to move out to Bengaluru and Mysore, rather than working in their own district.

Figure 193: Skill wise incremental demand and supply in Mandya district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on our field surveys in Mandya district, we have found out that sectors where skilling interventions are required are mainly agriculture and allied, food processing, textiles and clothing, and tourism, travel and hospitality. While out of these sectors, maximum demand is expected to be generated in tourism and hospitality, skill up-gradation needs to take place for food processing and textiles and clothing as well.

Table 335: Sectors where interventions are required in Mandya– comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Mandya	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		

High Growth Sectors identified by NSDC	Mandya	Karnataka
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 336: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Food processing (mainly sugar)			√
Textile and clothing (mainly garments)		√	√
Tourism, travel, hospitality and trade (mainly tourism)		√	√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Food Processing (mainly sugar)

Mandya district is in the green-belt and is more commonly known as the sugar bowl of Karnataka. The district is known for its abundant sugarcane production, which has led to establishment of several large and medium scale sugar mills. Some of the prominent names are Mysugar Co. Ltd., Chamundeshwari Sugar Co. Ltd., and Coromandal Sugar Ltd. The sugar companies in the district are located in taluks such as Mandya, Pandavpura, Maddur and K.R. Pete. The companies are a major source of employment to the local farmers, purchase majority of their produce and provide sustainable source of livelihood to them. Many locals are also employed in these sugar mills. However, the functioning of sugar mills is seasonal in nature.

While 60-65 per cent of sugarcane production goes to mills for producing sugar, remaining is used for making jaggery. Jaggery is a cottage industry. It is seasonal and price driven. Jaggery is made by most of the farmers as a part time activity. The district is also home to the 'Jaggery Park'. The jaggery park opened in 2011 in the district and has a capacity to produce 60-70 quintals of jaggery every day. The park is situated at VC Farm in the Regional Agriculture Research Centre in Mandya taluk. The objective of the park is to disseminate new technologies in jaggery production to farmers. It specialises in producing chemical free organic jaggery. There are over 1,000 small jaggery units in the district, employing about 5,000 to 6,000 people.

Jaggery and sugar industry in Mandya district


UNIVERSITY OF AGRICULTURAL SCIENCES, BENGALURU
JAGGERY PARK


CORONADEL SUGARS LIMITED

Figure 194: Value chain in jaggery industry

Figure 195: Value chain in sugar industry

Table 337: Skill gaps in jaggery industry in Mandya district

Role, educational qualification	Expected competency	Skill gaps
Jaggery maker (illiterate to school pass out)	▪ Ability to cut sugarcane or obtain cut sugarcane from the farmer ▪ Ability to operate roller crushers to crush cane into juice ▪ Ability to physically filter juice through mesh filters to remove impurities ▪ Ability to collect clean juice in tanks and pumping it into 3 pan furnace, more commonly known as the 'U.P. furnace' ▪ Ability to run the U.P. furnace ▪ Ability to adjust adequate quantity of lime to remove scum and to adjust pH levels ▪ Ability to add prescribed quantities of chemicals for better colour	▪ Lack of knowledge of cutting sugarcane, for which people are brought from Bellary and Gulbarga ▪ Lack of knowledge on how crusher efficiency can be improved ▪ Inability to run U.P furnaces, for which people are called especially from Uttar Pradesh ▪ Lack of hygiene ▪ Lack of understanding of adequate quantities of

Role, educational qualification	Expected competency	Skill gaps
	▪ Ability to remove scum by strainers ▪ Ability to decide the striking point, after which the juice should be allowed to cool down ▪ Ability to mould the jaggery into required shapes	chemicals. Chemicals are added 10-15 times more than the prescribed limit, which make the jaggery very attractive. However, it also makes it very harmful to eat. ▪ Lack of knowledge on how to make organic jaggery ▪ Lack of knowledge on use of by-products of sugar making such as bagasse and molasses

Source: IMaCS Analysis

Table 338: Skill gaps in sugar industry in Mandya district

Role, educational qualification	Expected competency	Skill gaps
Input Department / Cane Department (illiterate to ITI pass outs)	▪ Delivering weighed cane on feeder table ▪ Feeding cane to cane carrier ▪ Passing cane through cane preparatory devices such as leveller, chopper, cutter and shredder and the ability to operate all these machines ▪ Loading cane to the engineering department	▪ Sugar making is a traditional industry in the district and the skills required are already available with the mills. No skill gaps are observed. ▪ However, lack of agriculture graduates is observed. ▪ Lack of skills in ITI pass outs is also observed, as most of
Engineering Department and Processing	▪ Passing prepared cane through four mills in series where juice is extracted and the residue (bagasse) is conveyed to boilers	

Role, educational qualification	Expected competency	Skill gaps
Department (SLCC pass outs, ITI pass outs, diploma holders and a few mechanical engineers)	▪ Ability to burn the bagasse in boiler to produce super-heated steam ▪ Ability to use super-heated steam to produce electricity in high pressure turbines in power house ▪ Transfer of juice to juice sulphiter through primary juice heater which heats the juice to 70 degree Celcius. ▪ Knowledge of adding adequate quantities of sulphiter milk of lime and supler di-oxide gas so that the reaction can take place ▪ Ability to maintain the pH at 7.0 to 7.1. ▪ Knowledge of treating the juice again at 103 degree Celcius in secondary juice heaters ▪ Sending the heated juice t clarifier for settling the precipitates ▪ Ability to pump the clear juice from the clarifier to quintuple effect evaporator where 80% of water is evaporated and thick syrup is delivered to syrup sulphiter, where SO^2 gas is passed and pH is maintained at 5.0 ▪ Boiling the syrup in vacuum pans to produce sugar crystals ▪ Separation of sugar crystals and mother liquor (molasses) ▪ Ability to obtain sugar by centrifugation of massecuite, which is then dried, graded and sent to bins for bagging	them have to be trained again on shop floor ▪ Also, there is lack of hygiene in the entire sugar making process, which needs to be improved upon.

Source: IMaCS Analysis

5.2. Textiles and clothing industry

Many garment companies are facing shortage of manpower and resources in Bengaluru and are thus slowly moving to nearby districts such as Mandya. Since the district is between Bengaluru and Mysore, it has availability of good infrastructure and logistics as well. The district has already attracted some garment factories such as Shahi Exports, Gokuldas and Strawberry, each employing 1,000 to 3,000 employees. More such companies are likely to set up base in the district.

Workers in a garment factory in Mandya district




Figure 24 given below explains the value chain of the textile and clothing industry. Of the entire value chain, only the circled parts exist in the district. Within the garments industry, the value chain followed in Mandya district is given in Figure 7 below.

Figure 196: Value chain in textiles and clothing industry

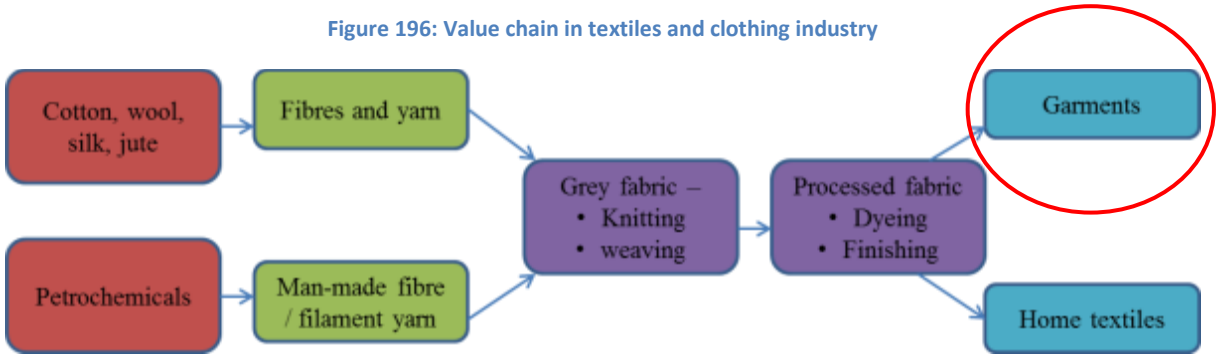


Figure 197: Value chain in garments industry – present in Mandya district

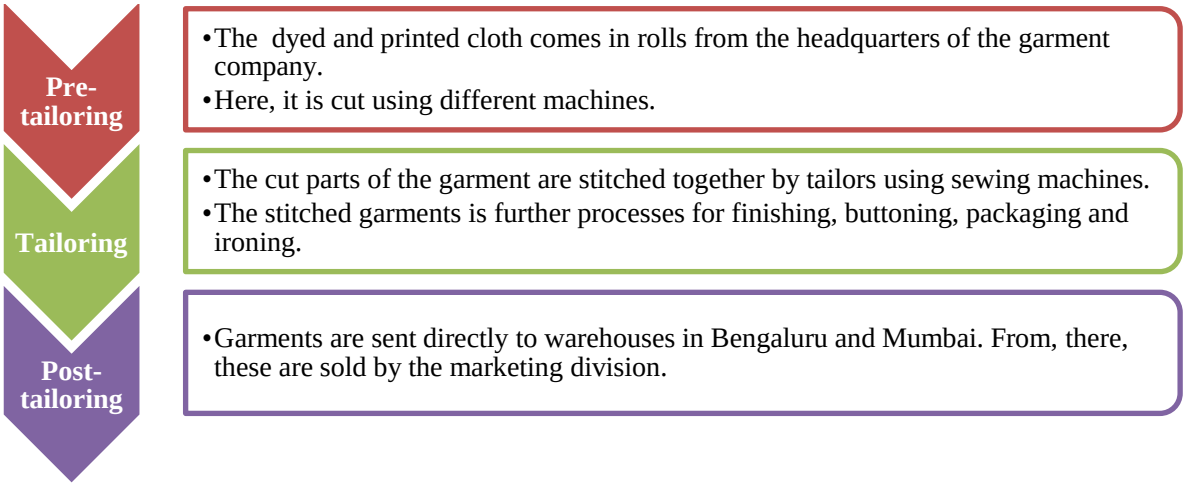


Table 339: Skill gaps in garments industry in Mandya district

Role, educational qualification	Expected competency	Skill gaps
Managers and Assistant Managers (BE in Textiles, BE in Industrial Production and MBA in HR); Line Supervisors (PU pass outs);	▪ Managing all the facilities and the functioning of the work-force ▪ Supervising of the work conducted by operators / tailors and conducting quality checks. ▪ Knowledge of pattern making. ▪ Ability to undertake inspection, production planning and control ▪ In-depth knowledge of production processes	▪ Managers with experience are hired from Bengaluru as experienced people are unavailable in the district. Thus, total lack of this skill in the district.

Role, educational qualification	Expected competency	Skill gaps
Team Leaders (10th pass outs)	and inspection methods ▪ Leadership skills ▪ Soft skills and interpersonal skills ▪ Ability to operate CAD	
Tailors / operators (mostly school drop outs and illiterates)	▪ Tailors are classified into five categories based on their skill level. Higher skills mainly obtained from experience in the industry. ▪ Proficiency in tailoring / stitching is required for stitching garments with different specifications. ▪ Good machine control – knowledge of threading of sewing machine, stitching on different shapes, seaming garment components together in various fabrics to specified quality standard ▪ Knowledge of machine maintenance procedures ▪ Knowledge of pattern making, grading and draping ▪ Ability to understand instructions properly and stitch the garments based on them. ▪ Ability to work in teams / inter-personal skills. ▪ Soft skills ▪ Knowledge of buttoning, ironing and packaging	▪ All locals are hired and trained on-the-job ▪ Some companies have tie ups with external training institutes who train manpower specifically for the garment company

Source: IMaCS Analysis

5.3. Tourism, Travel, Hospitality & Trade

Mandya is known for its tourism places of historical importance and for its natural beauty. The district has several tourist attractions such as:

- Krishna Raja Sagara Dam and Brindavan Gardens
- Daria Daulat Bagh
- Ranganatha Swamy Temple
- Gumbaz
- Ranganathittu Bird Sanctuary
- Shivasamudram
- Kaveri Fishing Camp
- Hosa Holalu Temple
- Kikkeri Brahmeshwara Temple Hemagiri, and
- Kaveri vana

Despite its high potential for travel and tourism, only a limited proportion has been tapped so far. To reap the full benefits of the tourism sector, the district's tourism master plan is currently under discussion. Many tourists visit Mandya district to visit the several tourist spots. However, most of them stay in Mysore only and make only daily trips to the district, undermining the growth of the hospitality industry in the district.

Some of the famous tourist spots in Mandya district

Table 340: Skill gaps in 6.3. Tourism, Travel, Hospitality & Trade industry in Mandya district

Role, educational qualification	Expected competency	Skill gaps
Hotels and other hospitality establishments (hospitality management degree, basic degree)	▪ Managing all the facilities and the functioning of the work-force ▪ Supervising of the work conducted by housekeeping ▪ Soft skills and interpersonal skills ▪ Ability to connect with the guest and solve their problems ▪ Knowledge of the local attractions ▪ Ability to brand their offerings ▪ Overall etiquette	▪ Less managerial staff. Sourcing managerial staff from Bengaluru ▪ Lack of English and communication skills ▪ Lack of caterers with experience in multiple types of cuisines

Role, educational qualification	Expected competency	Skill gaps
Tour operators / guides (illiterate to 10th pass, trained by Tourism department)	▪ Route planning and optimisation ▪ Ability to liaison with airline, hotels and local community ▪ Ability to manage tourist expectations ▪ Customer Relationship Management ▪ Soft skills ▪ Understanding of local and English speaking skills	▪ Lack of soft skills and English speaking skills ▪ Lack of professionally trained guides

Source: IMaCS Analysis

6. Recommendations

Recommendations for Mandya district focus mainly on food processing (which includes sugar mills and jaggery units), textiles and clothing and travel and tourism sector. While food processing and tourism have existed in the district traditionally, textiles sector has started setting base in the district in recent times. Skilling interventions are a combination of interventions to be undertaken by both the Government and the private players.

Table 341: Key recommendations for Mandya district – summary

Sector	Government	Private training providers	Industry
Food processing – sugar and jaggery	▪ Sir M Visvesvaraya Sugarcane Research Institute (MVSRI) in Mandya along with the National Sugar Institute situated in Kanpur can take	▪ Training on use of by-products of sugar such as molasses and bagasse.	▪ All jaggery making units can come under one umbrella on the lines of sugar association in the district.

Sector	Government	Private training providers	Industry
	initiatives to address the issues in sugar industry.		
Textiles and clothing	▪ Strengthen the existing ATDC operating in the district	▪ To open training institutes in collaboration with the industry	▪ Scope for setting up new garment units in the district. ▪ Scope for tie ups with private training providers.
Tourism, travel, hospitality and trade	▪ Promote theme tourism around the historical city of Srirangapatna ▪ Department of Tourism to expand the reach and coverage of its existing programmes	▪ Can set up training centres both in Mysore and Mandya to cater to the manpower needs in the sector for both the districts	▪ Scope for setting up hotels and resorts in the district. ▪ Scope for setting up facilities to start eco-tourism and adventure-tourism.

6.1. Food processing – sugar and jaggery

As discussed in the report, Mandya district is commonly known as the sugar bowl of Karnataka. The district is home to some of the prominent sugar mills including Mysugar Co. Ltd., Chamundeshwari Sugar Co. Ltd., and Coromandal Sugar Ltd. Along with the sugar mills, jaggery making units have also existed parallely in the district in the form of cottage industry only. There are over 1,000 small jaggery units in the district, employing about 5,000 to 6,000 people. The sugar mills are able to meet most of their skill requirements on their own and require only little skilling intervention. The jaggery industry on the other hand is in need of significant interventions.

Government

Sugarcane cutting in the district is undertaken by the manpower coming from Bellary and Gulbarga districts. Locals do not prefer to work in this area not because they lack the requisite skills, but due to lack of interest in any manual work. Currently, training for farmers is held by the sugar association in the district along with the APMC personnel. People for working in the sugar mills are mostly sourced from ITIs. On the job training is provided. However, the industry is currently facing some of the skill issues, which can be addressed by the Government. These issues include:

- Crusher efficiency
- Excessive use of chemicals and fertilisers
- Hygiene and safety issues
- Fuel efficiency issues
- Water harvesting problem, and
- Use of sprinklers

Sir M Visvesvaraya Sugarcane Research Institute (MVSRI) has been opened up the Government in Mandya. The institute along with the National Sugar Institute situated in Kanpur can take initiatives to address the above issues.

For jaggery making, some of the key skill issues are:

- Excessive use of chemicals for jaggery making, most of these extremely poisonous
- Unhygienic work conditions
- Lack of knowledge on manufacture of organic jaggery
- Unorganised form of the sector
- Lack of quality specifications

V.C. Farms in Mandya conducted 4-5 training programmes in last one year, training 500 people on manufacturing or organic jaggery. The trainings were conducted in collaboration with APMC and District Agriculture Training Centre. It will have to continue to focus on doing that.

Private training providers

As mentioned above, skill requirements in the sugar mills are directly met by the sugar mills personnel only and no additional training is required for that. However, training can be provided on use of by-

products of sugar. These are mainly molasses and bagasse, which can be used in distilleries, co-gen and even board making. There is a need to disseminate information on the same.

Industry

To make more impact on the jaggery sector in the district, all the jaggery makers will have to be brought under one umbrella and formed into a jaggery association, on similar lines as sugar association. Once this is achieved, nominated group representatives could be provided pertinent skills for the jaggery sector, which could further disseminate this information and knowledge to other members of the associations.

6.2. Textiles and Clothing

Mandya district is benefitting due to its proximity to Bengaluru. As labour and real estate becomes dearer in Bengaluru, more garment companies are moving to nearby districts – Mandya being one of them. Some of the prominent names have already set base in Mandya. These include - Shahi, Gokuldas and Strawberry. Most of them need trained manpower and are currently meeting it in-house. Gokuldas has tied up with IL&FS for getting trained manpower for its factory. However, as more and more companies are attracted towards Bengaluru, a ready pool of manpower in the garments sector will be required in the district.

Government

The Department of Textiles can play an active role in this sector by strengthening the existing ATDC in the district. The centre can expand its capacity, upgrade the syllabus and quality of faculty and courses taught.

Private training providers

Private players can provide training to youth, mainly women in the garment industry. The remunerative model for the same would be to join hands with garment factories. While the garment units can provide their latest machines and skills, training centres can take up the onus of generating dedicated trained workforce for the industry. It will also be necessary to obtain the necessary certifications from the Government. There are a few NGOs also who provide training in tailoring. They also need to ramp up

their infrastructure and faculty if they need their course to be valued better. If they lack the necessary resources for the same, they can also try tying up hands with the players in the garment industry.

In garment industry, key skills required are:

- Machine control
- Rolling paper training
- Cutting and stitching
- Buttoning and accessorising
- Time management
- Inter-personal skills
- Adherence to norms
- Health and hygiene, and
- Safety measures

Industry

Given the availability of cheap labour in the district and also the district's proximity to Bengaluru, there is scope for setting up more garment units in the district. In addition, the garment units need to collaborate with private training institutes and work in close collaboration. While the training institutes can train people based on specific requirements from the industry, the garment units can assure employment.

6.3. Tourism, travel, hospitality and trade

As discussed in the report, Mandya district has many tourist spots. However, the hospitality industry has not thrived in the district as the tourists who visit Mandya set their base in Mysore district only, which has better availability of hotel infrastructure. Nevertheless, the district is preparing its 'District Tourism Master Plan' which is expected to provide a lift to the sector. As the tourism industry thrives in the district, the manpower requirements will arise in hospitality industry as well as for tourist guides and travel operators.

Government

The Department of Tourism needs to expand its tourist guides programme to cover more youth in the district. The key skill which needs to be addressed through the tourist guide programme is the ability to

speak fluent Kannada and English. While Kannada is not mostly an issue, English speaking skills are a constraint. Also, emphasis needs to be laid on improving communication and other soft skills.

In addition, the Department of Tourism also needs to address the infrastructure gap in the district. Currently, there is a shortage of hotels and resorts in the district. Incentives can also be given to the private players who are interested in setting up hotels here. In addition, there is a need to improve last mile connectivity for the tourist spots in the district. Since the district is also home to Srirangapatna taluk (also known as the historical city), theme based tourism can also be promoted. Branding of tourism can help attract more tourists into the district.

Private training providers

The private players can also join hands with the Government and tap this opportunity by opening up skill training institutes for this sector in the district. Presently, the district doesn't have any training institute providing training in this area. Such institutes can be started. The institutes can also be located in the nearby Mysore district and can cater to the students to both in Mysore and Mandya districts. Given below are the key areas where training can be imparted:

- Hospitality related skills: mainly housekeeping, catering, cooks, gardening, cleaning and facility management
- Training for tourist guides
- Training for tour operators
- Key focus on English speaking, communication and soft skills
- Trainings to be a combination of skill development programmes and EDP

Industry

As mentioned earlier, the district lacks adequate hotel infrastructure. Due to this, most of the tourists who visit Mandya stay in Mysore only. Thus, there is potential for setting up more hotels and resorts in the district. In addition, facilities can also be created for eco-tourism and adventure tourism.

6.4. Others

Other trades and skills where training is required in the district are:

- Welding, communication skills, attitudinal changes, time sense, dress sense, plumbing and sanitation.
- Need training in sectors which exist in Bengaluru, as youth prefer to move to Bengaluru for employment. Some of the sectors in demand include BPO / call centres, retail and manufacturing.

9.23. MYSORE

1. Introduction

Mysore district is one of the most prominent districts in Karnataka. Its prominence can be gauged from the fact that the State of Karnataka was previously known as the Mysore State. The district was ruled by the Wodeyars from the year 1399 till India's independence in 1947. The district is home to the Mysore city, which is also known as the City of Palaces. It is one of the most prominent tourism destinations in the State and is known for its many Palaces, including the famous Mysore Palace. The Dasara festival held at the Mysore Palace every year attracts tourists from all over the world. The festival is till date attended by the members of the erstwhile Royal family.

Mysore also holds a key place in the economy of Karnataka. It makes the fifth largest contribution to the State's GSDP and also has the fifth largest population in the State, as compared to the remaining 29 districts. The district has a total land area of 6,854 sq. km., which is 3.6 per cent of the total State land area. It has seven sub-districts. The Mysore sub-district itself contributes to 39 per cent of the district population, followed by Nanjangud sub-district at 14 per cent, T. Narasipura sub-district at 11 per cent, Hunsur sub-district at 10 per cent and remaining by other sub-districts – namely H.D. Kote, K.R. Nagar and Periyapatna.

While the district has rich agricultural production, it is also home to many industries. Big companies such as Infosys, Wipro, L&T, Nestle, BEML, J.K. Tyres, Jubilant Organosys and TVS Motors have set their base in the district. The district administration itself is currently in the process of encouraging more and more service sector oriented companies in the district.

Table 342: Comparison of Mysore district with Karnataka – key indicators

Indicator	Year	Mysore	Karnataka
Area, in sq.km.	2001	6,854	191,791
Percentage share in State geographical area, %	2001	3.57%	100%
No. of sub-districts	2011	7	175
No. of inhabited villages	2001	1,216	27,481
No. of households	2001	545,741	10,401,918
Forest area as a % of total geographical area	2001	9.29%	13.90%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Mysore district has a population of 29.9 lakh persons – 4.9 per cent of the State population. While 65 per cent of the population in the district is in working-age group (15 to 64 years), about 42 per cent is actually working i.e. work participation rate.

The district's literacy rate is 70.08 per cent, which is lower than the State average of 75.6 per cent and also the All-India average of 74 per cent. Of the 30 districts in the State, Mysore ranks 18th on Gender Development Index (GDI), with a value of 0.605.

Most of the population (62.8 per cent) lives in rural areas. Agriculture is the main occupation of the people of the district, employing 58 per cent of the labour force as either cultivators or agricultural labourers. Of the remaining workers, while two per cent are employed in household industries, about 40 per cent are employed as 'Other workers'.[45] As of Census 2011, total workforce in the district is estimated at 12.59 lakh persons.

[45] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

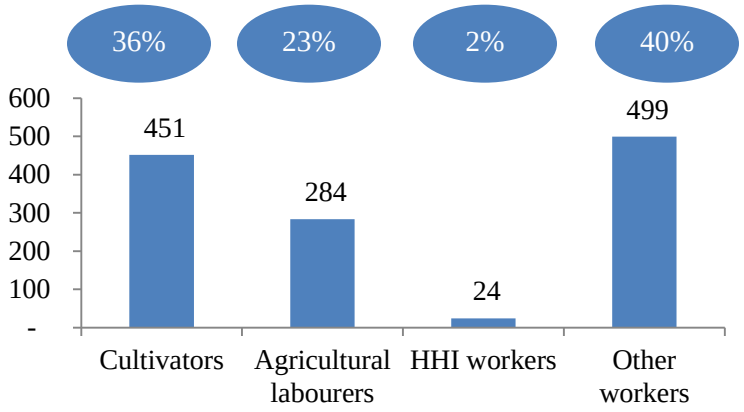
Table 343: Key demographic indicators

Indicator	Year	Mysore	Karnataka
Population, No.	2011	2,994,744	61,130,704
Decadal growth rate of population, %	2001-11	15.75%	15.70%
District's share in State's population, %	2011	4.9%	100%
Urban population as a percentage of total population, %	2001	37.20%	34%
SC population, %	2001	17.71%	16.00%
ST population, %	2001	10.27%	7.00%
Sex ratio, No. of females per 1000 males	2011	982	968
Population density, per sq. km.	2011	437	319
Literacy rate, %	2011	70.08%	75.60%
Main workers, No.	2001	926,129	19,364,759
Marginal workers, No.	2001	184,135	4,170,032
Working age population* as a percentage of total population, %	2001	65%	63%
Work participation rate^, %	2001	42%	45%
HDI	2001	0.631	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

Figure 198: Mysore district's worker profile, as of 2011, in thousands



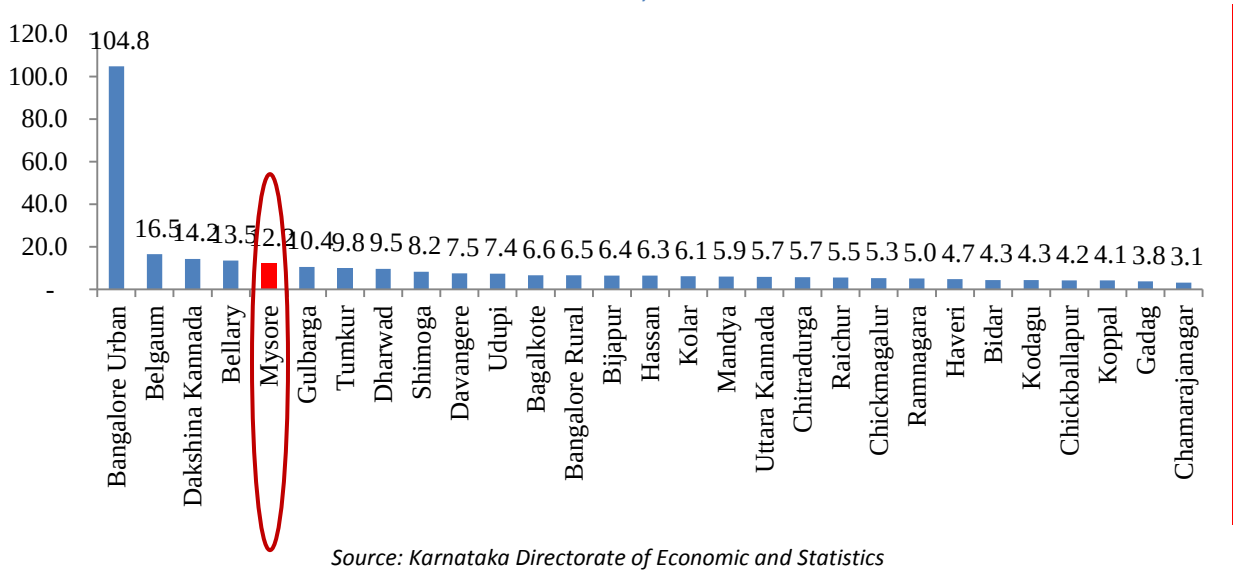
HHI: Household Industry

Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Mysore district had the fifth largest Gross District Domestic Product (GDDP) in Karnataka at Rs 12,168.93 crore (4.0 per cent of the Gross State Domestic Product). In terms of per capita GDDP though, it ranked 11th amongst 30 districts at Rs 42,039. This was lower than the State average of Rs 53,101.

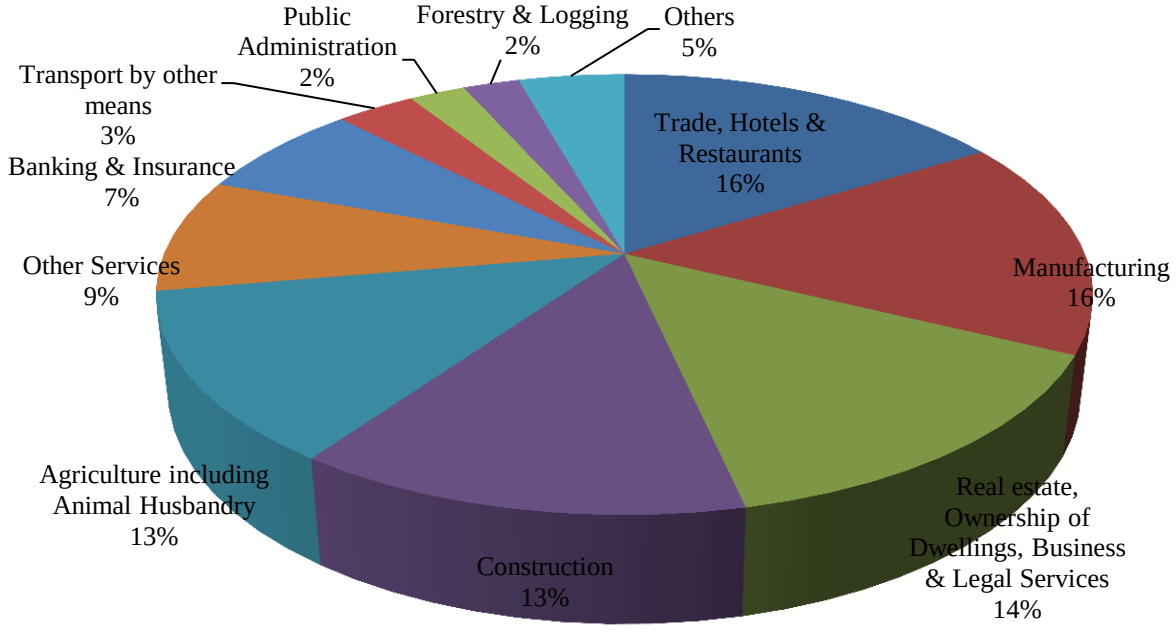
Figure 199: Gross District Domestic Product, in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 54 per cent in 2008-09. This is followed by secondary sector at 31 per cent and primary sector at 15 per cent.

Figure 200: Sector wise distribution of Mysore's GDDP, as of 2008-09, 100% = Rs 12,168.93 crore



Source: Department of Economics and Statistics, Karnataka

Agriculture: Of the total area of 6,763 sq. km. in the district, close to 50 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of paddy and ragi under food crops and tobacco and cotton under non-food crops. For details of crops grown in Mysore district, refer to annexures.

Industry: As of 31st December 2011, Mysore district had 57 large and medium scale industrial units, employing over 20,000 persons. These included big companies such as AT&S India Private Limited, Bacardi Martini India Private Limited, Bannari Amman Sugar Limited, Chamundi Textiles, Infosys Technologies, Jubilant Organosys, TVS Motors, Wipro Infotech, Hindustan Lever Limited, Larsen and Toubro, Bharat Earth Movers Limited, Nestle India, and JK Tyres Limited (Refer to annexures complete list).

Mysore also has 23,018 Small Scale Industries (SSIs), employing 107,832 persons. As of March 2010, majority of these were wood based industries at 16.9 per cent, followed by textiles based units at 14.9 per cent, food and intoxicants based units at 14.6 per cent and remaining in others. Refer to annexures for details. The district has nine industrial areas and six industrial estates developed by KIADB and KSSIDC respectively. For details, refer to annexures.

Mysore district is attracting significant investments from industrial players. During the Global Investors Meet (GIM) held in 2010 in Karnataka, 13 Memorandums of Understanding (MoUs) amounting to Rs 3,2013 crore were signed for the district. Once set up, these are estimated to employ 14,018 persons. Of eight, currently 12 projects are under implementation. For list of these projects, refer to in annexures.

Karnataka held its second GIM in June 2012. During this event, 22 MoUs / Expressions of Interest / Registrations of Interest happened for Mysore district alone. These have a proposed investment of Rs. 4,043 crore. These are expected to provide direct employment to over 54,000 persons. The interests have been signed for projects in several sectors including agro, food and horticulture; automobiles, IT and electronics, textiles and apparels, education and tourism. For details of these projects, refer to annexures.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other

services. As mentioned above, services account for 54 per cent of GDDP in Mysore district. Of all the services, the key services in the district are of 'trade, hotels and restaurants' at 16.2 per cent of GDDP, followed by 14.3 per cent in 'real estate, ownership of dwellings, business and legal services' and remaining in others.

2.3. State of education

As of March 2010, Mysore district had 3,217 schools, with 462,287 students enrolled. There are 182 pre-university (PU) colleges with 59,787 students. There are also 18 general colleges, four medical colleges, 12 polytechnics (for technical education), six engineering colleges and two dental colleges. For details of courses offered by polytechnics, refer to annexures.

Table 344: School education infrastructure in Mysore district, as of March 2011

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Govt	1,005	123,974	954	55,746	216	63,377
Aided	8	18,352	101	9,029	97	26,465
Unaided	119	86,655	358	28,497	281	40,230
Others	5	3,923	49	3,245	24	2,794
Total	1,137	232,904	1,462	96,517	618	132,866

Source: DISE 2010-11

Table 345: Higher education infrastructure in Mysore district, as of March 2010

Colleges	No.	Students
PU Colleges	182	59,787
General	18	11,674
Medical	4	2,319
Polytechnic	12	7,201
Engineering	6	11,774
Dental	2	689

Source: Mysore District At a Glance 2009-10

For vocational training, Mysore district had a total of 56 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, seven were Government ITIs, 10 were private aided ITIs and remaining 28 were private unaided ITIs. All the 56 ITIs together have a seating capacity of 6,153.

Table 346: Key ITI indicators in Mysore district, as of March 2012

Indicator	Value
Total Number of ITIs	56
Number of Government it is	7
Number of Private aided it is	10
Number of Private unaided it is	28
Total Seating capacity	6,153
Student pass rate	80%
Student drop-out rate	30-40%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Mysore district, we have found that on most of the students passing out from the ITIs find jobs. The drop-out rates are high due to absenteeism, distance between ITI and rural areas and due to economically poor backward of the students. They have to drop-in mid-way also to find jobs. For details on courses offered by ITIs in Mysore, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions. The Government Departments offer courses in trades such agriculture marketing, languages, plastic technology, teacher training, sericulture, disaster management, fish breeding and marketing, forest protection, fisheries, tool and dye making, reeling, crafting, health, rural and tribal development, etc.

The private training institutes are offering training in courses such as physiotherapy, Ayurveda, nursing, teachers training, hotel management, pharmacy, CAD / Auto CADD, multimedia, hardware, software, tally and animation. For details of courses offered by private training institutes in Mysore district, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Mysore district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- Youth from all over the district prefer to move to Mysore city to study as they consider that educational institutions are better in the city as compared to the rural areas. However, about 50 per cent of the students wish to have hostel facilities.

- Youth prefer to work in companies such as Toyota, Maruti, Kalyani Motors, BEML and more importantly in Government jobs.
- About 50 per cent of the youth wish to go for higher education.
- About 80 per cent of the youth prefer to work within their own district – Mysore.
- Preference is for Government training institutes as compared to private, as the fee is low (in fact stipend is provided) and job opportunities are believed to be better.
- There is high demand for the MRAC course (Mechanic Refrigeration and Air Conditioning), as demand for this trade is high in the Gulf country and many youth are desirous of moving there for earning higher income.
- Youth feel that there is a significant lack of latest machinery and equipment in the training institutes. Some machines are believed to be as old as 40 years. There is also shortage of raw materials for training purposes.

3. Developmental concerns

Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

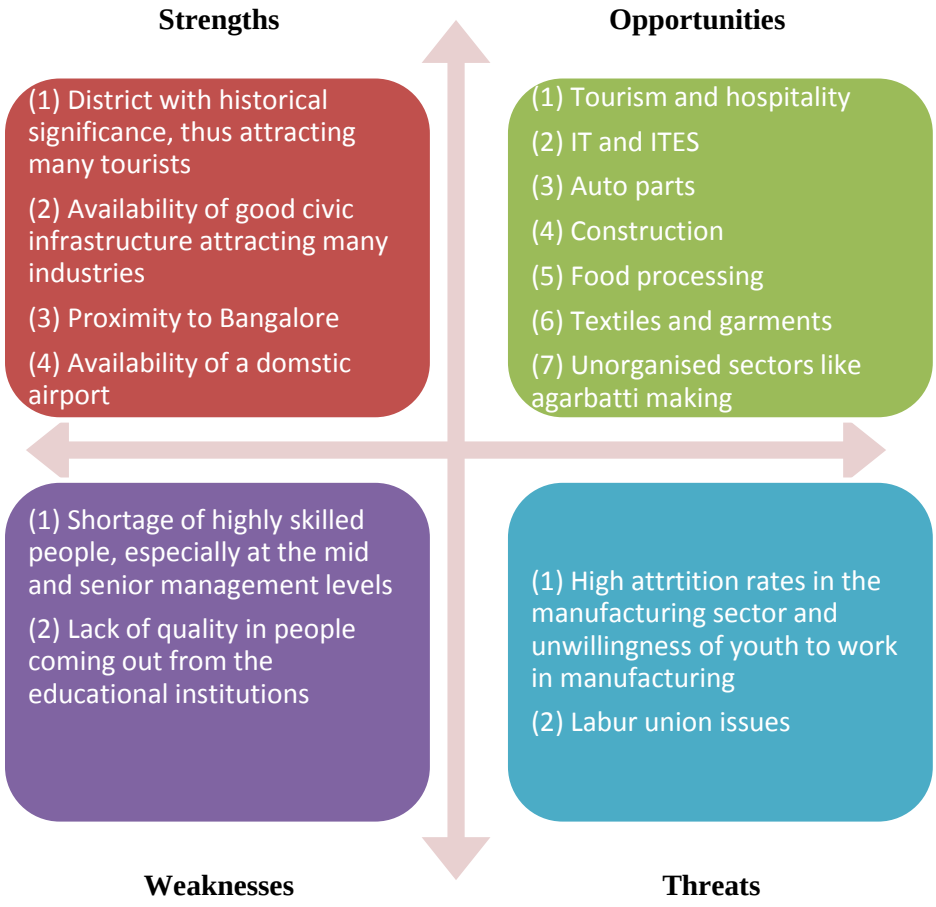
- **Unwillingness of the highly skilled manpower to move to Mysore:** With many big companies setting up their base in Mysore, one of the key challenges faced by them is to attract manpower in the mid-level and senior levels. While people at unskilled / minimally skilled / semi-skilled levels are available in the district, people at mid management and senior levels are not available in sufficient numbers. People at such levels prefer to work in cities like Bangalore, Delhi and Mumbai. They do not want to settle down in Tier II cities. Thus, creating a shortage of people at these levels in Mysore.
- **Labour union issues:** Based on our industry discussions, we found that some of the industries such as textiles are facing issues on the labour front. They reported strong labour unionism, which is hindering industrial production. Due to this, some of the textile companies in the district are considering shutting their shop in Mysore and moving to Tamil Nadu instead.
- **Attitudinal issues:** Many companies, especially in the manufacturing sector, reported that youth is not inclined towards working in the manufacturing related activities. Such activities are considered as those involving a lot of hard work and also involve working in shift systems. Industry discussions revealed that shortage of youth is being faced by the industries which

require hard work, as youth are preferring to move to easy jobs such as retail sales executives in the malls / upcoming malls and super-markets in the district.

SWOT analysis

Based on the diagnostics of the Mysore district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 201: SWOT Analysis of Mysore district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 7.41 lakh

persons is likely to be generated in Mysore district. Major growth in employment will be driven by sectors such as travel, tourism and hospitality, IT & ITES, agriculture and allied, building, construction and real estate.

Table 347: Incremental demand in Mysore – 2012 to 2022

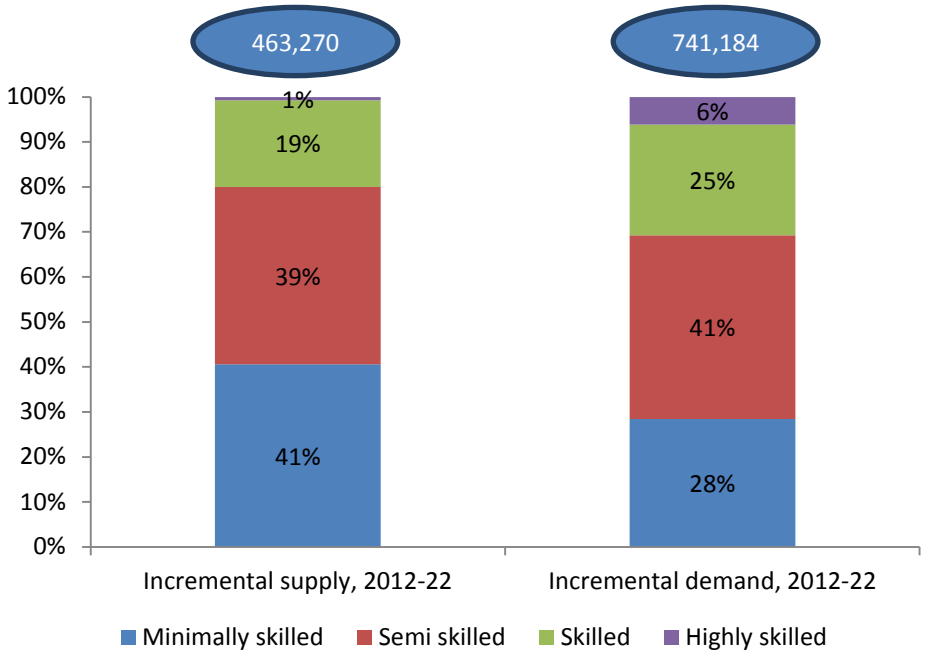
SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	77,210	64,306	9,612	1,749	1,544
Auto and Auto component	2,135	214	1,388	427	107
BFSI	13,415	-	8,049	4,025	1,342
Building, Construction industry and Real Estate	75,542	22,663	37,771	11,331	3,777
Chemicals & Pharmaceuticals	1,131	226	339	339	226
Construction Materials and Building Hardware	4,691	469	3,049	938	235
Education and Skill Development	18,029	-	-	16,226	1,803
Electronics and IT hardware	410	41	205	144	21
Food Processing	449	135	135	135	45
Furniture and Furnishings	765	306	306	115	38
Healthcare Services	38,541	-	3,854	26,979	7,708
IT & ITES	248,406	-	173,884	62,102	12,420
Organised Retail	17,961	1,796	12,573	2,694	898
Textile and Clothing	4,745	949	2,847	712	237
Transportation, Logistics, Warehousing and Packaging	22,099	4,420	12,818	4,420	442
Tourism, Travel, Hospitality & Trade	214,195	42,839	145,653	21,420	4,284
Unorganised	1,458	292	846	292	29
Mining	-	-	-	-	-
Total	**741,184**	**138,654**	**413,328**	**154,046**	**35,156**

Source: IMaCS Analysis

The incremental supply of work-force between 2012 and 2022 is estimated at 4.63 lakh. This is lower than the demand. The higher demand is expected to be met from workforce migrating from nearby districts and also by people moving from other districts and States to meet the upcoming demand in IT/ITES sector in the State.

While there is excess supply of manpower at the minimally skilled levels, there is excess demand at semi- skilled and highly skilled levels, indicating the need to up-skill the minimally skilled workforce in the district.

Figure 202: Skill wise incremental demand and supply in Mysore district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on our field surveys in Mysore district, we have found out that skilling interventions are required for many sectors in the district. These are highlighted in green in the table below. In addition, the district also has other manufacturing and engineering industries, which do not have significant employment generation potential, but are facing shortage of skilled manpower for functional skills such as plumbing, electrical, welding, metallurgy etc.

Table 348: Sectors where interventions are required in Mysore– comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Mysore	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		

High Growth Sectors identified by NSDC	Mysore	Karnataka
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		

Source: IMaCS Analysis. Note: The district also has companies in sectors such as building and construction industry, construction materials, electronics and pharmaceuticals. However, their presence is small only and thus we have clubbed them in the 'Others' category in the skills gap section.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 349: Level of skilling required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Auto and auto components		√	√
Food processing		√	√
IT/ITES	√		√
Organised retail		√	√
Textiles and clothing		√	√
Tourism, travel, hospitality and trade	√	√	√
Unorganised sector (agarbatti making, sandal products and handicrafts)	√	√	√
Others[2]	√	√	√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Auto and auto components + Chemicals based (mainly tyres used for auto industry)

Mysore district is home to a few companies involved in auto and auto components industry. Some of them include TVS Motors, Rane (Madras) Limited, Urga Precision Engineering, JK Tyres Industries Limited and Falcon Tyres Limited. The district also has 63 automotive based SSIs, employing 564 persons. A few auto servicing companies also exist in the district. During GIM 2010 and 2012, MoU for expansion plans were also signed by JK Tyres (tyre manufacturing) and also Kalyani Motors (multi-brand car servicing).

The industry's concentration in the district is mainly on the manufacturing front. Sales and distribution of their products is primarily done by their head offices located either in Bengaluru, Chennai or Mumbai. Based on our discussions with some of the stakeholders, we have found that the industry is facing a few skill gaps. These are mentioned in the Table 350 below.

Figure 203: Value chain in tyre manufacturing sector in Mysore

Table 350: Skill gaps in auto and auto component in Mysore district

Role, educational qualification	Expected competency	Skill gaps
Unit / Plant Head (Engineer and / or MBA with industry experience)	▪ Ability to manage the workforce ▪ Ability to give strategic ideas ▪ Knowledge of market trends ▪ Knowledge of training required ▪ Record maintenance ability	▪ No skill gap observed here. Most of the managers are able to handle their responsibilities effectively

Role, educational qualification	Expected competency	Skill gaps
	▪ Highly qualified in personnel and soft skills	
Department Heads (Engineers and experienced diploma holders)	▪ Knowledge of machinery and tools ▪ Ability to trouble shoot ▪ Shop floor management ▪ Compliance to quality measures ▪ Soft skills	▪ Lacking quality manpower in instrumentation and electronics
Supervisors (Diploma in electrical, auto, mechanical, ITI qualified)	▪ Ability to supervise activities conducted in the department for which responsibility is entrusted. ▪ Ability to train the new comers ▪ Overseeing the safety of all workers ▪ Complete understanding of all safety regulations and ability to handle safety issues ▪ Give the specifications to the operators and welders/fitters	▪ Lacking quality manpower in instrumentation and electronics
Workmen (experience based – PUC, SLC, ITI – electrical, electronics, welders, instrumentation	▪ Basic ability to handle the machines ▪ Understand the basic safety aspects ▪ Do the given module of the assembly line to them to the specifications	▪ Lack the discipline to come and put in the required hours of work ▪ Attrition rate is high ▪ Shortage of welders ▪ Quality issues with people coming out of ITIs. Have only theoretical

Role, educational qualification	Expected competency	Skill gaps
and boiler attendants)		knowledge, lack practical knowledge
Helpers / machinery attendants (High school pass)	▪ Ability to help operators with their day to day functions ▪ Help in cleaning the machines ▪ Help in loading and un-loading	▪ Shortage of welders ▪ Quality issues with people coming out of ITIs. Have only theoretical knowledge, lack practical knowledge

Source: IMaCS Analysis

5.2. Food Processing

Mysore is home to several large and medium scale food processing companies, such as Nestle India Limited, Hindustan Lever Limited and a couple of sugar mills as well. It is also home to a couple of distilleries, namely Bacardi Martini India Private Limited and Chamundi Distelleries Private Limited. The district also has 3,357 food and intoxicants based SSIs, which employ over 9,600 persons. More and more food processing companies are planning to set up base in Mysore. Based on upcoming investments from GIM 2010 and 2012, following are the upcoming players in this sector:

- Skol Breweries Ltd. – beer production
- Expansion plans of Chamundi Distilleries – alcohol
- Expansion plans of Nestle – instant noodles
- Parle Agro Pvt. Ltd. – beverages
- United Breweries Ltd. – beer
- Expansion plans of Bannari Amman Sugars Limited – sugar
- Shree Gluco Biotech Pvt. Ltd.

Most of the food processing companies are highly mechanised and have very little employment generation potential. Most of the big companies also have tie-ups with educational institutions across India to hire top cream of students. However, based on our discussions with some of the stakeholders,

we have found that most of the manpower has to be re-trained on the job, as the educational institutions are providing only theoretical knowledge.

Figure 204: Value chain in the food processing industry

Circled part is the one which exists in Mysore.

Table 351: Skill gaps in food processing industry in Mysore district

Role, educational qualification	Expected competency	Skill gaps
Managers and Assistant Managers (BE, Btech, MBA, CA, MSW, Mtech – all experienced. Engineers in process, chemical, mechanical, electrical, automation and instrumentations)	▪ Ability to oversee procurement, operations, dispatch, as well as undertake initiatives for improving efficiency ▪ Ability to manage labour issues ▪ Ability to test the material with respect to the specified quality parameters ▪ Ability to test the end product ▪ Ability to exhibit leadership qualities ▪ Ability to undertake supply chain management	▪ Most of the hiring is done from reputed institutes across the country ▪ On-the-job training is provided on company specific requirements ▪ No specific skill gaps reported

Role, educational qualification	Expected competency	Skill gaps
	▪ Branding knowledge ▪ Good English and communication skills as to effectively interact with workers on daily targets, production techniques, quality issues etc. ▪ Good reporting and documentation skills ▪ Ability of the respective managers to undertake responsibilities of their respective departments such as accounts, procurement, HR etc.	
Executives and officers (same as managers and assistant managers – with comparatively less experience)	▪ Ability to operate machines and set parameters such as temperature, running time of machines specific to process requirement ▪ Ability to be conversant with basic measurements as to understand company requirements for different products ▪ Knowledge of procedures, sequence of steps / machines and the ability to adhere to the same ▪ Good communication skills so as to be able to coordinate with personnel ▪ Ability to understand and follow ISO norms ▪ Ability to execute standard specifications relating hygiene	▪ Most of the hiring is done from reputed institutes across the country ▪ On-the-job training is provided on company specific requirements ▪ No specific skill gaps reported

Role, educational qualification	Expected competency	Skill gaps
Associates (ITI and Diploma – all trades except civil and computers)	▪ Ability to multi-task ▪ Understanding of basic operations of machines ▪ Good communication skills ▪ Understanding of the code of conduce ▪ Knowledge of safety norms and hygiene ▪ Knowledge of the brand ▪ Understanding of standard operating procedures	▪ Lack practical knowledge and quality ▪ Lack common sense and communication skills ▪ Lack multi-skilling
Cleaning, gardening, housekeeping, loading-unloading (school drop-outs)	▪ Ability to undertake the assigned tasks as per the norms decided by the company ▪ Main activities are: o Keeping the premises clean and hygienic at all times o Gardening and landscaping o Loading and un-loading the materials and products effectively without destroying them	▪ On the job training provided as per company standards

Source: IMaCS Analysis

5.3. IT & ITES

Mysore is proving to be the next IT hub in Karnataka after the phenomenal success of Bangalore. The Government of India has recognised Mysore as the numero uno among the 20 Tier II cities of India for the promotion of IT industry. Currently, all of the IT related industries are concentrated around the Mysore city. Prominent IT players in the district include Infosys and Wipro. In addition, there are several small scale IT and ITES companies in the Mysore city, which provide employment to many.

There are a few upcoming investments also planned in the IT and ITES sector in Mysore. These include MoU signed by Laresn & Tourbro for IT/ITES based SEZ to be set up in the district at an investment of Rs. 615 crore. It is expected to provide employment to 11,000 persons. Wipro also has significant expansion plans in the district. Those, however, hinge upon land acquisition.

Based on our discussions with the stakeholders in the district, employment in the sector is diversified. People are hired from within Mysore, within other districts of Karnataka and even from other parts of the country.

Table 352: Skill gaps in IT industry in Mysore

Role, educational qualification	Expected competency	Skill gaps
Software Engineer (Experienced Degree/ Certification Course)	• Advanced programming skills in the particular domain/software package as required by the job profile • Understanding of the business flow of the client • Understanding of the client reporting norms • Knowledge of Software testing tools and methods • Ability to integrate IT product with the various other IT products/systems with the client • Ability to document revision changes and updates • Good communication skills and soft skills • Language proficiency • Good articulation skills and email etiquette • Good customer handling skills	• There is an overflow of engineers in the entire State as compared to the demand. However, majority of the engineers are employable due to overall poor skill levels • Lack soft skills • Lack Language proficiency • Lack articulation skills and email etiquette • Lack customer handling skills

Role, educational qualification	Expected competency	Skill gaps
Project Leaders (Experienced Degree/ Experienced Certification Course)	• Ability to work in multiple technologies which complement each other for the software system to be developed • Knowledge of the business process involved • Ability to convert functional specifications to design/system specifications • Ability to lead a team and deliver results • Good communication, documentation and organisation skills • Good customer rapport	• No skill gaps observed • Shortage of people with these skills observed in Mysore as people with these skills prefer to work in Bengaluru and not Mysore
Project Manager (Experienced Degree)	• In depth understanding of the sector and its constituents • Knowledge in multiple domains of software • Adherence to process and product quality including ISO/SEI/ITIL standards • Risk management • Resource management and time management • Systems approach • Team management and leadership skills • Hiring and training skills	• No skill gaps observed • Shortage of people with these skills observed in Mysore as people with these skills prefer to work in Bengaluru and not Mysore
Business Head (Experienced Degree)	• Understanding of the business as whole and the movement of the business • Ability to pitch with clients and acquire clients for the organisation • Ability to plan business for the	• No skill gaps observed • Shortage of people with these skills observed in Mysore as people with these skills prefer to work in Bengaluru and not

Role, educational qualification	Expected competency	Skill gaps
	organisation • Negotiation skills • Team management and leadership skills • Risk management knowledge • Cost control of operations • Resource management • Hiring and training skills	Mysore

5.4. Organised retail

As a city progress, organised retail stores start penetrating to capitalise on the increasing consumer base. The same is happening in case of Mysore. A couple of malls, supermarkets and departmental stores have already established base in the city and many more are planning to come up. Mall of Mysore is one of the most prominent malls in the Mysore City, In addition, major players such as Big Bazaar, Loyal World Supermarket, More, Megamart, Nilgiris, Reliance Fresh, Food World and Spencers, have also set shops.

With the increasing penetration of organised retail, there is demand for people with the required skill sets. Also, since the sales jobs in malls and departmental stores are considered to be easier, people in the district are preferring to work on those as compared to working in the manufacturing sectors. Thus, there is a need to skill more and more people in this area going forward. In the sector, majority of the demand for human resources will be concentrated in the store operations, followed by marketing, merchandising and others. We have given expected competencies in the table below. Since the sector is just beginning to grow, skill gaps are not observed as of now. As the sector blooms further, the expected competencies can be considered for training people for the same.

Table 353: Skill gaps in Store Operations of Organised Retail Sector in Mysore

Role, educational qualification	Expected competency

Role, educational qualification	Expected competency
Store Manager (Graduate)	▪ Knowledge day to day operation of the stores ▪ Understand buyer behaviour and decide merchandise and pricing ▪ Use CRM tools to assess buyer behaviour and devise strategies ▪ Knowledge of competitive offerings and strategies ▪ Identify profitable products and promote ▪ Vendor management and logistics management ▪ Inventory management of the store ▪ Shelf life management ▪ Excellent communication skills ▪ Complaint management in the stores ▪ Guide and train store workers ▪ Leadership skills in guiding and motivating sales force
Sales Executive/ Associate (Any Graduate/ Diploma/ ITI)	▪ Knowledge of the sales process and organisation process ▪ Knowledge of product distribution and display in the stores ▪ Skill in understanding customer requirements and guiding them toward the products, and product promotion ▪ Knowledge of various brands options, comparative features, unique selling proposition of each product, warranty/guarranty information, service information etc ▪ Technical knowledge of products which require the same ▪ Ability to up sell and cross sell ▪ Shelf life management of goods ▪ Complaint management ▪ Good communication skills ▪ Knowledge of multiple languages is an added advantage ▪ Pleasing behaviour ▪ Skill in identifying theft and pilferage
Billing Executive (Graduate/ Diploma/	▪ Knowledge of the billing system in place ▪ Good computer skills

Role, educational qualification	Expected competency
ITI)	▪ Knowledge and honesty in handling credit card, debit card, coupons/cards and cash ▪ Knowledge of offers in the stores ▪ Trouble shooting minor billing issues ▪ Queue management ▪ Good oral skills ▪ Knowledge of multiple languages is an added advantage ▪ Day end tallying and reporting ▪ Skill in identifying theft and pilferage

Source: IMaCS Analysis

5.5. Textiles and clothing industry

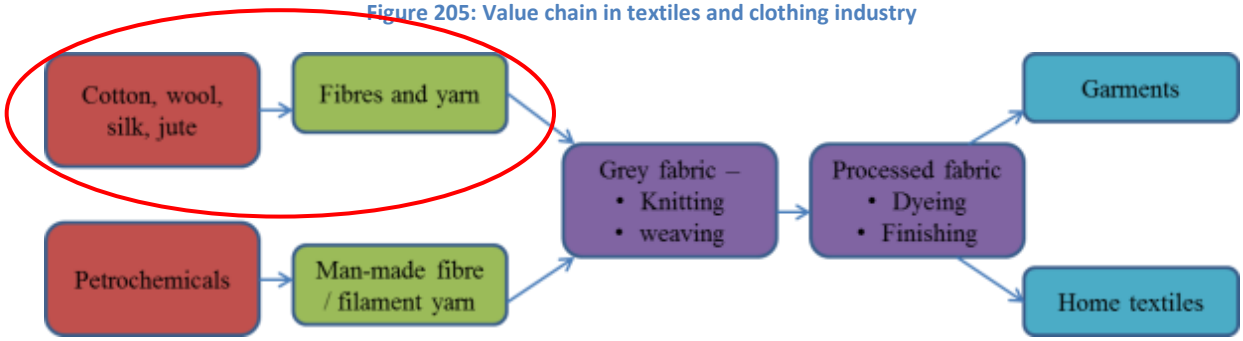
Mysore has traditionally been known for the existence of its textiles industry, especially so it's Mysore Silk Sarees. The sarees are famous around the world for their fine silk, light weight (as compared to other silk sarees) and vibrant colours. Mysore silk is considered as one of the purest forms of silk. The beauty of these sarees is defined by the intricate Zari work. In addition, the district has several spinning mills, which specialise in spinning cotton and silk yarn.

As of December 2011, the district had six large and medium scale industrial units in this sector. These included Chamundi Textiles, Pasari Spinning Mills and Zenith Exports Limited. Additionally, the district has 3,441 SSIs involved in textiles manufacturing. These employ a total of 8,653 persons.

Historically, the industry has seen robust growth in the sector. However, the growth has started coming down in recent times. Based on our primary survey, we found out that the textile mills are facing labour related issues. They reported shortage of labour and strong labour unionism. In fact, some of the textile mills have closed down / in the process of closing down and are moving their base to Tamil Nadu. Currently also, some of the labour force is sourced from Tamil Nadu. In fact, people are also hired from the Institute of Textiles Technology in Salem.

Mysore silk sarees

Figure 205: Value chain in textiles and clothing industry



The circled parts are the ones which exist in the district.

Figure 206: Production processes in spinning

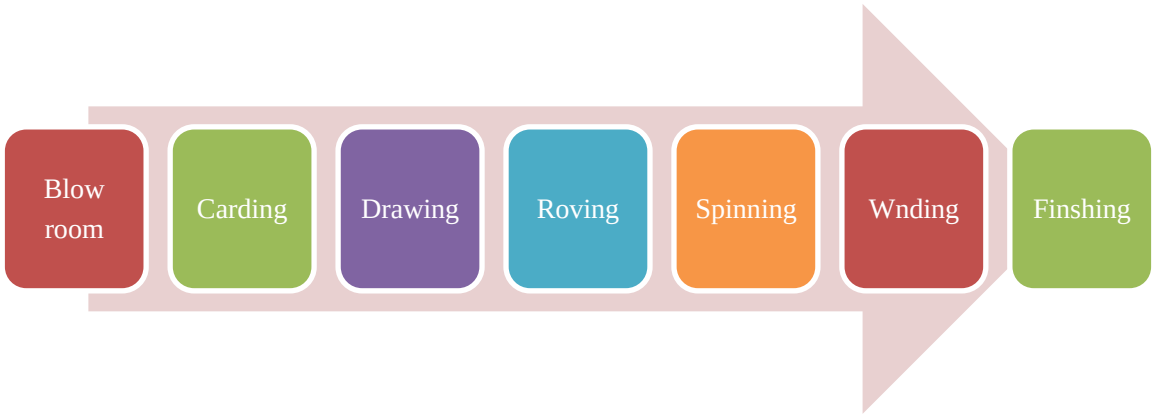


Table 354: Skill gaps in textiles sector in Mysore district

Role, educational qualification	Expected competency	Skill gaps
General manager / Administration manager, production manager, assistant manager (B.tech in Textiles, MSC in Chemistry)	▪ Ability to oversee plant operations ▪ Problem solving skills, good communication skills to manage shop floor workers who are mostly minimally educated. ▪ Technical competence- Very strong understanding of all aspects of the spinning process. Technical knowledge is a must as spinning sector is technology intensive in nature. ▪ Process improvement skills - waste control, finding solutions to maintenance and engineering related problems as most of the units do not have a dedicated R&D for process improvement. Yarns are a commodity product which leads to thin margins for the producers. Cost reduction through above mentioned measures is a must to improve profitability.	▪ Lack soft skills and communication skills ▪ Lack process improvement skills
Supervisors (degree and diploma in textiles)	▪ In-depth knowledge of production process. Knowledge about the various spinning machines used across the shop floor. ▪ Man-management skills to manage shop floor workers who are mostly minimally educated. ▪ Ability to train operators to man the	▪ Unable to manage labour issues at the shop floor – lack the ability to deal with strong labour unionism ▪ Awareness of modern techniques is also limited

Role, educational qualification	Expected competency	Skill gaps
	spinning machines. ▪ Awareness of quality requirements of the yarn across various stages of production. ▪ Monitor cleaning and maintenance schedule of the spinning machinery.	
Operators (SSLC pass outs, PUC pass outs)	▪ Operating knowledge of the spinning machines. ▪ Ability to ensure that machine stoppage time in minimal ▪ Monitor spinning operation as regards the availability of sliver/bundles/lap as input to respective stages of the spindling operation ▪ Should be able to read gauges, dials, or other indicators to make sure a machine is working properly. ▪ Ability to work on different machines. For e.g. a spinning operator should be able to work on carding, roving and spinning machines. ▪ Discipline at shop floor, punctuality and regular attendance at workplace. ▪ Adherence to cleaning and machine maintenance schedule. Understanding of support to be provided for maintenance of various textile machines ▪ Ability to comply with quality norms.	▪ Lack of willingness to work hard and put in the required number of hours ▪ Lack discipline ▪ Inability to comply with quality norms.

Source: IMaCS Analysis

5.6. Tourism, Travel, Hospitality & Trade

Mysore also known as the cultural capital of Karnataka is one of the most significant tourism destinations in the State. It is also called as the 'City of Palaces', the 'Ivory City' as well as the 'City of Yoga'. It is most famous for its Mysore Palace, which attracts tourists from around the world. During 2009-10, more than 30 lakh tourists visited Mysore.

While the district has many tourist destinations of its own, it also provides accommodation and is the base camp for the tourists who wish to visit places in and around Mysore. Tourist destinations in the nearby districts are mainly in Mandya and Chamarajanagar districts.

The district has well-developed hotel infrastructure. As of March 2012, about 71 hotels were registered with the Department of Tourism, in addition to 11 resorts and 15 approved home stays. Several four and five star hotels are also available in the district.

Table 355: Key tourism destinations in Mysore

Place	Description
Mysore Palace	▪ The Palace was built between 1897-1912 in the Indo-Saracenic style , the Palace has beautifully designed square towers at cardinal points, covered with domes. ▪ It is especially known for its Dassara festival
Chamundi Hills	▪ Chamundi Hills is situated at 3,489 ft. above the sea level , this large Dravidian Temple is dedicated to Sri Chamundeshwari Devi. ▪ The Sacred Bull with 25 ft long structure , situated on the Chamundi hills, is adorned with ropes, chains, bells and jewels of stone
Mysore Zoo	▪ Mysore Zoo or Shri Chamarajendra Zoological Gardens is one of the oldest zoos in India. ▪ It is home to a wide range of wild species and takes the credit for alluring vast number of visitors with its rich breed of flora and fauna.

Place	Description
St.Philomena's Church	▪ The Church as built in 1956 and is one of the largest churches in the country. ▪ It is among the most majestic churches in India. Drawing inspiration from Germany's Cologne Cathedral, this colossal church built in the neo-Gothic style.
Jaganmohan Palace	▪ The Jaganmohan Palace was built during rule of Krishnaraja Wodeyar III in 1861, as an alternate retreat for the royal family.
Lalitha Mahal Palace	▪ The Lalitha Mahal Palace is the second largest palace in Mysore. It is located near the Chamundi Hills. ▪ Lalitha Mahal Palace was built by the Maharaja Krishna Raja Wodeyar Bahaddur IV to host his most important guest, the Viceroy of India. ▪ It has now been converted into a luxury hotel.

Mysore Palace

Table 356: Skill gaps in Tourism, Travel, Hospitality & Trade in Mysore district

Role, educational qualification	Expected competency	Skill gaps

Role, educational qualification	Expected competency	Skill gaps
Tour operators / travel guides (illiterates to 10th pass, currently trained by the Department of Tourism)	• Market understanding • Ability to brand • Event management • Route planning and optimisation • Excellent sales and marketing • Ability to develop attractive pricing strategy • Ability to liaison with airline, hotels and local community • Ability to manage tourist expectations • Man management skills • Customer Relationship Management • Computer skills • Ability to speak in English	• Lack of market understanding • Lack of soft skills • Inability to network with customers and allied entities • Poor customer service quality • Lack of computer skills • Inability to speak in English
Hotels – managers and other staff (caterers, housekeeping, gardening etc.) (Hotel management degree, any other degree and high school pass	• Understanding of local language and English speaking skills • Customer relationship management • Excellent trouble shooting skills • Understanding of cultural differences • Understanding of hotel functions, including procurement of raw material, cooking etc. • Computer skills • Ability to maintain financial records • Ability to maintain business etiquette	• Poor English speaking skills • Lack of computer skills • Lack of soft skills • Lack of customer relationship management and allied services • Lack of service orientation

Role, educational qualification	Expected competency	Skill gaps
outs)		

Source: IMaCS Analysis

5.7. Unorganised sector – Agarbatti making

Mysore district is also home to several unorganised sectors, prominent ones being agarbatti (incense) making and other products manufactured with sandal wood (cosmetics, perfumes, soaps, essential oils, powdered talc and statues). In fact, Mysore agarbattis and Mysore soaps have created a niche for themselves in the world market.

Karnataka is the leading agarbatti producer in India, with main concentration of this activity in Mysore and Bangalore districts. Mysore is recognised as one of the pioneers in agarbatti manufacturing and this is one of the main cluster activities in the district. This is also due to the rich Sandalwood production in the State.

Agarbatti manufacturing is highly labour intensive sector characterised by low capital requirements and simple technology. The production process involves acquisition of the raw materials, mixing of the jigat (agarbatti paste mixture), rolling of agarbattis, drying them, perfuming them (if not pre-scented) and packing them. Majority of the workers are women. In all, India is estimated to have five lakh agarbatti workers. Bangalore and Mysore are estimated to employ 50 per cent of these (many of them migrant from South Indian States).

Table 357: Skill gaps in Unorganised sector (agarbatti making) in Mysore

Role, educational qualification	Expected competency	Skill gaps
Workmen (experience	▪ Ability to procure the raw materials used for making agarbattis at fair prices	▪ The sector has lack of innovation. The same types

Role, educational qualification	Expected competency	Skill gaps
based, no education required)	▪ Ability to make Agarbatti paste in which jigat powder is mixed with Charcoal and water to make a thick paste ▪ Rolling of paste on sticks and then sun drying of the coated sticks ▪ Scenting of sun dried sticks using a combination of different perfumes and aromatic ingredients ▪ Packaging of scented sticks in packages of different shapes and volumes ▪ Soft skills and communication skills ▪ Ability to conduct raw materials and finished goods testing ▪ Conducting quality testing	of products are being manufactured for years. ▪ Lack soft skills and communication skills ▪ Entire training is provided on-the-job. ▪ Lack knowledge of raw material and finished goods testing. ▪ Not very quality conscious.

Source: IMaCS Analysis

5.8. Others

In addition to the sectors mentioned above, Mysore district is home to many more industries. Most of them don't have any employment generation or expansion plans in the next few years, they have reported shortage of skilled manpower in some of the key functions like mechanics, plumbers, electricians, masons, welders, metallurgy (diploma / engineer) etc. Some of these industries include:

- **Building, construction and real estate**: Upcoming malls and apartments infrastructure is likely to create demand for workers in the construction sector, especially in the low skilled, semi-skilled category. Shortage of masons has been reported.
- **Electronics and IT hardware:** There are a few IT hardware companies in the district, such as AT&S, which is involved in making PCB boards. Most of the manpower requirements are met from ITIs. However, such companies involve hard work and working in shift systems, which youth does not prefer. The attrition rate is also very high. Thus, creating a skill shortage for such industries in the district.

- **Others:** There are other manufacturing and engineering based companies also which have reported shortage of skilled people in trades such as welding, electrical work, ultrasonic, millers, etc.

6. Recommendations

Recommendations for the Mysore district focus on the sectors which we have discussed in the report above. Recommendations are made for interventions that can be taken by both the Government Departments and also the private players (training providers and industry). The two as individual entities and also in collaboration with each other bring about the required skill development initiatives in the district. The same will meet the skill demands made by various sectors and will also lead to income generation opportunities for many.

In addition to the high growth sectors, we have also made a few recommendations for sectors, which even though might not generate high growth in the district, but are employing people in large numbers and thus should not be ignored. These include agriculture and allied sectors. The summary of the recommendations is given in the table below, while the details follow.

Table 358: Key recommendations for Mysore district – summary

Sector	Government	Private training provider	Industry
Auto and auto components + Chemicals (tyre based)	▪ Department of Employment and Training to focus on updation of infrastructure, syllabus and quality of its existing ITIs ▪ Department of Technical Education to focus on employability of engineers	▪ Collaborate with Department of Employment and Training to upgrade ITIs in PPP model ▪ Tie up with industrial players to meet their captive requirements	▪ Collaborate with Government ITIs on the lines of Toyota's collaboration with Government ITI in Ramanagara

Sector	Government	Private training provider	Industry
Food processing	▪ Department of Horticulture, Food Karnataka Limited and industrial players to join hands to meet the training needs of the sector.		
IT & ITES	▪ Government engineering colleges to focus on improving the employability of their students	▪ Private engineering colleges and training centres to focus on improving the employability of their students	
Organised retail	▪ Department of Employment and Training can start retail training in its ITI in PPP mode with retail player	▪ Training institutes can be set up to provide training for store operations	▪ Retail stores to collaborate with training institutes for assured employment.
Textiles and clothing	▪ Department of Textiles to address the labour union issues for the industry	▪ n/a	▪ Need to resolve the labour union issue
Tourism, travel, hospitality and trade	▪ Department of Tourism can introduce specialised courses in PPP mode	▪ Can set up training institutes for the sector, especially in the upcoming areas such as adventure tourism, eco-tourism and wellness industry	▪ Scope for creating facilities for: ○ Adventure tourism ○ Eco-tourism ○ Wellness tourism
Unorganised sector – agarbatti making	▪ Can provide training to the agarbatti cluster	▪ n/a	▪ n/a

6.1. Auto and auto components + Chemicals (mainly tyres for auto industry)

Mysore is home to a few auto and auto components manufacturing companies. It is also home to a few tyre making companies. Some of the prominent names include TVS Motors, JK Tyres and Falcon Tyres Limited. In addition, small scale automotive companies are also present. Some of the companies are planning to expand. As the auto sector expands in the district, number of car servicing outlets is also increasing. Thus, demand is getting created both in the auto manufacturing and auto servicing sectors. To ensure that skill needs are met in this sector, we have made recommendations for both Government and private sectors.

Government

Based on our primary survey, we found out that the auto and tyre related companies are facing skill related issues mainly in its semi-skilled workers. For semi-skilled jobs, the companies are hiring people from the ITIs. It was reported that freshers coming out of ITIs had only theoretical knowledge and needed on the job training for at least a year. Additionally, absenteeism was noticed to be very high.

We recommend that the Department of Employment and Training should focus on updation of the syllabus in the ITIs and should bring in more practicals in the curriculum. Also, the current system has ITI pass outs visiting industries for doing apprenticeship. We recommend that industry visits should be arranged even during the study period. This will introduce the youth to the new machines and technology and give them practical understanding. To enable this, ties with local industries should be strengthened.

At engineer level, the companies felt that most of the engineers joining the labour force are unemployable and serious attention should be paid towards this as well. The Department of Technical Education needs to address this issue at the earliest, as it is leading to a situation of educated unemployed in the country. In addition, courses for instrumentation mechanics need to be introduced in the district.

Private training providers

We recommend two types of models for the private training providers:

- They can collaborate with the existing training institutes run by the Department of Employment and Training and help upgrade those under PPP model.
- There is also scope to tie up directly with the industrial players and training their existing manpower and also training new manpower to meet their demands.

Industry

Many auto and auto components based companies have established themselves in Mysore. Some are even in the phase of expansion. The industry is facing shortage of skilled manpower. Thus, it needs to collaborate closely with the training institutes. For instance, in Ramanagara district, Toyota Kirloskar has adopted a Government ITI, wherein it is up-grading the ITI in a PPP model. The adoption is enabling Toyota to train the workforce based on its own requirements and is assuring employment also for the ITI pass outs. Similar models can be explored in Mysore. For this, the industrial players will have to collaborate with the Department of Employment and Training.

6.2. Food Processing

Mysore is home to several large and medium scale food processing companies, such as Nestle India Limited and Hindustan Lever Limited. It is also home to a couple of distilleries, namely Bacardi Martini India Private Limited and Chamundi Distelleries Private Limited. The district also has several food and intoxicants based SSIs, which employing close to 10,000 persons. More investments are on the anvil.

Most of the modern day food processing companies are highly mechanised and do not have many skill requirements. Whatever skill requirements are there are mostly met in-house. Thus, the scope of skilling in this sector in Mysore district is not huge. However, there are certain aspects which can be considered.

Private and Government combined

As discussed above, big companies involved in food processing sector have started their own in-house training programmes. For instance, Nestle whose coffee business is heavily dependent on sourcing coffee from the Kodagu district has recently opened a training institute in Kodagu. The institute launched in January 2012 in Bindhu Estate, Kodagu is a coffee demo farm and training centre. The

objective is to help farmers improve quality, productivity and sustainability. The initiative will bring latest technology and best practices to the farmers.

There is a need for the Government to promote such skill development initiatives across the State. More such initiatives can be planned wherein Department of Horticulture, Food Karnataka Limited and industrial players can collaborate together. For specific areas like coffee, Coffee Board can also collaborate. Role of the Government can be limited to subsidising the cost of training and the role of the private players can be to bring in the required expertise and then absorb the manpower in their processes.

6.3. IT & ITES

Mysore is emerging as the next IT hub in Karnataka after Bangalore. The Government of India has recognised Mysore as the numero uno among the 20 Tier II cities of India for the promotion of IT industry. Some of the prominent IT players in the district include Infosys and Wipro. The sector is in the expansion mode and will generate demand for trained human resources going forward.

Government

The Government engineering colleges need to focus on increasing the employability of the youth who are coming out of the colleges and joining the workforce. Steps, same as suggested for private engineering colleges (below) can be imparted.

Private training providers and industry

Most of the companies in IT & ITES sector are facing skill gaps in the people they are hiring. The engineers coming out of the educational institutions are considered unemployable to a great extent. Thus, the companies have introduced stringent selection criteria. Even after the candidates are recruited, rigorous in-house trainings are conducted. Mysore is home to one of the biggest corporate training programmes in this sector – it is run by Infosys. Infosys has its Global Education Centre situated in Mysore, where it trains its entry level engineering graduates.

The Centre set up a decade back has trained 100,000 engineering graduates in a 23 week residential training programme, which aids students transition from the academic world to the corporate world.

The Centre is recognised as the world's largest corporate university, with an area of 1.4 million square feet, 500 instructors and 200 classrooms.

Infosys training centre in Mysore

Other than Infosys, other private IT & ITES companies also believe in training their manpower on their own, based on their requirements. Thus, we do not make any recommendations for setting up any private training institutes in the district. However, we do have recommendations for the existing engineering colleges:

- Improve the course curriculum to bring it in line with industry expectations
- Improve laboratory infrastructure on the campus
- Increase industry interactions and invite guest lecturers from the industry to train students
- Take steps to improve employability of the youth by imparting not just technical education but also by making communication and soft skills a part of the curriculum

6.4. Organised retail

Mysore is witnessing increasing presence of the organised retail. Malls, multiplexes, supermarkets and departmental stores are gaining a firm ground in the Mysore city. There are already players such as Mall of Mysore, Big Bazaar, Loyal World Supermarket, More, Megamart, Nilgiris, Reliance Fresh, Food World and Spencers. There are plans for more to come up as purchasing power of the consumers' increases and the booming middle class continues to spend on consumer goods.

With the upcoming retail boom, the demand for trained people working in organised retail is also likely to increase. Currently, there are not retail training institutes in the district, creating scope for opening of such institutes.

Government

Karnataka Vocational Training and Skill Development Corporation (KVTSDC) has launched first PPP based retail training centre at Government ITI in Peenya, Bangalore along with Bharati Wall Mart. Similar initiatives can be planned for Government ITI in Mysore district.

Private training providers

There is scope for private training providers to open up training institutes providing training in preparing skilled manpower for retail operations. Majority of the training should focus on store operations. Skill set which needs to be developed, includes the following:

- Sales process and organisation process
- Product distribution and display in the stores
- Understanding customer requirements
- Product promotion
- Knowledge of various brands options, comparative features, unique selling proposition, warranty/guarranty information, service information etc.
- Technical knowledge of products
- Shelf life management of goods
- Complaint management
- Good communication and customer handling skills
- Knowledge of multiple languages is an added advantage
- Pleasing behaviour
- Skill in identifying theft and pilferage

Industry

As the district grows, penetration of organized retail trade is expected to deepen. With that, the demand for trained people will also increase. To meet that demand, industry can collaborate with local

training institutes wherein it can assure employment to the people that get trained. The training in turn can be held as per industry requirements.

6.5. Textiles and clothing

As discussed in the report, Myore district has several spinning mills. A lot of these are even manufacturing export quality materials and exporting to many countries. However, they are not able to get desired manpower within the district. Some of them are facing labour issues – shortage and union problem and either closing down or moving to Tamil Nadu.

Government

The Government needs to focus on the labour issues faced by the textiles industry in the district and address those issues on priority to save and revive the industry, which has been in existence in the district for many decades. Problem of labour unionism needs to be resolved, amicably to address the issues faced by both the parties.

There is also lack of colleges in the State offering courses in Textiles technology. Opening of such a college could be considered in Mysore.

6.6. Tourism, travel, hospitality and trade

As discussed in the report, tourism and hospitality sector is one of the driving forces of the Mysore economy. Mysore is one of the most prominent tourist destinations in the State and attracts lakhs of tourists every year. The Mysore city has decent hotel infrastructure. However, shortage of staff with requisite skills is felt. Steps can be taken by both the private and Government players.

Government

The Department of Tourism is providing tourist guide training to SC and ST people in the district. In 2010-11, training was provided to 15 people and in 2011-12, it was provided to 40 people. Mysore also has its own street guides' association, which is an association of hundreds of private guides. The district also has five approved tour and travel guides, registered with the Department. The district also has Vidya Vikas Hotel Management & Catering Technology College, affiliated to the Mysore University. Thus, some training infrastructure already exists. However, from our primary survey, we have found that shortage of people in the hospitality industry is still being faced. People in adequate numbers and with

requisite skill sets are not available. Most people lack service orientation, as is required in the tourism industry. Additionally, there is a need to train manpower in new concepts such as adventure tourism, eco- tourism and wellness industry.

Thus, there is potential for the Department of Tourism to start specialised training infrastructure in the district for tourism and hospitality industry. It can also do it in collaboration with private sector in a PPP model.

Private training providers

There is a huge scope for private training providers to set up training institutes in Mysore for the tourism and hospitality sectors. The key areas where training is required are:

- Hospitality – housekeeping, gardening, catering, cooking, facility management, security guards
- Travel operators / agents and tourist guides
- Training for preparing experts in the area of adventure sports and eco-tourism
- Training for people in the wellness industry (spa, massage centres etc.) to replicate the successful model of Kerala wellness industry

Industry

There is scope for introducing wellness based tourism in the district. This could include massage, spa centres etc. This can be promoted on the same lines as the wellness industry in Kerala. Also, there is scope for exploring adventure and eco-tourism due to presence of many water bodies and mountains in and around the district.

6.7. Unorganised sector – agarbatti making

The agarbatti industry in the district is mainly concentrated in the agarbatti cluster. Most of the activity is conducted in small scale in rural areas in the households of the people who have direct contacts with agents for selling of their products. Most of the training in this sector is acquired through experience, which people have acquired over a period of time. Thus, much skilling interventions is not required.

However, the Government can help provide direct market linages to the agarbatti makers and provide them the following trainings for the same:

- Domain knowledge
- Rolling

- Perfume application
- Packaging
- Quality testing
- Raw material testing
- Finished goods testing

The training programmes can be organised in the agarbatti cluster.

6.8. Others

In addition to the interventions mentioned above, there are other sectors which have skill requirements across them and can be addressed up certain interventions.

Government

- Different Government Departments should hold awareness programmes, especially in the rural areas for activities including:
    - Updating agrarian families on the various Schemes being run by the Government and how these people can benefit out of those
    - Awareness on different training programmes run by the Government, which people can benefit from
    - Livelihood opportunities that can be created by little skilling interventions
    - Awareness to youth to take up jobs in areas such as plumbing, masonry, electrical. Repai and maintenance etc. and not consider these jobs as inferior
- Training should be provided to farmers in areas such as:
    - Application of new technologies
    - Use of correct amounts of fertilisers
    - Scope of horticulture and floriculture
    - Poly house cultivation
    - Multiple cropping
    - Financial management
    - Market linkage, etc.

Private training providers

- Private training providers can help upgrade the infrastructure of the Government ITIs in the PPP Scheme implemented by the Department.
- The existing private and aided ITIs should focus on improving their own infrastructure quality as well. These can even consider providing hostel facilities for the students who come from the rural areas.
- Trainings can be imparted in areas such as cab drivers, plumbers, electricians, TV repair mechanics etc., as these are in high demand.
- Facility management companies can be introduced in the district, as the demand for the same is high.

9.24. RAICHUR

1. Introduction

Raichur district is situated in the north eastern side of Karnataka. It has a total land area of 8,383 sq. km., which is 4.4 per cent of the total State area. It is bordered on north by the Yadgir district, on the north west by the districts of Bijapur and Bagalkot, on the west by Koppal district, on the south by Bellary district and on the east by the districts of Mahabubnagar and Kurnool of Andhra Pradesh.

It is sub-divided into 5 sub-districts and has 830 villages. Majority of the population at 75 per cent lives in rural areas. Agriculture is the main occupation, employing 73 per cent of the labour force (as of Census 2001). The remaining is in household industry (two per cent) and other workers[46] at 25 per cent.

Paddy, Jowar and Bajra are the key crops grown. Gram is the major pulses grown in the district. Sunflower is the major oil seeds grown. Rice mills are available is plenty and the district is also referred as 'Rice Bowl' of the country. Cotton is the major commercial crop grown in the district and the availability of black soil suits its' cultivation. Raichur district is one of the few places in India with gold resources. The famous Hatti gold mine is situated 90 kms away from Raichur city.

The district is predominantly agriculture based and canal irrigation is available in most parts of the district. The people are involved in growing cash crops such as rice, cotton, sunflower, etc. Thungabadra

[46] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

and Krishna rivers flow through the district and the water resource requirement is fulfilled by these. The district is one of the country's 250 most backward districts named by the Ministry of Panchayat Raj in 2006.

Table 359: Comparison of Raichur district with Karnataka – key indicators

Indicator	Year	Raichur	Karnataka
Area, in sq.km.	2001	8,383	191,791
Percentage share in State geographical area, %	2001	4.4%	100%
No. of sub-districts	2011	5	175
No. of inhabited villages	2001	830	27,481
No. of households	2001	297,775	10,401,918
Forest area as a % of total geographical area	2001	2.2%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Raichur district has a population of 19.2 lakh persons – 3.1 per cent of the State population. Majority of the population (26 per cent) is concentrated in Raichur sub-district, followed by Sindhanur sub-district at 22 per cent, Manvi and Devdurga sub-districts at 20 and 19 per cent respectively and Devdurga sub-district at 13 per cent. While 57 per cent of the population in the district is in working-age group (15 to 64 years), about 44 per cent is actually working i.e. work participation rate.

The district's literacy rate is 60.5 per cent, which is lower than the State average of 75.6 per cent, and also less than the All-India average of 74 per cent. Male literacy at 71.35 per cent is significantly higher than female literacy rate at 49.56 per cent. Of all the districts, Raichur ranked last on Gender Development Index (GDI), with a value of 0.530.

Most of the population (74.8 per cent) lives in rural areas. In fact, as mentioned earlier, agriculture is also the main occupation of the people of the district, employing 73 per cent of the labour force as either cultivators or agricultural labourers.

Table 360: Key demographic indicators

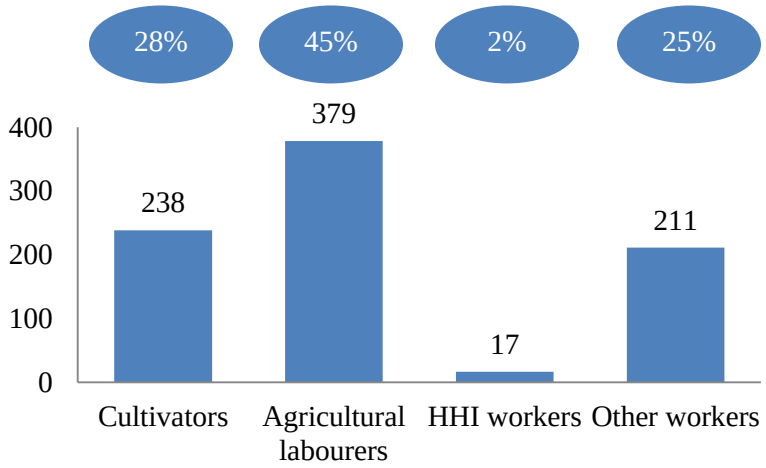
Indicator	Year	Raichur	Karnataka
Population, No.	2011	1,924,773	61,130,704
Decadal growth rate of population, %	2001-11	15.3%	15.7%
District's share in State's population, %	2011	3.1%	100%
Urban population as a percentage of total population, %	2001	25.2%	34%
SC population, %	2001	19%	16.0%
ST population, %	2001	18.1%	7.0%
Sex ratio, No. of females per 1000 males	2011	992	968
Population density, per sq. km.	2011	228	319
Literacy rate, %	2011	60.5%	75.6%
Main workers, No.	2001	544,347	19,364,759
Marginal workers, No.	2001	188,415	4,170,032
Working age population* as a percentage of total population, %	2001	57.2%	63%
Work participation rate^, %	2001	43.9%	45%
HDI	2001	0.547	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 8.4 lakh persons. Of this, 28 per cent are cultivators, 45 per cent are agricultural labourers, two per cent are workers in household industry and 25 per cent are other workers.

Figure 207: Raichur district's worker profile, as of 2011, in thousands



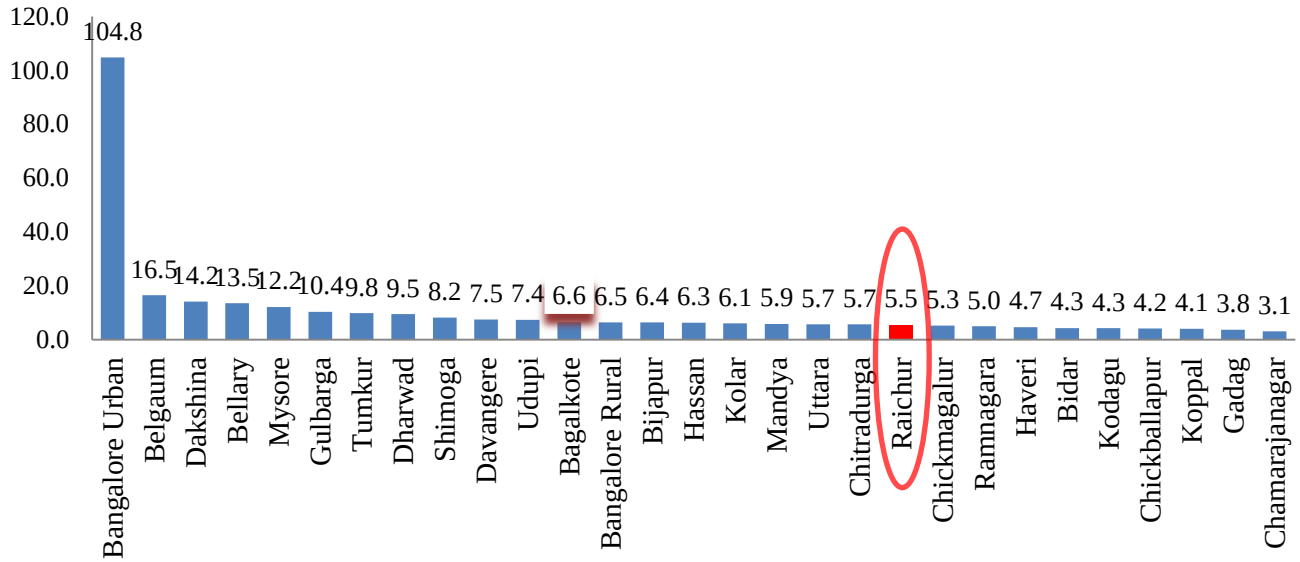
HHI: Household Industry

Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Raichur district had the 20th largest Gross District Domestic Product (GDDP) in Karnataka at Rs 5,526.4 crore (1.8 per cent of the Gross State Domestic Product). In terms of per capita GDDP though, it ranked 26th amongst 30 districts at Rs 30,196. This was lower than the State average of Rs 53,101.

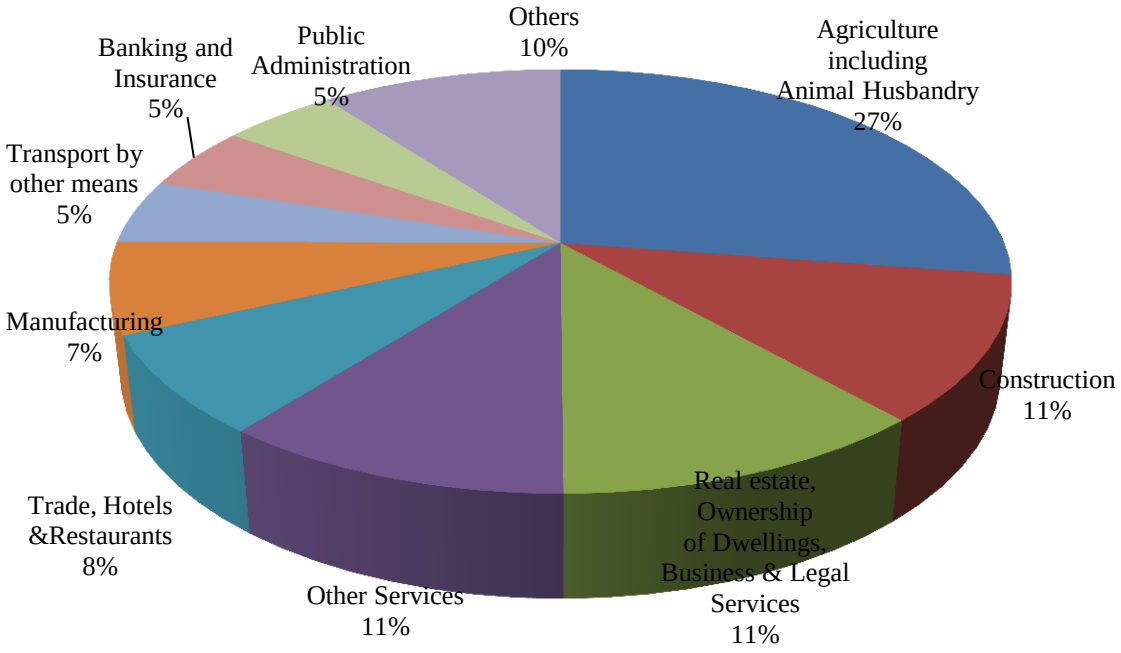
Figure 208: Gross District Domestic Product, in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 46 per cent in 2008-09. This is followed by primary sector at 34 per cent and secondary sector at 20 per cent.

Figure 209: Sector wise distribution of Raichur's GDDP, as of 2008-09, 100% = Rs 5,526.44 crore



Source: Karnataka Directorate of Economic and Statistics

Agriculture: Of the total area of 8,383 sq. km. in the district, over 61 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of paddy and jowar under food crops and sunflower under commercial crops. For details of crops grown in Raichur district, refer to annexures.

Industry: As of 31st December 2011, Raichur district had nine large and medium scale industrial units, employing 7,379 persons. These include prominent industries such as Hutti Gold Mines Co. limited which employs around 4000 people, Karnataka Power Corporation employing 2220 people, Surana Industries Limited , etc. (Refer to annexures complete list). End products manufactured included gold, power, sponge iron, bulk drugs, petroleum products, etc.

Raichur also has 8,538 Small Scale Industries (SSIs), employing 35,885 persons. As of March 2010, majority of these were job works & repairs based industries at 19.4 per cent, followed by textile based industries at 19 per cent, food and intoxicant based industries at 12.3 per cent, wood based industries at 12 per cent and remaining in others. Refer to annexures for details.

The district currently has three industrial areas, totalling 2,386 acres of land. Of this, 686 acres of land has been developed so far. Two more industrial areas totalling 118 acres (one in Devdurga with 50 acres and another in manvi with 59 acres) are in different stages of development. For details, refer to annexures.

Raichur district is attracting significant investments from industrial players. During the Global Investors Meet (GIM) held in 2010 in Karnataka, seven Memorandums of Understanding (MoUs) amounting to Rs 11,978.06 crore were signed for the district. Once set up, these are estimated to employ 4,855 persons. All the projects are in different stages of implementation. For detailed status of these projects, refer to annexures. In the recently conducted Global Investors Meet (GIM) 2012, eight MoUs were signed for the Raichur district amounting to Rs. 14,650 crore. For details of the project, refer to annexures

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 46 per cent of GDDP in Raichur district. Of all the services, the key services in the district are of 'real estate, ownership of dwellings, business and legal services' and 'other services' at 11 per cent each of GDDP, followed by trade, hotels and restaurants at 8 per cent.

2.3. State of education

As of September 2011, Raichur district had 2,252 schools, with 338,972 students enrolled. The drop-out rate was 13.2 per cent both for lower and higher primary schools. This is higher than the State average of 4.6 per cent for lower primary and 8.1 per cent for higher primary schools. The district has the highest drop-out rate in lower primary and second highest in higher primary schools. This is because most of the students are involved in farming activities during the season time and discontinue their studies.

There are 100 pre-university (PU) colleges with 20,857 students. There are also 12 general colleges, two medical colleges, nine polytechnics (for technical education), three engineering colleges and two dental colleges. For details of courses offered by polytechnics, refer to annexures.

Table 361: School education infrastructure in Raichur district, as of September 2011

Type	Lower Primary	Higher Primary	High
Government	711	781	181
Aided	2	34	31
Unaided	155	218	139
Total	**868**	**1,033**	**351**

Source: District Information System for Education (DISE) 2011-12

Table 362: Higher education infrastructure in Raichur district, as of March 2010

Colleges	No.	Students
PU Colleges	100	20,857
General	12	4,508
Medical	2	397
Engineering	3	400
Dental	2	264

Source: Raichur District at a Glance 2009-10

For vocational training, Raichur district had a total of 38 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, four were Government ITIs, two were private aided ITIs and remaining 32 were private unaided ITIs. All the 38 ITIs together have a seating capacity of 3,328.

Table 363: Key ITI indicators in Raichur district, as of March 2012

Indicator	Value
Total Number of ITIs	38
Number of Government ITIs	4
Number of Private aided ITIs	2
Number of Private unaided ITIs	32
Total Seating capacity	3,328
Student pass rate	70-75%
Student drop-out rate	15%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Raichur district, we have found that on an average, of all the students that pass out from an ITI in each year, 50 per cent find jobs in the market.

The district also witnesses a drop-out rate of students in ITI as they involve in farming related activities. For details on courses offered by ITIs in Raichur, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions.

The government department offer courses in trades such as agriculture, health, education, etc. In agriculture sector, 'District Agriculture Training Centre' conducts courses relating to the district agricultural status such as soil, crops, water, etc. Also, commodity based training program is given on crops such as paddy, tur and cotton by the state agricultural marketing board. District Health and Family Welfare Training Centre conducts courses for mental and paramedical staff. The district institute of education training provides courses on personality development, adult education and training of teachers. The state run KEONICS offers computer related courses in the district.

The private training centres are offering computer courses. The courses offered by them includes Computer basics, MS office, Desktop Publishing (DTP), Tally, Programming languages (java, c), hardware courses, etc. There are also NGOs such as Jana Chethana, Jana Seva Prathistana, etc. providing vocational training programs in the district. Other few private training centres are engaged in offering courses on beautician (women), tailoring, etc. For details of training institutes and courses offered, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Raichur district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- Students, who are not able to get admissions in good colleges, prefer ITIs. The latter are also preferred because ITI certification helps in obtaining Government and even private jobs.
- Training institutes in Raichur lack sophisticated machinery and infrastructure for training. Practical exposure is lacking.
- The trade that is in maximum demand among students is fitter
- Quality of infrastructure, courses and teachers is average
- Placement activities are less in the institutions. Most of the people find jobs on their own.

- Students' first preference is to join the government ITI as the fees are lesser compared to private ITI institutions. Most of the students hail from rural areas and economically backward families.
- First preference of the youth is to work within Raichur district only. However, if there is an opportunity to work outside the district, most of the people are willing to migrate including girls.
- Students expect a salary of around Rs. 10,000 to 15,000 per month on their first job after completion of the course
- Around 30 per cent of the students are willing to continue higher studies such as diploma. Rest of the students prefers to get a job.
- Some students are willing to pursue parallel training courses along with their primary course which can increase their job opportunities. Some of such courses are tailoring, mobile phone repairing and computer & IT related courses
- First preference of the youth is to work in the government sector.
- Preferred sectors to work are manufacturing and services such as transport, power, etc.

3. Developmental concerns

Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

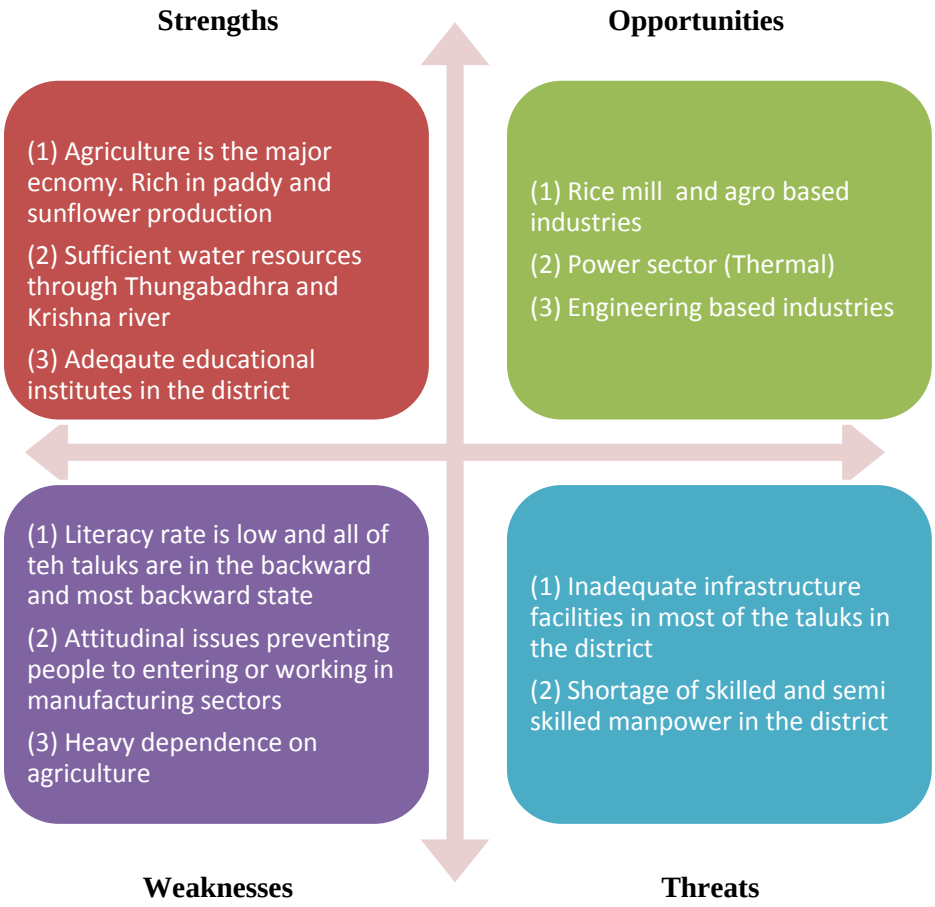
- **Lack of Industrialisation across all taluks:** Industries are concentrated only in the Raichur taluk and the other taluks do not have many industries to generate employment opportunities. Raichur taluk is classified under more backward taluk and the rest four taluks comes under the most backward category. Infrastructure facilities are inadequate in these taluks. The remoteness and backwardness of these taluks are a serious concern in the development of the district.
- **Shortage of skilled and semi-skilled manpower within the district:** The district has adequate educational institutions providing education to locals. These people, upon completion of their higher education move towards to cities such as Bengaluru, Hyderabad, etc. for a better opportunity and standard of living. There is also unemployment that is prevailing in the district. The unemployed people are mostly graduates who expect a white collar job and high salary. However, the district does not have enough industries to provide employment. On the side, the district faces a shortage of skilled and semi-skilled manpower. These include areas such as

electricians, fitters, machinists, welders, moulded steel workers, masons and carpenters. Demand for semi skilled workers is high currently[47].

SWOT analysis

Based on the diagnostics of the Raichur district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 210: SWOT Analysis of Raichur district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 1.59 lakh

[47] As per the discussion with the key stakeholders in Raichur district

persons is likely to be generated in Raichur district. Agriculture and allied activities are expected to remain the biggest employers. As the economy grows, employment demand in supporting sectors such as construction, transportation, healthcare and education is also expected to increase at a faster rate. However, sectors which are unique to Raichur and where skill up-gradation will be required within Raichur are Food processing, Power and Engineering based industry.

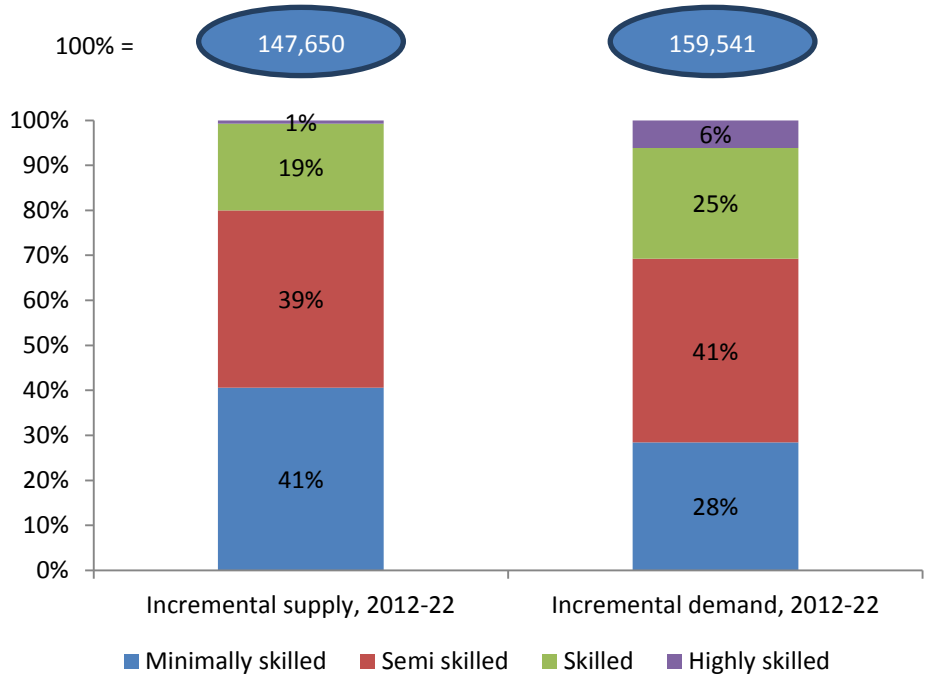
Table 364: Incremental demand in Raichur – 2012 to 2022

SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	63,735	53,083	7,934	1,444	1,275
BFSI	4,415	-	2,649	1,324	441
Building, Construction industry and Real Estate	28,603	8,581	14,302	4,290	1,430
Chemicals & Pharmaceuticals	164	33	49	49	33
Construction Materials and Building Hardware	1,776	178	1,155	355	89
Education and Skill Development	24,272	-	-	21,845	2,427
Electronics and IT hardware	286	29	143	100	14
Food Processing	1,195	358	358	358	119
Healthcare Services	20,676	-	2,068	14,473	4,135
Textile and Clothing	2,438	488	1,463	366	122
Transportation, Logistics, Warehousing and Packaging	11,520	2,304	6,681	2,304	230
Total	**159,541**	**65,162**	**37,064**	**46,981**	**10,334**

Source: IMaCS Analysis. Note: Numbers for sectors will not add up to the total due to very small numbers accounted for by sectors such as auto and auto components; travel, tourism, hospitality and trade, furniture and furnishings.

The incremental supply of work-force between 2012 and 2022 is estimated at 1.47 lakh persons. This is slightly lower than the demand, indicating that there should be development in some of the workforce. The demand for skilled and highly skilled people is estimated to be more than the supply going forward. There are some major industries in the district and are planning for expansion in coming years. These industries would require manpower at semi-skilled, skilled and highly skilled level. Therefore, Training infrastructure in the district needs to be developed to match the incremental demand of the district. Also, there are attitudinal issues among youth towards working in industries and they do not want to be controlled. General awareness program need to be conducted to overcome these issues and match the human resource demand.

Figure 211: Skill wise incremental demand and supply in Raichur district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on our field surveys in Raichur district, we have found out that sectors where skilling interventions are required are mainly 'food processing', 'power' and 'engineering based industries'. New jobs are likely to be created in these sectors. Also, the existing employees in these sectors will require skill up gradation training because of the advancement in technology.

Table 365: Sectors present in Raichur district – comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Raichur	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		

High Growth Sectors identified by NSDC	Raichur	Karnataka
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		
Additional sectors	**Raichur**	**Karnataka**
Power Sector		
Engineering based industries		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 366: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Food processing - Food grain milling			√
Others – Power sector	√		√
Others (Engineering based industries)	√		√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Food processing – Food grain milling

Paddy is grown in abundance in the district. As of 2008-09, area covered under paddy production in the district was 164,925 hectares which constitutes over one-fourth of the total area under cultivation of all crops. The taluks, Sindhanur and Manvi are also referred to as 'rice bowl of the state'.

Based on the availability of this raw material, many rice based industries have come up in the district. Many rice milling units are available in the district and they process various types of rice for consumption. Some of the milling units are also involved in the export market.

Rice milling plant

Figure below gives the value chain of the rice based industries present in Raichur district.

Figure 212: Value chain within the food grain milling segment in Raichur district

Table 367: Skill gaps in rice milling industries in Raichur district

Role, educational qualification	Expected competency	Skill gaps
Manager / Supervisor/	▪ Visual examination skills for faster	▪ Lack managerial capabilities ▪ Inadequate knowledge about

Role, educational qualification	Expected competency	Skill gaps
Quality control (any degree)	segregation and checking of input/output ▪ Ability to record the results as they are observed and reporting on adherence to standards ▪ Ability to effectively communicate with the team and brief them of production objectives ▪ Supervise the entire process flow ▪ Managing other workers in the mill	machineries used ▪ Lack of understanding about modern technology used in rice milling
Operator (10th / 12th pass with 1-2 years of Experience)	▪ Ability to handle breakages/breakdown in machine parts ▪ Technical knowledge of milling machinery ▪ Knowledge about various types of rice and variation in the process flow for each type ▪ Ability to check and maintain the machinery on a regular basis	▪ Lack knowledge about modern machineries (imported machines used in milling) ▪ Inadequate planning of work schedules
Helpers (8th standard/ illiterate)	▪ Knowledge of basic controls and settings of machines being worked on ▪ Knowledge about types of rice and process required for each type ▪ Ability to stitch gunny bags neatly so as to avoid leakage ▪ Basic importance of quality maintenance in terms of consistency with respect to. following rules / guidelines	▪ Inability to understand the instructions given by supervisor/operator ▪ Inability to follow best hygienic practices

Source: IMaCS Analysis

5.2. Power sector

Raichur district has few of the leading power industries of the country. The district has the famous 'Raichur Thermal Power Station', operated by the Karnataka Power Corporation Limited (KPCL). This was the first thermal power plant to set up in the state of Karnataka. This power station accounts for about 40 per cent of the total electricity generated in the state. There are also other companies such as Koganti Power Limited and Bhagyanagar Solvent Extractions Private Limited involved in power sector in the district. As of march 2011, the district had three large industries under power sector investing around Rs. 2,958 crore. The sector currently employs about 2300 people.

There are also significant new investments are made in power sector in the district. During the Global Investors Meet (GIM) held in 2010 in Karnataka, two Memorandums of Understanding (MoUs) amounting to more than Rs 5,000 crore were signed for the district. Once set up, these are estimated to employ around 1,500 persons. In the recently conducted Global Investors Meet (GIM) 2012, two MoUs were signed in power sector for Raichur district amounting to Rs. 14,000 crore.

The power sector is set for expansion in the district and there is a huge potential for employment generation in the sector for the district. The employment for the government controlled power units are recruited at a central level. However, for the semi skilled and labour category of workforce, the industries are recruiting people locally. While interacting with the key industries involved in power sector, they mentioned that they are experiencing skill gaps with the workforce.

Figure 213: Power generation process in a thermal power station

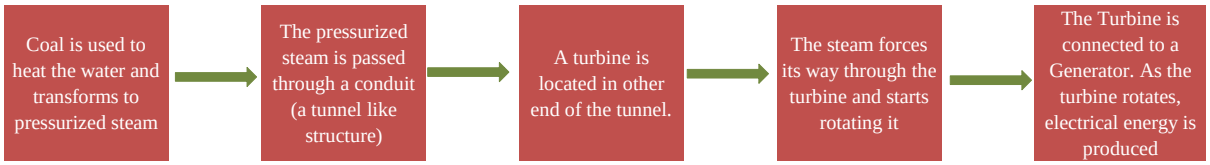


Table 368: Expected competency in power sector for Raichur district

Role, educational qualification	Expected competency	Skill gaps
Supervisors (Engineering / Polytechnic with experience in the industry)	▪ Knowledge about latest technology advancement and equipment usage ▪ Cross discipline knowledge ▪ Ensuring adherence to environmental and safety norms ▪ Leadership and people management skills	▪ Inability to manage the local people who are sub-ordinates ▪ Lack of cross discipline knowledge
Operators & Workers (ITI / 10th pass with experience)	▪ Ability to execute as per directions ▪ Ability to handle different machines ▪ Operating knowledge of heavy earth moving equipment like drillers, dumper, excavators, mechanised loaders, cranes	▪ Lack discipline at workplace and non-serious about job ▪ Lack exposure to basic equipment / machines and their usage ▪ Lack multi disciplined skills such as welding, fitting

Source: IMaCS Analysis

5.3. Others – Engineering based industries

In addition to the sector mentioned above, Raichur district is also home to many engineering based industries. Some of the prominent manufacturing plants include Surana Industries Limited, Mysore Petrochemicals Limited, etc. These units produce final product such as sponge iron, steel, petroleum products, bulk drugs, etc. For a detailed list of industries and end products, refer to. These large industries currently employ around 3300 people in the region.

Also, during the Global Investors Meet (GIM) held in 2010 in Karnataka, seven Memorandums of Understanding (MoUs) amounting to Rs 11,978.06 crore were signed for the district. Of this, five MoUs amounting for Rs. 11,950 crore are manufacturing industries which has potential to employ around 4700 people. Some of the end products of these units include steel, power, distilleries, etc. In the recently conducted Global Investors Meet (GIM) 2012, four out of the total eight MoUs signed for the Raichur

district is of engineering based industries. The value of these contracts amounts to Rs. 14,650 crore. The district is attracting a lot of investment from manufacturing units. Power and Steel are the major sector of the industries that are investing in the district.

These industries will need specialised labour for their respective industries. However, manufacturing industries of various sectors would require workers like turner, welder, fitter, electrician, etc. Generally, these workers are from the ITI background. They include both trainees and full time workers. Therefore, the district has a huge potential for the technical and skilful labours to be employed in these engineering based units. The district is currently facing shortage in the skilled and semi skilled workforce. For details about the skill gap prevailing among these existing workers, refer to the below table:

able 369: Skill gaps in engineering based industries in Raichur district

Role, educational qualification	Expected competency	Skill gaps
Fitter / Turner / Machinist / Welder / Operator (ITI or 10th pass with 1-2 years of experience from a similar industry)	▪ Should have basic knowledge in their respective trade ▪ Understanding of intended use of tool/machinery ▪ Ability to understand basic production process ▪ Ability to perform operations requiring multiple skills - for example, a fitter should be able to perform the job of an auto electrician ▪ Ability to minimize wastage of raw materials and consumables, maximize production and understand the corresponding impact on cost, quality and time ▪ Ability to understand and follow	▪ Inadequate knowledge about modern machineries used ▪ Lack of understanding about modern technology used in production process ▪ Inability to do work according to the specified instruction or requirement ▪ Lack of knowledge about the entire production process

Role, educational qualification	Expected competency	Skill gaps
	instructions from supervisors, shop heads, plant head etc. ▪ Adhere to the work floor instructions and perform operations accordingly	

Source: IMaCS Analysis

6. Recommendations

Recommendations for Raichur district focuses on the industries that have employment generation potential and also facing skill gap of manpower in their respective industries. The industries that are taken into consideration are Food processing – rice milling units, power sector and engineering based industries in the district. These sectors have expansion plans in the coming years and also expected to add new units in the district.

Raichur district is basically an agrarian economy and significant percentage of employment is concentrated in agriculture, thus, major up-skilling can be done for those workers, updating them of latest techniques of farming. This will help them improve their livelihood opportunities and will increase their income levels. While the detailed recommendations follow, summary is given in the table below.

Table 370: Key recommendations for Raichur - summary

Sector	For Government players	For private players	For Industry
Food Processing – Food grain milling	▪ Short term courses and up skilling training program for existing workers can be offered	n/a	▪ Training farmers on modern farming practices, irrigation, usage of fertilizers and pesticides, weed control.
Power sector	▪ Improve the infrastructure and	▪ Training for semi skilled workforce in	▪ Conduct 'in house' job specific training

Sector	For Government players	For private players	For Industry
	update the courses in the ITI ▪ Guest lecture from industry expert and industry visits can be organized	the industry ▪ Improve the infrastructure (lab and equipments) and upgrade the courses relevant to the sector	▪ Periodic safety measures training ▪ Tie up with local ITI for recruitment of trainees
Engineering based industry	▪ Up gradation of existing courses and impart practical exposure to students ▪ Tie up with industry in course up gradation and placement of students ▪ General awareness program for youth to explain the benefits of working in industry	▪ Interact with industry players and introduce/update trades based on it ▪ Improvement in infrastructure, equipments and enhance the practical exposure of a student ▪ New state of the art technical institute can be set up to provide training to students with latest technology and equipment	▪ Can set up training institutes through PPP model ▪ Assist in curriculum development, infrastructure support and placement of students in training institutes

6.1. Food Processing – Food grain milling

Paddy is grown in abundance in the district and the crop accounts for over one-fourth of the total area under cultivation of all crops. Many rice milling units are available in the district and they process various types of rice for consumption. Some of the milling units are also involved in the export market. There are many people in the district employed in these milling units. Most of the workers are classified

under the semi-skilled workers category. They learn the operational process on the job. The industry is also mechanised and automated. Training opportunities are limited in this sector.

Government

Government can involve in improving the skill of the man power involved in this industry. There are some training given by the state government in relation to agriculture such as commodity based training program by Karnataka state agricultural marketing board and district agriculture training centre. Raichur Rice Millers' Association can also be involved in capacity building for this industry. Up skilling programs can be offered to the existing workers on the latest technologies in the milling operations.

Industry

Based on our interactions with industry players in milling unit, we observe that they do not face major skill gap among workers. The industry is mechanized and the processing is automated. Semi skilled workers are required to operate the machines and other works involved in the unit. They are able to source the people locally in the district. Workers learn the job through experience. The industries can provide some help at the farming level. These industries could aid farmers through measures such as contract farming. They could also conduct training program for farmers on modern farming practices, irrigation, usage of fertilizers and pesticides, weed control, etc. This would result in increase of productivity from farmers and also beneficial to the industries by procuring quality goods (raw material).

6.2. Power sector

Raichur district has few of the leading power industries of the country. The district has the famous 'Raichur Thermal Power Station', operated by the Karnataka Power Corporation Limited (KPCL). There are also other companies such as Koganti Power Limited and Bhagyanagar Solvent Extractions Private Limited involved in power sector in the district. The power sector is set for expansion in the district and there is a huge potential for employment generation in the sector for the district.

Private players

The industry generally recruits people at a central level. However, for the semi-skilled level of workforce, they recruit people locally. Students from ITI are appointed as trainees in these industries. The industry prefers students from ITI who have taken trade such as mechanical, electrical and instrumentation.

There are some private training institutes in the district which do not have adequate infrastructure facilities. The students are lacking practical exposure because of this scenario. The private ITIs can take the following steps in supplying skilled manpower to the power sector:

- Improve the infrastructure facilities and enhance the practical exposure of students by collaborating with industry and increasing industry visits
- Upgrade the courses catering the need of power sectors such as mechanical, electrical, boiler and instrumentation to meet industry requirement.
- Invite guest lecturers form the industry to gain knowledge about the industry

Government

Government can also help in capacity building in this sector. There are government ITIs in the district and these institutions and they can also upgrade the courses specific to the sector. Upgradation on courses can be done by consulting with the industry experts in the sector. Guest lecture to students from industry expert can be invited to impart industry knowledge to the students and industry visits can also be organized for the students.

Industry

Some of the measures that can be taken by the industrial units are as follows:

- In house training: This training will be job specific
- Periodical safety measures training
- Tie up with training institutes in local area such as ITI and ITC. They can consult the institutions on curriculum, participate in guest lectures and assist them in placements

6.3. Others – Engineering based industries

Raichur district is also home to many engineering based industries. Some of the prominent manufacturing plants include Surana Industries Limited, Mysore Petrochemicals Limited, etc. These units produce final product such as sponge iron, steel, petroleum products, bulk drugs, etc. These industries will need specialised labour for their respective industries. They are recruited from all over the country. However, manufacturing industries of various sectors would require workers like turner, welder, fitter, electrician, etc. Generally, these workers are from the ITI background. They include both trainees and

full time workers. Therefore, the district has a huge potential for the technical and skilful labours to be employed in these engineering based units.

Government

Government can also help in capacity building in this sector. There is adequate number of government ITIs in the district. They can upgrade the existing courses to match the industry standards and impart practical exposure to the students. There can be a tie up made between the institution and the industry in the district. The course can be upgraded and implemented based on the industry interaction. And the industries can assist in placement of the students. By this way, the industry will be able to get the manpower with required skill set and the institutes will also be able to place the students.

There is adequate manpower in the district but are traditionally from farming background and are unwilling to join in industries. Based on our discussion with the industry players, it is observed that most of the semi skilled workers are first generation industry workers and have attitudinal issues towards working in industries. They are finding difficult in adapting to industrial scenario and do not want to be controlled. Therefore, general awareness programs can be conducted by Government (District Industries Centre) among youths and explain the benefits of working in industries such as improvement in standard of living and getting better salary.

Private players

As mentioned earlier, the engineering based industries recruit students from ITI for workers like turner, fitter, electrician, etc. Based on our stake holders discussions, we found that the industry is facing skill gaps in this sector. They feel the students lack practical exposure to the industry. Private training institutions need to improve their infrastructure and update the students about the latest technology available and used in the industry. The educational institutes need to interact with the industries and understand their requirement. The curriculum may also be modified to cater to the needs of local industries in the district. New state of the art technical institute can be set up to provide training to students with latest technology and equipment. Existing private ITI needs to improve their infrastructure, provide practical training to students and update curriculum to match industrial standards.

Industry

There are some major industry players in the district in sectors such as power and steel. It is observed that these industries are unable to get adequate skilled manpower form the district. On the job training is also provided to the workers to match the industry standards. The trainees do not possess adequate practical exposure from their education. This is attributed mainly to the lack of infrastructural facilities in the institutions. Few of the major industries can stake initiative in setting up training institutes (ITI/ITCs) in Public Private Partnership (PPP) model. Infrastructural and technical assistance can be provided by the industry players. Also, assistance on course curriculum and guest lecture support can be done. By this way, the industry will be able to get skilled manpower from these institutes matching the industry standards.

9.25. RAMANAGARA

1. Introduction

Ramanagara district was carved out of Bangalore Rural district in the year 2007. It got four sub-districts / talukas in its share, namely Channapatna, Kanakapura, Magadi and Ramanagara. The district is famous for its silk market, for which it is also known as the 'Silktown'. The district was also made famous by the Bollywood movie Sholay, which was shot on the rocks of the district.

The district is also known for its many industrial units, including Toyota and Coca-Cola. Its taluk Channapatna is known for its traditional wooden toys. The district has a total land area of 3,559 sq. km., which is 1.86 per cent of the total State area. Over 47 per cent of the district area is net sown area and agriculture is the main occupation of the people. Ragi is the key crop grown.

The district also benefits from its proximity to Bengaluru. Over 5,000 to 6,000 people migrate from Ramanagara to Bengaluru on a daily basis for work. The district is also home to Wonderla, which is a famous amusement park and attracts visitors from Bengaluru and nearby areas.

Ramanagara district has a total population of over 10.8 lakh people, which is about 1.7 per cent of the total population of Karnataka. The population is more or less evenly distributed between the four talukas, with Kanakapura leading with 33 per cent of the population, followed by Channapatna with 25 per cent, Ramanagara with 23 per cent and the remaining 20 per cent in Magadi.

Table 371: Comparison of Ramanagara district with Karnataka – key indicators

Indicator	Year	Ramanagara	Karnataka
Area, in sq.km.	2001	3,559	191,791
Percentage share in State geographical area, %	2001	1.86%	100%
No. of sub-districts	2011	4	175
No. of inhabited villages	2001	770	27,481
No. of households	2001	n/a	10,401,918
Forest area as a % of total geographical area	2001	19.65%	13.90%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Ramanagara district has a population of 10.8 lakh persons – 1.7 per cent of the State population. The district's literacy rate is 69.2 per cent, lower than the State average of 75.6 per cent. Male literacy at 76.9 per cent is higher than female literacy rate at 61.3 per cent.

Most of the population (79 per cent) lives in rural areas. In fact, as mentioned earlier, agriculture is also the main occupation of the people of the district

.

Table 372: Key demographic indicators

Indicator	Year	Ramanagara	Karnataka
Population, No.	2011	10,82,739	61,130,704
Decadal growth rate of population, %	2001-11	5.06%	15.70%
District's share in State's population, %	2011	1.77%	100%
Urban population as a percentage of total population, %	2001	20.87%	34%
SC population, %	2001	18.54%	16.00%
ST population, %	2001	1.74%	7.00%
Sex ratio, No. of females per 1000 males	2011	976	968
Population density, per sq. km.	2011	303	319
Literacy rate, %	2011	69.20%	75.60%

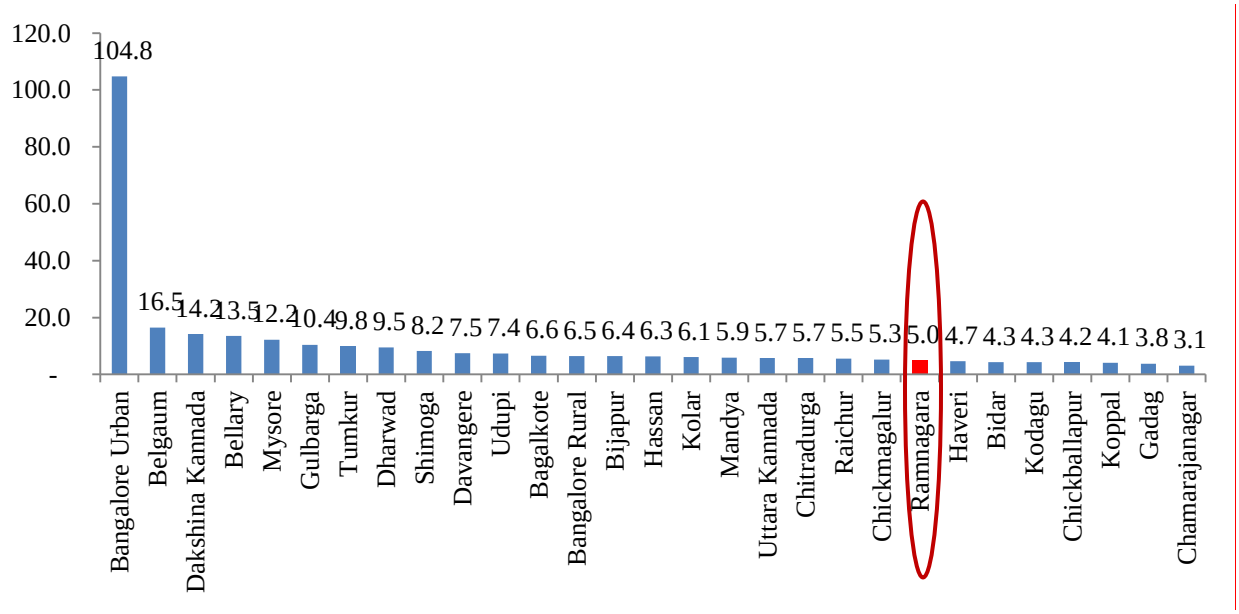
Indicator	Year	Ramanagara	Karnataka
Main workers, No.	2001	491,117	19,364,759
Marginal workers, No.	2001	109,534	4,170,032
Working age population* as a percentage of total population, %	2001	n/a	63%
Work participation rate^, %	2001	39%	45%
HDI	2001	n/a	0.65

** Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*
Source: Census 2001, Census 2011

2.2. Economy

As of 2008-09, Ramanagara district had the eighth smallest Gross District Domestic Product (GDDP) in Karnataka at Rs 4,982.60 crore (1.6 per cent of the Gross State Domestic Product). In terms of per capita GDDP, it ranked fifth lowest amongst 30 districts at Rs 44,113 per annum. This was lower than the State average of Rs 53,101.

Figure 214: Gross District Domestic Product, in Rs thousand crores, as of 2008-09

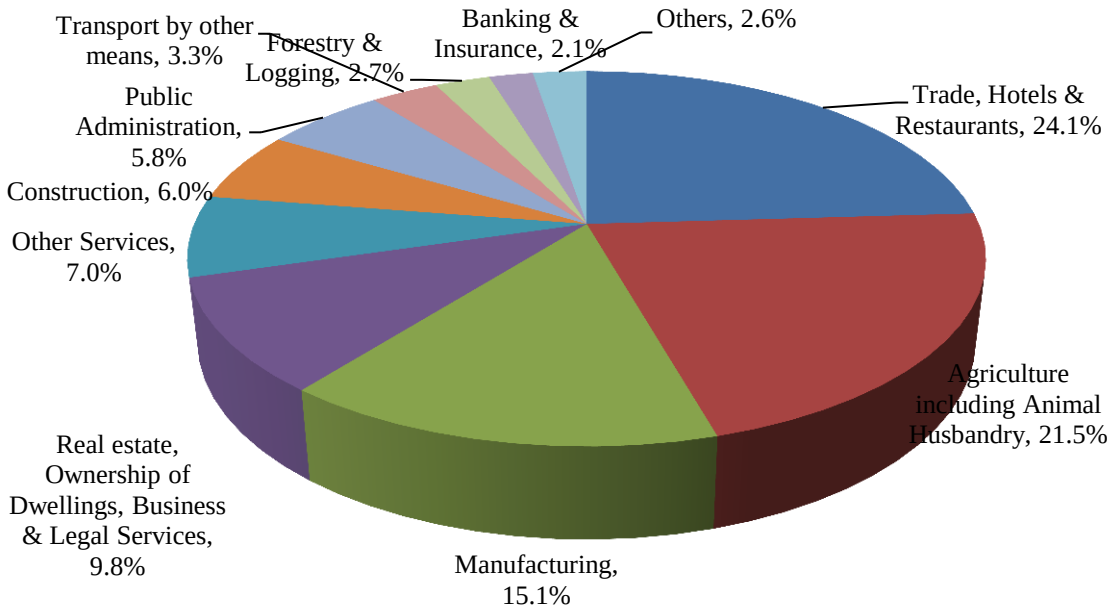


Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 53 per cent in 2008-09. This is followed by primary sector at 24 per cent and secondary sector at 23 per cent.

.

Figure 215: Sector wise distribution of Ramanagara's GDDP, as of 2008-09, 100% = Rs 4,982.60 crore



Source: Karnataka Directorate of Economic and Statistics

Agriculture: Of the total area of 3,559 sq. km. in the district, about 47.5 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of ragi, which occupies 44 per cent f the total cropped area. For details of crops grown in Ramanagara district, refer to annexures.

Industry: Ramanagara district is mainly agrarian. However, many industries have also come up, mainly due to district's proximity to Bengaluru. As of March 2011, the district had 24 large and medium scale industrial units, employing 5,344 persons. Of these, six were Toyota Group companies only, involved in manufacturing automobiles and auto components. Other prominent companies included Hindustan Coca Cola Beverages Private Limited. For detailed list of companies, refer to annexures.

The district also has several Small Scale Industries (SSIs), mainly in sectors such as wood and textiles. As of March 2010, the district had 479 SSIs, employing 3,013 persons. Refer to annexures for details. Bidadi industrial area and Harohalli industrial area are two most prominent industrial areas in the district.

During the Global Investors Meet (GIM) held in 2010 in Karnataka, 32 Memorandums of Understanding (MoUs) amounting to Rs 1,613.69 crore were signed for the district. Once set up, these are estimated to employ over 14,040 persons. For details of these projects, refer to annexures. Karnataka held its second

GIM in June 2012. During this event, 25 MoUs / Expressions of Interest / Registrations of Interest happened for Ramanagara district alone. These have a proposed investment of Rs. 7,364 crore. These are expected to provide direct employment for over 23,058 persons. The interests have been signed for projects in several sectors including automobile; bio-tech and pharma; education; energy; engineering; and tourism. For details of these projects, refer to annexures.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 53 per cent of GDDP in Ramanagara district. Of all the services, the key services in the district are of 'trade, hotels and restaurants' at 24.1 per cent of GDDP.

2.3. State of education

As of March 2010, Ramanagara district had 1,909 schools with 155,555 students enrolled. There were 68 pre-university (PU) colleges with 13,415 students. There are also eight general colleges, three polytechnics (for technical education), and six engineering colleges. For details of courses offered by polytechnics, refer to annexures.

Table 373: School education infrastructure in Ramanagara district, as of March 2011

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Govt.	946	49,632	455	20,888	106	20,477
Aided	8	5,428	23	3,255	58	14,804
Unaided	32	22,161	139	6,628	102	9,705
Others*	6	205	17	1,195	17	1,177
Total	992	77,426	634	31,966	283	46,163

*Source: DISE 2010-11; *Others include social welfare, local body, other management schools, and central schools.*

Table 374: Higher education infrastructure in Ramanagara district, as of March 2010

Colleges	No.	Students
PU Colleges	68	13,415
General	8	6,889
Polytechnic	3	631

Colleges	No.	Students
Engineering	6	1,680

Source: Ramanagara District At a Glance 2009-10

For vocational training, Ramanagara district had a total of 27 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, four were Government ITIs, four were private aided ITIs and remaining 19 were private unaided ITIs. All the 27 ITIs together have a seating capacity of 2,837.

Table 375: Key ITI indicators in Ramanagara district, as of March 2012

Indicator	Value
Total Number of ITIs	27
Number of Government ITIs	4
Number of Private aided ITIs	4
Number of Private unaided ITIs	19
Total Seating capacity	2,837
Student pass rate	70-80%
Student drop-out rate	20%

Source: IMaCS Primary Survey;

Based on our discussions with the key stakeholders in Ramanagara district, we have found that on an average, of all the students that pass out from an ITI in each year, about 90 per cent find jobs in the market. Most of the people from ITIs are absorbed in Coca-Cola and Toyota in Ramanagara and Bescom and Pragati Power, ABB, HMT in Bengaluru. For details on courses offered by ITIs in Ramanagara, refer to annexures. About 40 per cent of the students are able to find jobs in Ramanagara, while the remaining 60 per cent find jobs in Bengaluru.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions. Within Government, District Industries Centre (DIC) through Apparel Training and Design Centre (ATDC) offers courses in apparel and textiles. There are seven ATDC centres in the district. There is also Keonics, which provides training on computers. There are many private training institutes as well, offering courses in trades such as nursing, computers, fashion designing, garments and motors. For details, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Ramanagara district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- Over 90 per cent of the youth want to move to Bengaluru in hope of finding better job opportunities. They expect a better salary and lifestyle in Bengaluru. However, if more opportunities come up in Ramanagara district, they would want to return to their roots.
- Just about 10 per cent of the youth wish to go for higher studies.
- Youth have a preference for Government certified courses as they feel that Government certificates are better valued in the market and help get better jobs.
- There is high demand for automotive engineering course due to presence of Toyota in the district. There is also demand for automotive painting trade.
- There is also demand for courses in animation, computer training, CNC machines, multimedia, beauticians etc.
- Willingness to pay for private training is low.
- Want English and communication skills to be introduced as one compulsory course.

3. Developmental concerns

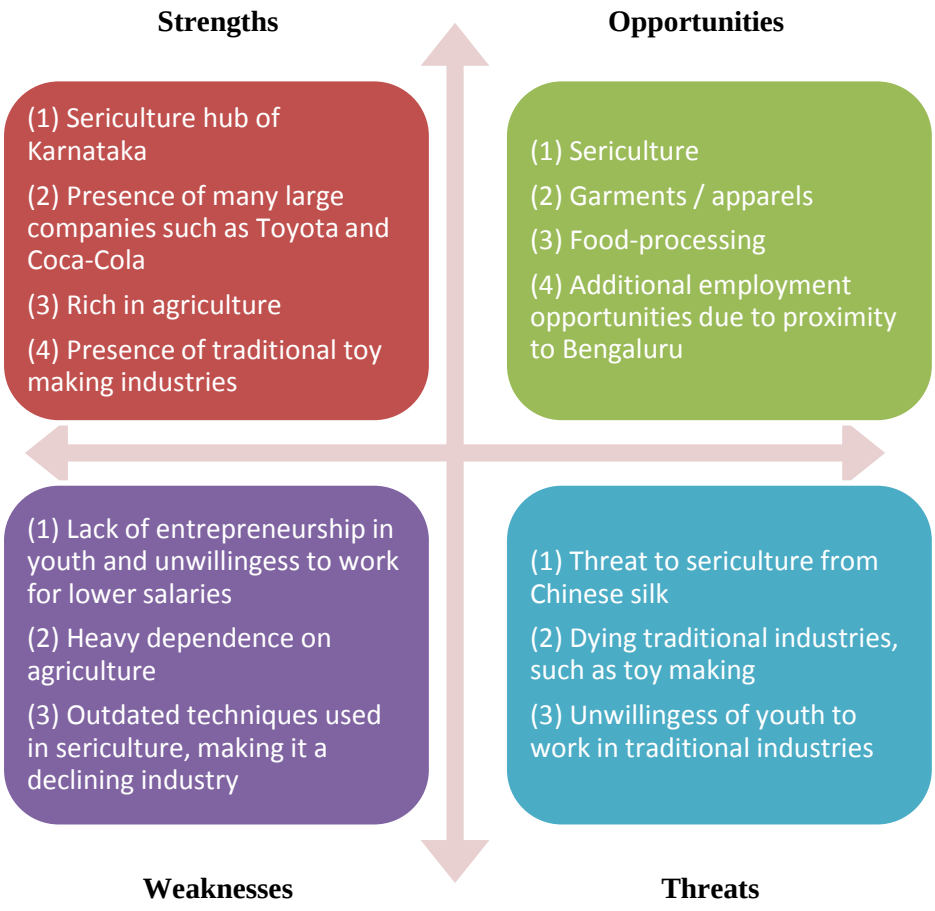
Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Attitudinal issues**: Based on the stakeholder discussions, we have found out that people in the district are not interested in doing manual and blue collar jobs. For activities such as construction, labour is coming from Bihar and Tamil Nadu. Most of the people want to take up white collared jobs in Bengaluru, for which they are willing to travel up and down every day.

SWOT analysis

Based on the diagnostics of the Ramanagara district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 216: SWOT Analysis of Ramanagara district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 1.34 lakh persons is likely to be generated in Ramanagara district. The growth will be driven by sectors such as agriculture and allied, auto and auto components, travel, tourism and hospitality and construction.

Table 376: Incremental demand in Ramanagara – 2012 to 2022

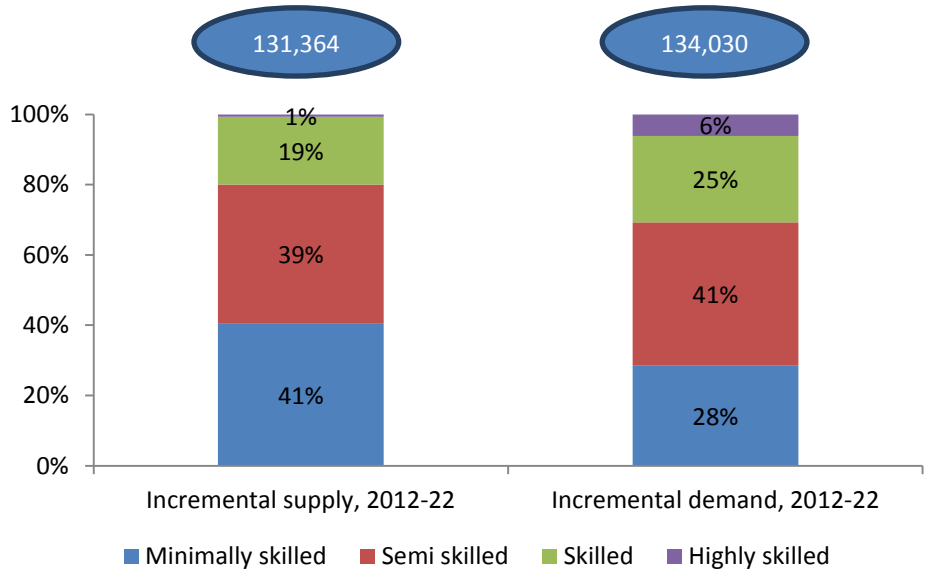
SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	21,384	17,810	2,662	484	428
Auto and Auto component	14,967	1,497	9,728	2,993	748

SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
BFSI	6,000	-	3,600	1,800	600
Building, Construction industry and Real Estate	14,095	4,228	7,047	2,114	705
Chemicals & Pharmaceuticals	66	13	20	20	13
Construction Materials and Building Hardware	875	88	569	175	44
Education and Skill Development	6,024	-	-	5,422	602
Food Processing	72	22	22	22	7
Furniture and Furnishings	295	118	118	44	15
Healthcare Services	9,579	-	958	6,705	1,916
Textile and Clothing	4,057	811	2,434	608	203
Transportation, Logistics, Warehousing and Packaging	6,835	1,367	3,964	1,367	137
Tourism, Travel, Hospitality & Trade	44,537	8,907	30,285	4,454	891
Unorganised	5,244	1,049	3,042	1,049	105
Total	**134,030**	**35,910**	**64,449**	**27,258**	**6,413**

Source: IMaCS Analysis

The incremental supply of work-force between 2012 and 2022 is estimated at 1.31 lakh persons. Going forward, this is estimated to be slightly lower than the demand of 1.34 lakh persons. This is primarily due to more and more industries setting base in Ramanagara. It benefits from its proximity to Bengaluru.

Figure 217: Skill wise incremental demand and supply in Ramanagara district – 2012 to 2017



Source: IMaCS Analysis

5. Skill mapping

Based on our field surveys in Ramanagara district, we have indicated the sectors where skilling interventions are required. These are highlighted in green in the table below. In addition, the district also has other manufacturing and engineering industries, which do not have significant employment generation potential, but are facing shortage of skilled manpower for functional skills such as plumbing, electrical, welding, metallurgy etc.

Table 377: Sectors where interventions are required in Ramanagara– comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Ramanagara	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 378: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Auto and Auto component	√		√
Food Processing	√	√	√
Textile and Clothing		√	√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Textiles and clothing industry (includes sericulture)

Due to its proximity to Bengaluru, Ramanagara district has started attracting many garment factories to its area, due to availability of cheap labour and land, as compared to Bengaluru. Some of the prominent names which have already shifted some of their units to Ramanagara district are Arvind Textiles, BRS Textiles, Lotus Clothing, Fashion Forum, Madura Garments and Lagna.

As of March 2010, Ramanagara district also had 65 textiles based SSIs, employing a little over a thousand workers. This was the highest number of employment under any category in SSIs in Ramanagara. Over and above these, the biggest contributor to textile and clothing sector in the district is 'sericulture', which is a major source of livelihood for over 19,000 farmers in the district. In this section, we have talked about the skill requirements of both the garment industry and sericulture.

Garment industry in Ramanagara

The textile industry in Ramanagara district is mainly focussed on garment stitching at present. Most of the companies situated here still have their head offices in Bengaluru only. Most of these garment companies provide in-house trainings and some even source people from ATDC.

Figure 24 given below explains the value chain of the textile and clothing industry. Of the entire value chain, only the circled parts exist in the district. These include (a) garments, and (b) silk, fibres and yarn. Within the garments industry, the value chain followed in Ramanagara district is given in Figure 7 below.

Figure 218: Value chain in textiles and clothing industry

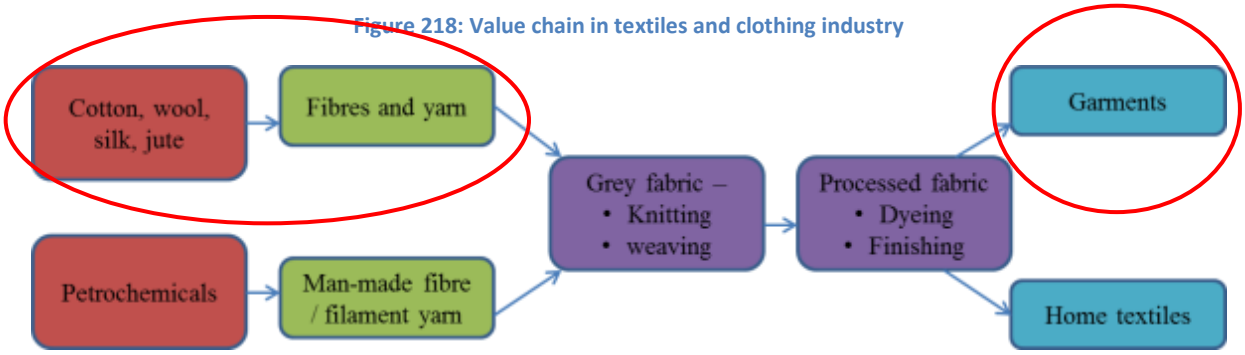


Figure 219: Value chain in garments industry – present in Ramanagara district

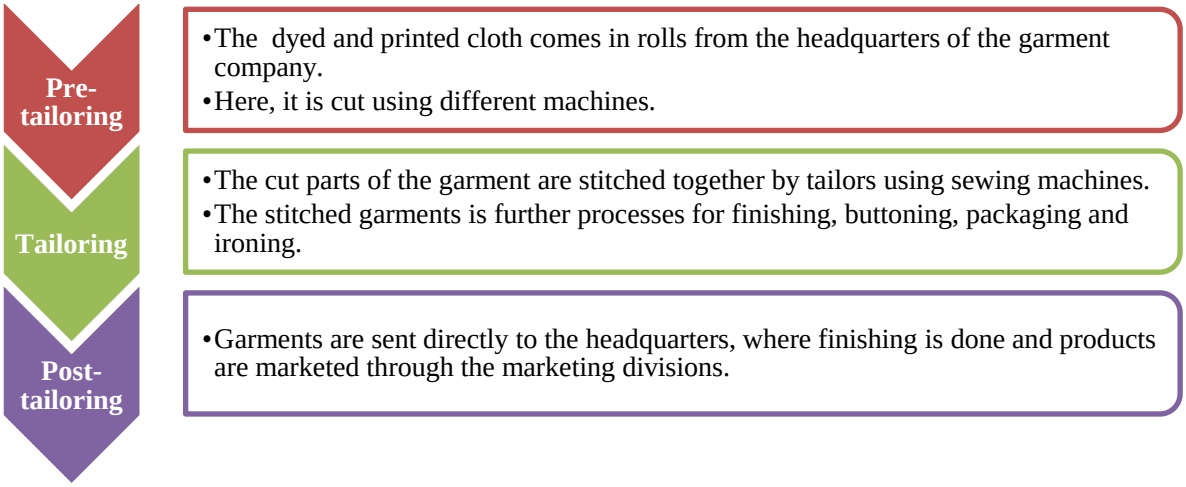


Table 379: Skill gaps in garments industry in Ramanagara district

Role, educational qualification	Expected competency	Skill gaps
Factory incharge / Manager HR and Manager Operations (Btech in mechanical engineering;	▪ Managing all the facilities and the functioning of the work-force ▪ Supervising of the work conducted by operators / tailors and conducting quality checks. ▪ Knowledge of pattern making. ▪ Ability to undertake inspection, production	▪ Managers with experience are hired from Bengaluru as experienced people are unavailable in the district. Thus, total lack of this skill in the district. ▪ Some of the team leaders

Role, educational qualification	Expected competency	Skill gaps
Btech or diploma in textiles and MSW with experience); Department Incharge (experienced persons)	planning and control ▪ In-depth knowledge of production processes and inspection methods ▪ Leadership skills ▪ Soft skills and interpersonal skills ▪ Ability to operate CAD	are, however, hired from amongst the locals who have gained experience by working in the factory.
Tailors / operators (SSLC and below)	▪ Tailors are classified into five categories based on their skill level. Higher skills mainly obtained from experience in the industry. ▪ Proficiency in tailoring / stitching is required for stitching garments with different specifications. ▪ Good machine control – knowledge of threading of sewing machine, stitching on different shapes, seaming garment components together in various fabrics to specified quality standard ▪ Knowledge of machine maintenance procedures ▪ Knowledge of pattern making, grading and draping ▪ Ability to understand instructions properly and stitch the garments based on them. ▪ Ability to work in teams / inter-personal skills. ▪ Soft skills	▪ All locals are hired and trained on-the-job ▪ Majority of them are completely untrained and are trained in-house by the company ▪ Key skill gaps include machine control, paper rolling, stitching, health and hygiene

Role, educational qualification	Expected competency	Skill gaps
	▪ Knowledge of buttoning, ironing and packaging	

Source: IMaCS Analysis

Sericulture industry in Ramanagara

The district has 23,744 rearers – sericulturists. There are 11,611 hectares of mulberry gardens. Sericulture is done in 1,148 villages and there are 1,664 women rearers. Ramanagara has the biggest cocoon market in the world. Most of the cocoons are sold to reelers in Ramanagara only. About 50 tons of cocoons are transacted every day. The district has 1,016 reelers. There are close to 3,000 license holders for reeling. However, only about 1,500 are active.

Government sponsored silk exchange is present in the district. Traders come from Bengaluru. There is a training institute for rearers and reelers in Chanapatna. Training was provided to 250 rearers last year on the use of new technology. Training is required on suit rearing, application of bio-fertilisers. Training also required for multi-hand machines.

The industry is suffering due to stiff competition from Chinese silk. There are also labour related issues.

There are spun silk factories also, using silk waste. Machines are willow machine (cleaning) > opener (sheet making) > carding (sliver making) > carding 2 (finishing) > rowing bobbin (drafting) > spinning > cone winding > twisting > cone winding.

Sericulture is one of the biggest economic activities in Ramanagara district employing over 19,000 farmers. Ramanagara is the second largest producer of silk in Karnataka, after Ramanagara district. The activity is mainly concentrated in Siddlaghata and Chintamani taluks. There are four big sericulture markets in the district, where about 40 tons of cocoons are traded every day and about four to five tons of silk is produced on a daily basis. The district has over 4,500 reelers (mostly Muslims), which are mostly concentrated in Siddlaghatta taluk. Of all the silk which is reeled every day, about 60 per cent of silk to local twisters and 40 per cent is sold outside to places like Tamil Nadu, Amdhra Pradesh, Gujarat and even Varanasi. The raw silk produced is further sent to Bengaluru via agents.

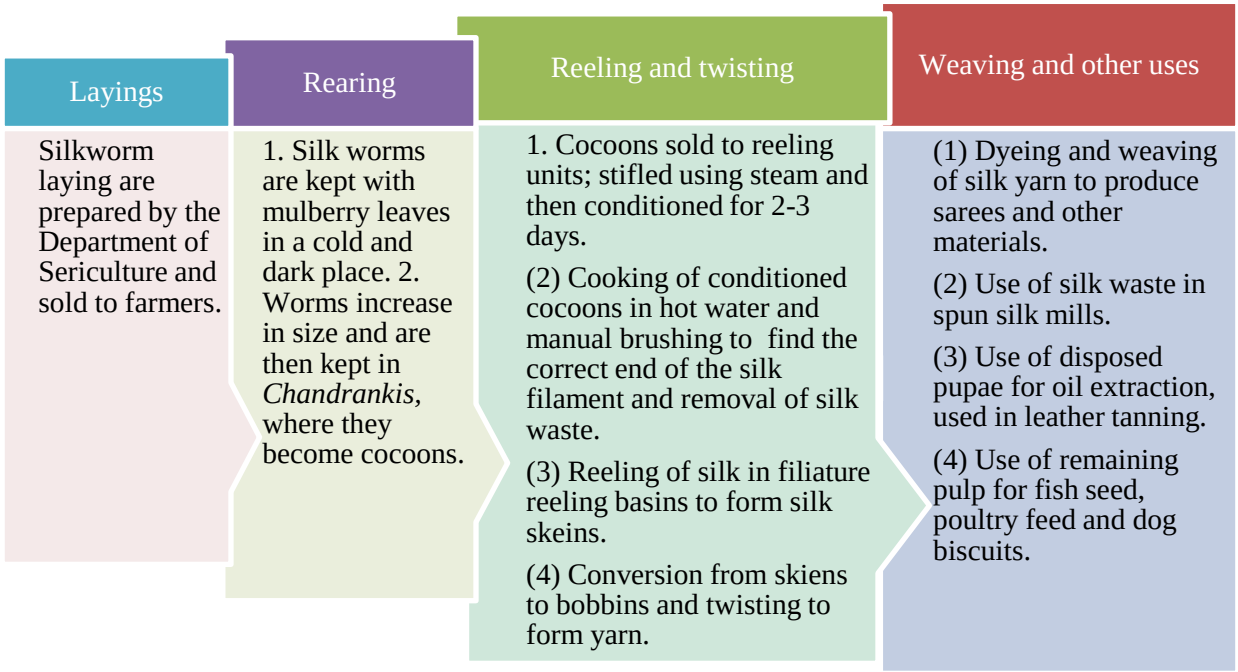
Table 380: Sericulture statistics for Ramanagara district, as of 2009-10

Taluk	Area under mulberry, hectares	Cocoon production, tonnes	No. of farmers engaged in the occupation	Value of silk produced, Rs. lakh
Bagepalli	654.65	444.58	1,691	800.25
Ramanagara	2,194.38	1,349.15	2,830	2,428.46
Chintamani	6,045.17	3,880.10	6,165	6,984.18
Gauribidanur	2,232.01	1,199.64	3,262	2,159.36
Gudibande	116.65	101.77	315	183.18
Sidlaghatta	5,761.44	3,851.04	5,480	6,931.87
Total	**17,004.30**	**10,826.28**	**19,743**	**19,487.30**

Source: Ramanagara District At a Glance 2009-10

Sericulture is an age-old activity in the district. It is a traditional skill which is possessed by the farmers and reelers. However, the sector has started to suffer in recent years, due to onslaught of cheap Chinese silk, which is cheaper and looks more attractive. The Department of Sericulture is taking steps such as encouraging farmers to cultivate bio-voltine cocoons, which produce better quality and attractive looking silk. However, farmers are apprehensive about this introduction, as bio-voltine cocoons can only be reeled on automated reeling machines, which are very expensive and can be accessed by a very few farmers. The sericulture value chain broadly includes layings, cocoon rearing, reeling and weaving.

Figure 220: Sericulture value chain



Spun silk unit in Ramanagara district






Silk reeling unit in Ramanagara district


Table 381: Skill gaps in sericulture industry in Ramanagara district

Role, educational qualification	Expected competency	Skill gaps
Farmer (no criteria for education, experience based)	▪ Knowledge of cultivating mulberry leaves ▪ Understanding of cocoon rearing ▪ Knowledge of keeping silk worms with mulberry leaves for adequate time in dark and cold places ▪ Knowledge of transferring the silk worms to *Chandrankis* for formation of cocoons ▪ Ability to sell the cocoons to reelers ▪ Ability to differentiate between different quality of cocoons ▪ Ability to cultivate modern technology bio-voltine cocoons, which are more resistant to pests ▪ Knowledge of pest control ▪ Quality control	▪ Traditional skill set. No skill gaps observed in cocoon rearing. ▪ Only need training on cultivation of bio-voltine cocoons.
Silk reeler (no criteria for education, experience based)	▪ Ability to stifle cocoons in steaming water of 90 to 92 degree Celcius ▪ Ability to condition the cocoons properly ▪ Ability to boil the cocoons in hot water ▪ Ability to separate waste from cocoons and to dispose it properly so that it can be	▪ Traditional skills possessed by the reelers for decades. ▪ Skill gap exists mainly in terms of labour shortage. The silk reeling process is hard and not many youth prefer to join this

Role, educational qualification	Expected competency	Skill gaps
	used for making spun silk ▪ Ability to do brushing to find the correct end of silk filament ▪ Ability to transfer the silk to reeling basins without causing any waste ▪ Ability to operate the reeling machine to form silk skeins / yarns	industry, also because the incomes are low. ▪ There is also lack of skills for use of automated reeling machines. ▪ Lack of knowledge on grading and quality of silk.
Silk twister (no criteria for education, experience based)	▪ Ability to convert silk from skein form to bobbin – winding process ▪ Ability to twist single yarn on the twisting machine ▪ Ability to double two bobbins ▪ Ability to twist doubled yarn in hank form ▪ Ability to de-gum twisted yarn using soap and soda	▪ Traditional activity, with no skill gaps. ▪ Only gap in terms of shortage of human resources who are willing to take it up as a trade

Source: IMaCS Analysis

5.2. Auto and auto components

Ramanagara district is home to Toyota and its ancillary companies in its Bidadi Industrial Area, making it an auto hub of a sorts. Toyota Kirloskar alone employs about 7,000 permanent and 3,000 temporary persons. Five different car models which are manufactured here are Innova, Corolla, Fortuna, Etios and Camrie. Other five Toyota companies are also present here as suppliers to Toyota Kirloskar. In addition, about 18 automotive based SSIs are also present in the district.

Presence of Toyota itself makes auto and auto components a high growth sector for the district. Toyota Kirloskar plans to hire over 2,000 persons in 2012-13 alone. The company's vision is to increase its market share from the current 6.5 per cent to 10 per cent by 2015. To meet this objective, the workforce will increase from the current 7,000 to 12,000 persons.

Presently, Toyota Kirloskar has an in-house training centre for its employees – called the 'Gurukul', where training is provided to all those who join the company. Module based training is provided for the entire assembly line. The Gurukul is one of its kind training centre. Since, the training needs are met internally, new training institutes are not required in the district. However, there is much to be desired from the ITI pass outs and the engineering graduates which the company hires. The quality of these has scope for improvement.

During GIM 2012, several MoUs were also signed for upcoming investments in the auto and auto components industry in the district. Some of the upcoming auto companies in the district include AT India Auto Parts (P) Ltd, Bosch Ltd., eLogic Infotech Pvt Ltd and expansion plans from Toyota Kirloskar Auto Parts Pvt. Ltd. These are expected to bring an expected investment of Rs. 3,271 crore and will employ over 5,000 persons.

Toyota Gurukul in Ramanagara district

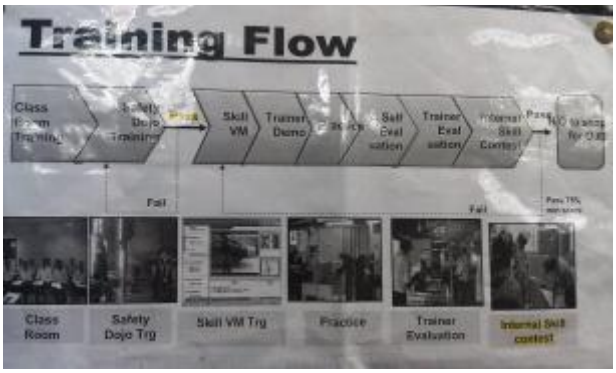
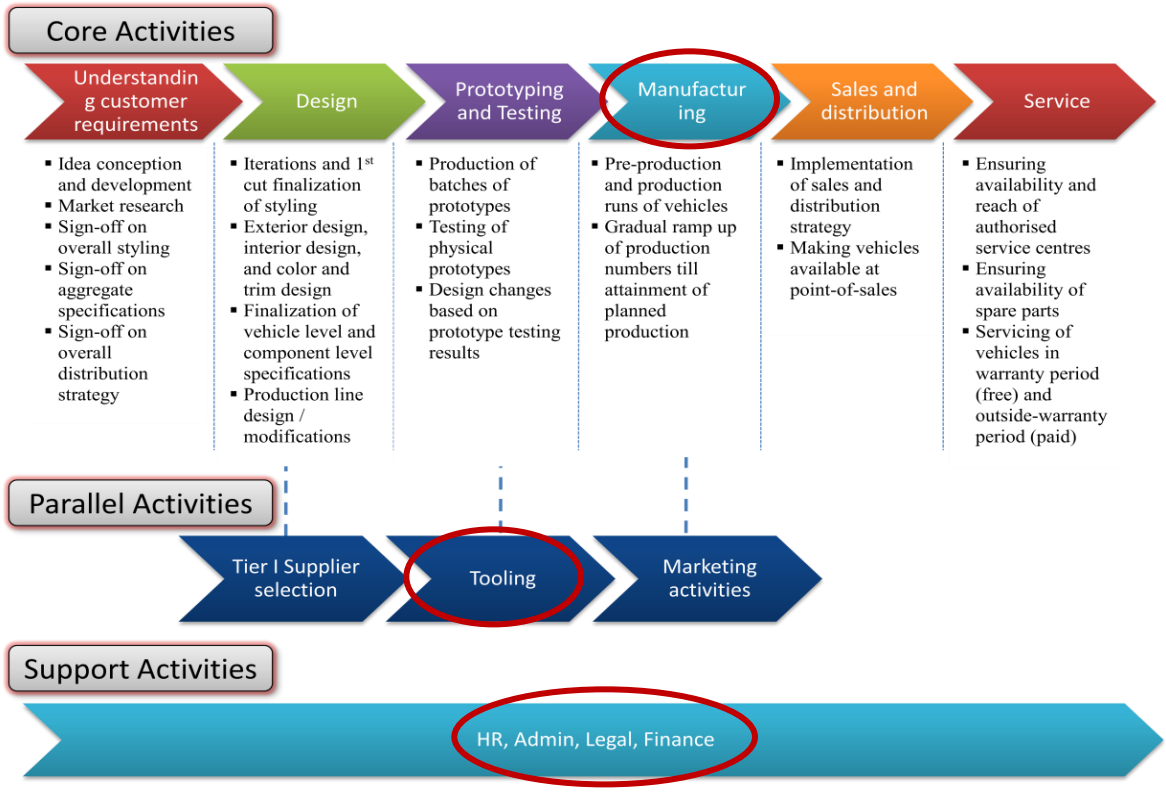


Figure 221: Value chain in auto and auto component industry



Circled parts are the ones which exist in the Ramanagara district.

Table 382: Skill gaps in auto and auto components industry in Ramanagara district

Role, educational qualification	Expected competency	Skill gaps
General Manager, Deputy General Manager, Manager, Deputy Manager, Assistant Manager (All	▪ Ability to clearly communicate with and ensure coordination between various production lines (e.g. engine shop, weld shop etc.) and departments (e.g. vendor development, production planning, etc.) ▪ In-depth knowledge of automobiles, their subsystems and functions of important parts such as suspension, exhaust, fuel system, coolant circuit, etc. ▪ In-depth knowledge of manufacturing processes in	▪ 30-40 per cent skill gap observed in engineers and these have to be trained on the job. Only benefit of hiring engineers and diploma holders over ITI pass outs is that the former have

Role, educational qualification	Expected competency	Skill gaps
engineers and experienced managers)	engine assembly, press line, weld line, paint line, final assembly, etc. ▪ Ability to map business requirements into production specifications such as daily volumes in conjunction with production planning personnel ▪ Ability to ensure minimum shop downtime ▪ Ability to clearly communicate and give instructions related to production requirements to supervisors ▪ Ability to supervise and manage personnel and ensure that production levels are met ▪ The ability to guide supervisors / workmen on product / process related queries ▪ Ability to adhere to and schedule work across shifts as per the production plan ▪ Ability to supervise optimum allocation of resources on any given task ▪ Ability to understand the training needs of workmen and supervisors and help design training programs accordingly ▪ Ability to effectively communicate with vendors for component / system related issues ▪ Basic clarity of financial/commercial effect of production methods	a higher grasping power and are able to learn quickly.
Group leader / Team leader (Polytechnics and experienced ITI personnel)	▪ Understanding of latest production techniques such as lean manufacturing ▪ Ability to ensure that daily production line targets are met ▪ Good knowledge of automobiles, their subsystems	▪ 70-80 per cent skill gap found in ITI and polytechnic pass outs as the industry is at a very advanced level,

Role, educational qualification	Expected competency	Skill gaps
	and functions of important parts such as suspension, exhaust, fuel system, coolant circuit, etc. ▪ Ability to understand differences in product lines and platforms and the corresponding ability to direct workmen accordingly ▪ Ability to manage the available resources – workmen, raw materials, consumables, etc. ▪ Knowledge of electrical and electronics systems, which are finding increased application in machineries and equipment ▪ Knowledge of concepts such as Six Sigma, JIT, TQM, Kaizen, 4-S is important ▪ Ability to allocate suitable work to workmen based on the skill levels of workmen working with them ▪ Ability to resolve conflicts that may arise among workmen / operators ▪ Ability to ensure productivity by employing efficient processes and maintaining coordination on line ▪ Ability to ensure quality by following inspection procedures, use of proper inspection gauges, etc. ▪ Ability to understand concerns expressed by workmen, if any, and the ability to help resolve the issues without escalation, and escalate issues if getting out of hand ▪ Orientation towards wastage minimization, cost reduction and quality workmanship ▪ Ability to ensure minimum shop downtime ▪ Strong problem solving, logical and analytical skills	while training in infrastructure is still at a very basic level. There is lack of industrial exposure not just for students but also for the faculty.

Role, educational qualification	Expected competency	Skill gaps
	▪ Ability to plan and schedule activities ▪ Ability to ensure safety and environmental compliance ▪ Man management skills, conflict management, scheduling ability	
Operator / Workman (ITI pass outs – all trades except the carpenter trade)	▪ Should have basic literacy, analytical ability and the ability to understand and follow shop floor instructions ▪ Should have relevant knowledge of working of car systems, such as working of a fuel circuit, functioning of the cooling circuit, etc. ▪ Ability to operate and / or maintain both general and special machines such as wheel nut tightening machine, fuel and coolant filling machines, flexible manufacturing systems, AGVs, etc. ▪ Ability to adhere to Standard Operating Procedures (SOP) for all variants / versions on a single platform / across platforms ▪ Ability to carry out basic trouble shooting of machines in case of breakdown ▪ Ability to perform operations requiring multiple skills – for example, a fitter should be able to perform the job of an auto electrician ▪ Ability to minimize wastage of raw materials and consumables, maximize production and understand the corresponding impact on cost, quality and time ▪ Ability to highlight aberrations in daily production processes	▪ 70-80 per cent skill gap found in ITI and polytechnic pass outs as the industry is at a very advanced level, while training in infrastructure is still at a very basic level. There is lack of industrial exposure not just for students but also for the faculty.

Role, educational qualification	Expected competency	Skill gaps
	▪ Adherence to required quality levels of production ▪ Ability to understand and follow instructions from supervisors, shop heads, plant head etc. ▪ Ability to understand and conform to basic shop floor safety practices such as wearing gloves when handling cast parts, being aware of dangers of interfering with machine / equipment, etc. ▪ Knowledge of assembly line operations, quality management techniques, fabrication techniques, welding techniques, cutting, machining, etc ▪ Understanding of drawings, knowledge of usage of instruments, measurement techniques and maintaining tolerances ▪ Knowledge of principles of manufacturing such as lean manufacturing, managing safety at work, Kiazening, Overall Equipment Efficiency (OEE), etc ▪ Have complete knowledge of / be adept in a particular trade (e.g. painting, fitting, ▪ welding, etc.) ▪ Ability to conform to work schedules and complete the assigned work on time ▪ Ability to maintain discipline at the shop floor, punctuality and regular attendance at workplace	

Source: IMaCS Analysis

5.3. Food processing

Food processing industry in the district is mainly dominated by the presence of Hindustan Coca-Cola Beverages Pvt. Ltd. The company was set up in the district in year 1998. It is spread over an area of 16 acres. It is manufacturing Coke, Sprite, Fanta, Maaza, Limca, Thumbs Up, Pulpy Orange, Pulpy Nimbu

and Kinley water in the Ramanagara plant. Due to global health and hygiene standards, most of the processes in the food processing industry have become increasingly mechanised. The same is the trend in case of Coca-Cola. Thus, the company has minimal human resource requirements. Currently, it hires only about 285 employees. About 75 per cent are locals (most of them are originally from UP and are settled in the district for the last 10-15 years or more) and remaining 25 per cent are from Bengaluru, Tamil Nadu and Hosur.

During GIM 2010, the company signed an MoU for plant expansion, which can lead to employment generation for 250 more people. In addition, during GIM 2010, Saj Food Produccts Pvt. Ltd. Signed an MoU for setting up a unit in the district for biscuits, cookies, cakes, rusks and extruded snacks. The company is expected to generate employment for 1,025 persons.

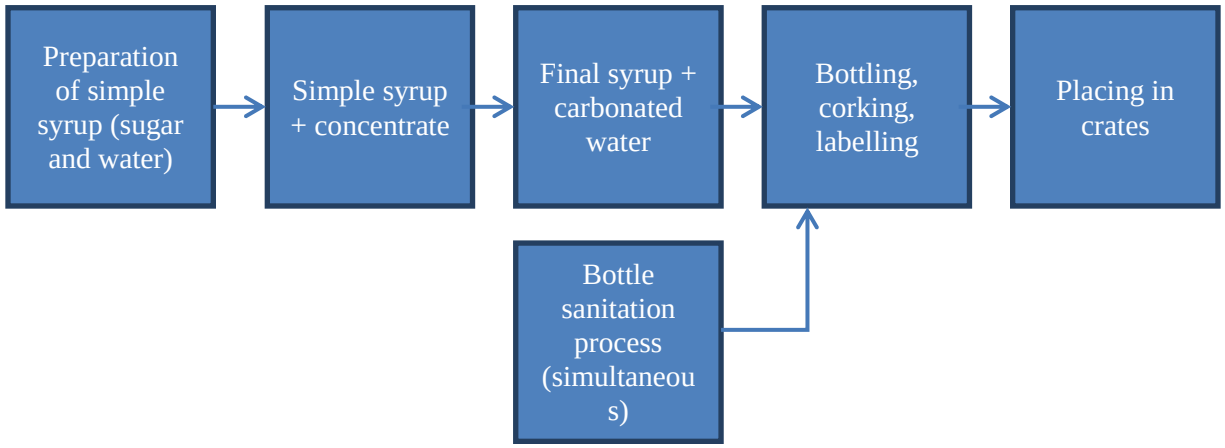
Going by the committed investments, the food processing industry in the district does not have significant employment generation plans. However, the skill gaps faced by the industry are those which are common across other industrial units in the district as well. Thus, those skill gaps if addressed could benefit other industries as well.

Key ***skill gaps*** observed are:

- High attrition rates in people in sales and marketing
- Lack of knowledge in ITI pass outs in machine operation
- Lack of practical exposure in ITI pass outs
- Lack of knowledge on Standard Operating Measures
- Lack of English speaking and communication skills
- Shortage of people in neumatics and hydraulics

A lot of skill gaps are attributed to lack of interaction between industry and the training institutes.

Value chain in beverage segment



6. Recommendations

Recommendations for the Ramanagara district are mainly focused on three sectors – textiles and clothing (mainly sericulture); auto and auto components and food processing. The recommendations are a mix of interventions for the Government and the private sector. In addition, there are a few other recommendations which are some broad themes of skill development in the district.

Table 383: Key recommendations for Ramanagara district – summary

Sector	Government	Private training providers	Industry
Textiles and Clothing	▪ Department of Textiles to strengthen ATDC by expanding seats and improving the quality of infrastructure and faculty ▪ Department of Sericulture to expand the coverage of its training programmes to include more rearers and reelers	▪ To join hands with the Silk Reelers Association in the district to provide training on modern reeling techniques	▪ Industry needs to collaborate with training providers
Auto and auto components	▪ Department of Employment and Training to focus on trades catering to the auto industry in the district	▪ Private training institutes can introduce courses in painter trade, electrical, power electronics, MMV etc.	▪ Industry is already in advanced stages, thus no new recommendations required
Others	▪ To continue focus on industry interactions to	▪ Other training opportunities exist in	▪ Need for greater collaboration

Sector	Government	Private training providers	Industry
	strengthen its existing courses.	providing training in wooden toy making, coir products manufacturing, bamboo articles manufacturing etc.	between industry and training providers

6.1. Textiles and Clothing

As discussed in the report, Ramanagara district has started attracting many garment factories mainly due to its proximity to Bengaluru. Some of the prominent names which have already shifted some of their units to Ramanagara district are Arvind Textiles, BRS Textiles, Lotus Clothing, Fashion Forum, Madura Garments and Lagna. The district also has several textiles based SSIs, employing a little over a thousand workers. Additionally, the biggest contributor to textile and clothing sector in the district is 'sericulture', which is a major source of livelihood for over 19,000 farmers in the district.

Government

Garments: As for the garments industry is concerned, most of the training is currently provided on-the-job. In terms of training infrastructure in the district, the Department of Textiles run ATDC is present in the district. It is mostly providing training to SHGs. However, the training provided is a little dated. Thus, there is a need for the Department of Textiles to focus on strengthening both the capacity and the quality of its ATDC to include up-to-date courses, machines and faculty.

Sericulture: In the area of sericulture, Department of Sericulture is currently providing training to both farmers and reelers. A 'Sericulture Training Institute' has also come up in Chanapatna taluka. It is providing five day training programmes to rearers. It provided training to 250 rearers last year. However, based on our industry discussions, there is a need for providing training to at least 1,000 rearers per year in latest technology. Training required in latest techniques includes some of the following areas:

- Suit rearing
- Application of bio-fertilisers
- Knowledge of running multi-hand machines etc.

While the Government training institute has made a step towards meeting these industry requirements, much more needs to be done. Given that Ramanagara is the biggest sericulture centre in Karnataka, more attention is needed, especially because it is a major employment generator.

Given the competition from Chinese silk, the local industry has started to die down and the youth is moving away from it. The Department of Sericulture needs to incentivise this industry to retain youth and draft policies to bring up the quality of local silk up to the mark with Chinese silk.

Private training providers

Garments: As mentioned above, most of the training in garments industry is provided on-the-job. However, the industry is facing shortage of tailors. Therefore, there is a demand for modern style training institutes in tailoring which use modern machines to train the youth. These training institutes can collaborate with the existing and upcoming garments factories and produce dedicated manpower. This will also ensure placement guarantee for the youth.

Sericulture: The sericulture industry is a traditional industry for the district. There is a need to introduce new technologies and marketing techniques. Some of these include:

- Handling of bio-voltine cocoons
- Knowledge of running automated reeling machines
- Modern methods of silk processing
- Marketing know-how
- Uses of silk waste to generate spun silk and even for generating methane

The private training providers can provide this training by joining hands with the Silk Reelers Association in the district.

Industry

The district has scope for setting up more garment factories, due to availability of cheap labour. The up-coming units need to collaborate with local (existing and up-coming) training providers for sourcing trained manpower. This will save time for the industry in training new people and will ensure employment for people getting trained in the institutes.

6.2. Auto and auto components

As discussed in the report, auto and auto components industry in the district is currently dominated by Toyota Kirloskar and its ancillary companies. However, going forward, many more auto and auto components companies are expected to come up in the district. While for management related roles, the companies will continue to hire people from outside Ramanagara, for operator and group leader level roles, manpower can be hired from within the district as well. Thus, skilling level interventions are required for those set of people.

Government

Currently, Toyota is hiring from ITIs all over Karnataka. It is also absorbing almost the entire manpower from the Ramanagara ITI. However, given that the auto industry is expanding in the district, there are courses which are in demand and for which training infrastructure is not available. Therefore, there is a role for the Department of Employment and Training to introduce some of the following courses in its ITIs in the district:

- Power electronics and automotive
- Painter trade
- Electrical (expansion of capacity)
- MMV etc.

Private training providers

The courses mentioned for the Government can be introduced in private industrial training centres as well.

6.3. Others

- Upgradation of Government ITIs, especially in the area of tools and equipment. Also, faculty seats also need to be filled up on priority.
- Increased interactions between industry and ITIs.
- Faculty training is also required as modern technology has come up in the industry, which even the faculty is not aware of.
- Demand for CNC training and multi-media training should be addressed.

- Other courses which are in demand in the district are animation, computer training, beauticians and automation. English and communication skills must be a subject in all trades.
- Skill needs of some of the smaller sectors such as toy making (in Chanapatna), bed manufacturing, coir manufacturing and bamboo articles manufacturing etc., also needs to be met. Stri Shakti Sanghas can be mobilised for the same. PPP can be brought in for export of wooden toys.

9.26. SHIMOGA

1. Introduction

Shimoga, also known as Shivamogga, is a part of naturally rich Malnad region of Karnataka. It is bounded by the districts of Chikmagalur to the southeast, Davanagere to the east, Haveri to the northeast, Udupi to the southwest, and Uttar Kannada to the northwest.

It has a total land area of 8,477 square kilometres (sq. km.) and a population density of 207 persons per sq. km. It is sub-divided into seven sub-districts – Bhadravathi, Hosanagara, Sagara, Shimoga, Shikaripura, Soraba and Thirthahalli, and has 1,443 villages. Majority of the population at 65.2 per cent lives in rural areas. Agriculture is the main occupation, employing 61 per cent of the labour force (as of Census 2001). The remaining is in household industry (three per cent) and other workers[48] at 36 per cent.

Shimoga district is also known as the 'Rice Bowl of Karnataka'. There are four major rivers in the district - Sharavathi, Varada, Tungabhadra and Kumudavathi. Also, the Sharavathi Hydel Project and Varahi Project within Shimoga provide a substantial portion of Karnataka's power needs.

[48] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

Paddy and maize are the key crops grown. Karnataka is the largest producer of arecanut in India, majority of which is cultivated in the Shimoga district.

Over the years, Shimoga has turned into a major tourist destination with the presence of many places of historical and cultural significance, wildlife parks, dams, hill stations and most importantly Jog falls – the most famous tourist destination in Shimoga, amongst various other water falls in the district.

Table 384: Comparison of Shimoga district with Karnataka – Key indicators

Indicator	Year	Shimoga	Karnataka
Area, in sq.km.	2001	8,477	191,791
Percentage share in State geographical area, %	2001	4.4%	100%
No. of sub-districts	2011	7	175
No. of inhabited villages	2001	1,443	27,481
No. of households	2001	338,386	10,401,918
Forest area as a % of total geographical area	2001	32.7%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Shimoga district has a population of 17.6 lakh persons – 2.9 per cent of the State population. Majority of the population (27 per cent) is concentrated in Shimoga sub-district, followed by Bhadravathi sub-district at 20.6 per cent, Shikarpura sub-district at 13 per cent, Sagara sub-district at 12.2 per cent, Soraba sub-district at 11.3 per cent, Thirthahalli sub-district at 8.7 per cent and Hosanagara sub-districts at seven per cent. While 65.8 per cent of the population in the district is in working-age group (15 to 64 years), about 43.5 per cent is actually working i.e. work participation rate.

The district's literacy rate is 80.5 per cent, which is higher than the State average of 75.6 per cent as well as the All-India average of 74 per cent. Male literacy at 86.11 per cent is higher than female literacy rate at 74.9 per cent. Of the 30 districts, Shimoga ranks 5th on Gender Development Index (GDI), with a value of 0.66.

Most of the population (65.2 per cent) lives in rural areas. In fact, as mentioned earlier, agriculture is also the main occupation of the people of the district, employing 61 per cent of the labour force as either cultivators or agricultural labourers.

Table 385: Key demographic indicators

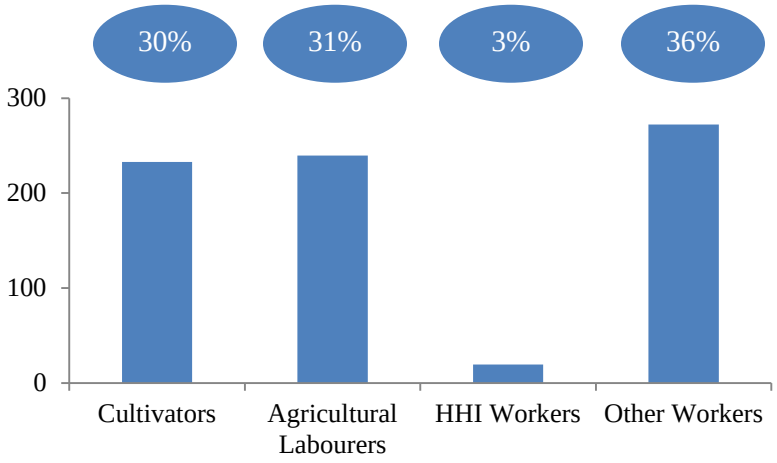
Indicator	Year	Shimoga	Karnataka
Population, No.	2011	1,755,512	61,130,704
Decadal growth rate of population, %	2001-11	6.88%	15.7%
District's share in State's population, %	2011	2.9%	100%
Urban population as a percentage of total population, %	2001	34.8%	34%
SC population, %	2001	16.4%	16.0%
ST population, %	2001	3.4%	7.0%
Sex ratio, No. of females per 1000 males	2011	995	968
Population density, per sq. km.	2011	207	319
Literacy rate, %	2011	80.5%	75.6%
Main workers, No.	2001	586,832	19,364,759
Marginal workers, No.	2001	127,839	4,170,032
Working age population* as a percentage of total population, %	2001	65.8%	63%
Work participation rate^, %	2001	43.5%	45%
HDI	2001	0.67	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 7.6 lakh persons. Of this, 30 per cent are cultivators, 31 per cent are agricultural labourers, three per cent are workers in household industry and 36 per cent are other workers.

Figure 222: Shimoga district's worker profile, as of 2011, in thousands

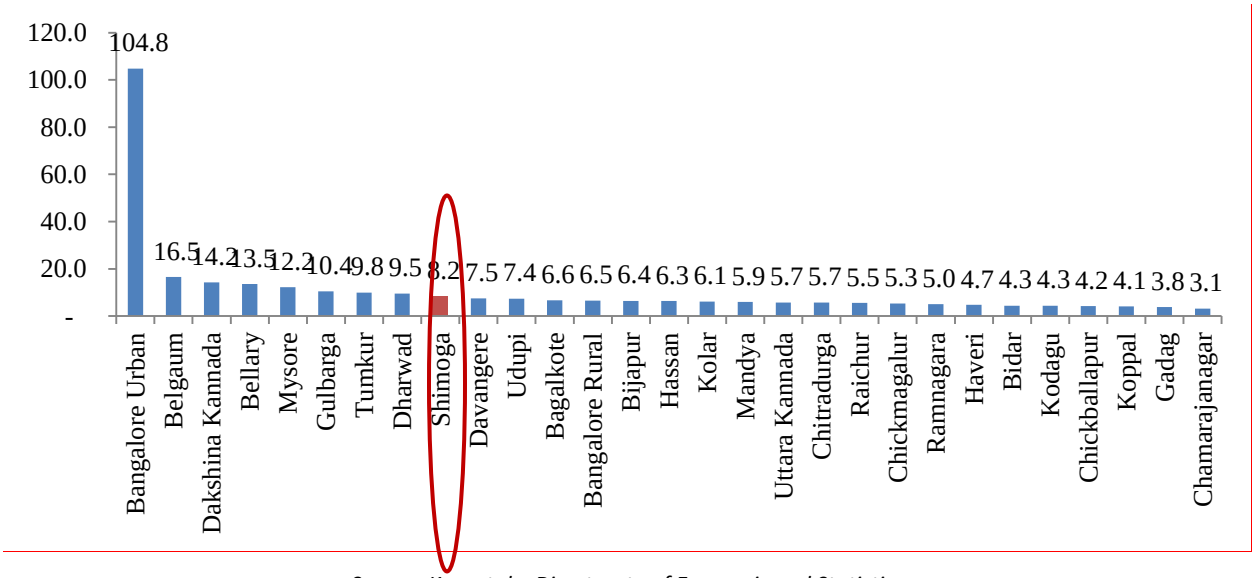


HHI: Household Industry
Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Shimoga district had the ninth largest Gross District Domestic Product (GDDP) in Karnataka at Rs 8,236.76 crore (2.7 per cent of the Gross State Domestic Product). In terms of per capita GDDP though, it ranked eighth amongst 30 districts at Rs 45,752. This was lower than the State average of Rs 53,101.

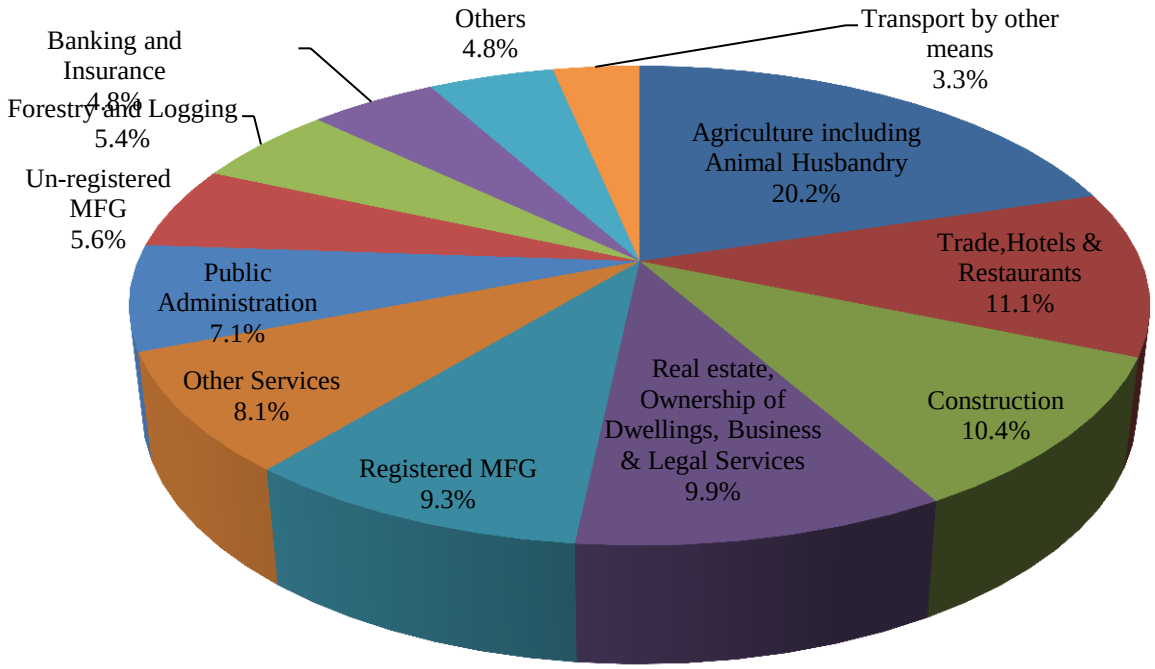
Figure 223: Gross District Domestic Product, in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 47 per cent in 2008-09. This is followed by secondary sector at 27 per cent and primary sector at 26 per cent.

Figure 224: Sector wise distribution of Shimoga's GDDP, as of 2008-09, 100% = Rs 8,236.76 crore



Source: Shimoga District At a Glance 2009-10

Agriculture: Of the total area of 8,477 sq. km. in the district, only 25.7 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of paddy and maize under food crops and arecanut under commercial crops. For details of crops grown in Shimoga district, refer to annexures.

Industry: As of 31st December 2011, Shimoga district had eight large and medium scale industrial units, employing 6,262 persons. These included several established and well-known companies like Visveswaraiah Iron and Steel Plant, Mysore Paper Mill Limited, Shantala Spherocast Private Limited, Perfect Alloy Components Private Limited etc. (Refer to annexures for complete list). End products manufactured included iron and steel products, paper, automotive parts (foundry based), milk and milk products etc.

Shimoga also has 13,389 Small Scale Industries (SSIs), employing 51,527 persons. As of March 2011, majority of these were food and intoxicant based industries at 17.6 per cent, followed by textile based industries at 13.3 per cent, wood based industries at 12.5 per cent, job works and repairs based industries at nine per cent and remaining in others. Refer to annexures for details. The district has four industrial areas, totalling 472 acres of land. For details, refer to annexures.

Shimoga district is attracting significant investments from industrial players. During the Global Investors Meet (GIM) held in 2010 in Karnataka, eight Memorandums of Understanding (MoUs) amounting to Rs 965.24 crore were signed for the district. Once set up, these are estimated to employ 12,935 persons. Of eight, currently two projects are under implementation. For detailed status of these projects, refer to annexures.

Services: The services sector includes hotels and restaurants, transport, storage, communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 46.9 per cent of GDDP in Shimoga district. Of all the services, the key services in the district are of 'trade, hotels and restaurants' at 11 per cent of GDDP, followed by 'real estate, ownership of dwellings, business and legal services' at 10 per cent, other services at eight per cent and public administration at seven per cent.

2.3. State of education

As of March 2010, Shimoga district had 2,750 schools, with 293,387 students enrolled. The drop-out rate was 1.6 per cent both for lower and higher primary schools. This is much lower than the State average of 4.6 per cent for lower primary and 8.1 per cent for higher primary schools.

There are 108 pre-university (PU) colleges with 31,515 students. There are also 36 general colleges, three medical colleges, eight 11 polytechnics (for technical education), two engineering colleges and one dental college. For details of courses offered by polytechnics, refer to annexures.

Table 386: School education infrastructure in Shimoga district, as of March 2011

	Lower Primary		Higher Primary		High	
Type	No.	Students	No.	Students	No.	Students

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Govt.	982	88,014	960	39,628	167	39,120
Aided	3	12,500	70	5,531	129	24,231
Unaided	75	47,718	238	15,516	127	21,129
Total	1,060	148,232	1,268	60,675	423	84,480

Source: District Information for School Education, Karnataka, 2011-12

Table 387: Higher education infrastructure in Shimoga district, as of March 2011

Colleges	No.	Students
PU Colleges	108	31,515
General	36	19,805
Medical	3	746
Polytechnic	8	4,343
Engineering	2	3,893
Dental	1	157

Source: Shimoga District at a Glance 2010-11

For vocational training, Shimoga district had a total of 37 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, five were Government ITIs, six were private aided ITIs and remaining 26 were private unaided ITIs. All the 37 ITIs together have a seating capacity of 4,957.

Table 388: Key ITI indicators in Shimoga district, as of March 2012

Indicator	Value
Total Number of it is	37
Number of Government ITIs	5
Number of Private aided ITIs	6
Number of Private unaided ITIs	26
Total Seating capacity	4,957
Student pass rate	85-90%
Student drop-out rate	5%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Shimoga district, we have found that on an average, of all the students that pass out from an ITI in each year, 85 per cent find jobs in the market. For details on courses offered by ITIs in Shimoga, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions. While the Government Department offer courses in trades like fish breeding and marketing, teacher education and evaluation, behavioural management, self employment training, technical health, mental health etc., the private training institutes are mainly offering courses in computer skills, nursing, teacher training and ayurveda. For details of training institutes and courses offered, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Shimoga district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- The educational infrastructure within Shimoga is very good with adequate number of colleges and other polytechnic institutes and ITIs. The first preference of all students is to avail a college based education.
- Students, who study in ITIs are generally those from relatively poor economic back ground and also who have traditionally been academically weak during schools.
- The preference amongst students both from colleges as well as other technical training institutes like ITIs is to migrate to bigger cities like Mumbai, Pune, Bengaluru for better pay and the attraction of living in a big city.
- Training institutes in Shimoga have adequate machinery and infrastructure for practical training to be made available to students.
- Amongst category of jobs, the ITI students prefer to join Government departments and Government companies over any private sector companies. While amongst college students, the preference is to join the private sector, especially the IT services sector.
- The preference amongst all students is for white collar jobs as against manual labour or jobs which require large amount of physical effort.
- Also, the ITI students want training want additional training in:-
    - English communication and soft skills
    - Higher order computer training
    - CNC machine operation

3. Developmental concerns

Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Lack of active marketing for Shimoga as a tourist destination:** The district has a lot of places of interests from the perspective of tourism. It is richly endowed with natural beauty, places of historical, cultural and religious significance, wild life parks and places of interests like Jog falls. This creates a huge potential for tourism in the district and the resultant growth of the hospitality segment. Currently tourism is a big part of the activities within the district, but with the type of tourist spots present in Shimoga and the current preference of the youth of the country for the same, there is further scope for tremendous growth and development.

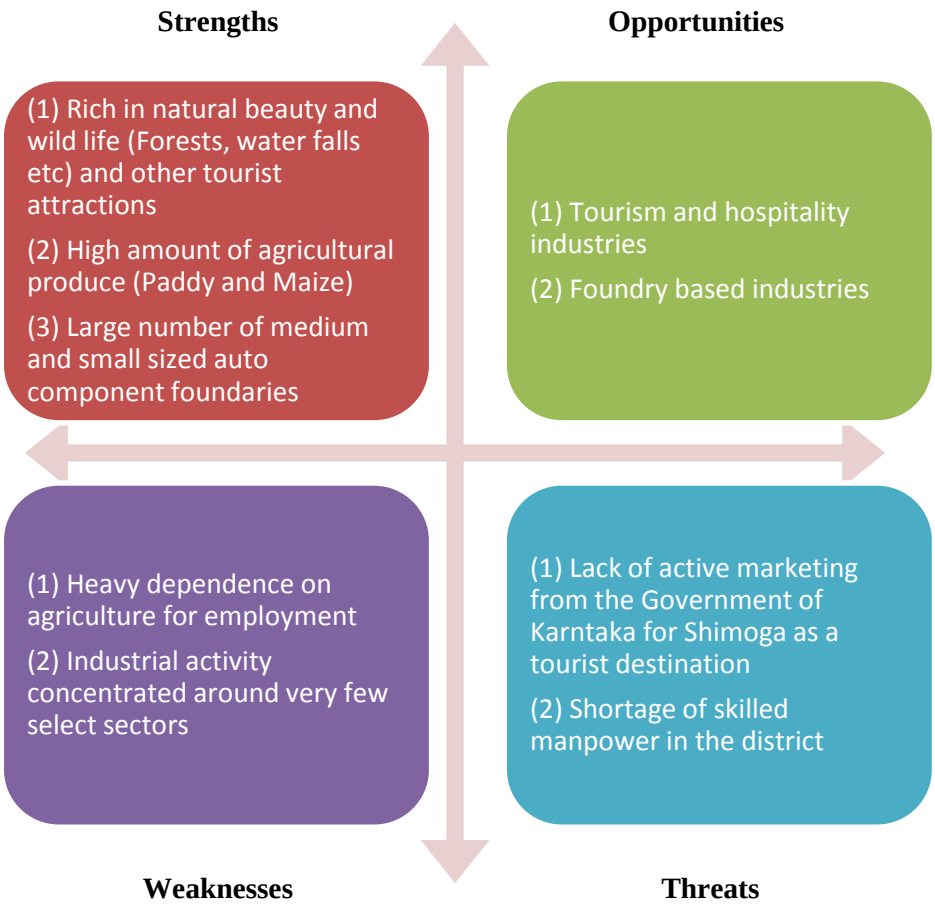
- **Lack of diversification of industries:** Shimoga district has two large industries in the respective sectors of -
    - Iron and Steel (Visveswaraiah Iron and Steel Plant) and
    - Paper mill (Mysore Paper Mill Limited),

  each of which employs about 2,000 people each both from local district as well as from all over the country with no major future hiring plans. In fact, the hiring for VISL, however little, is done centrally (as it is a part of Steel Authority of India Limited). Most of the employment in the industries segment is generated as a result of the auto component foundry companies in the district whose skill set requirements are very limited. Diversified industries would be helpful in employing people from various backgrounds and improve overall economy.

SWOT analysis

Based on the diagnostics of the Shimoga district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 225: SWOT Analysis of Shimoga district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 1.95 lakh persons is likely to be generated in Shimoga district.

Travel, tourism and hospitality has the maximum potential in the district and is likely to provide employment opportunities to many. This will be followed by agriculture and allied activities, which will continue to be one of the biggest employment providers in the district. Within agriculture and allied, thrust will be on the allied activities such as animal husbandry, dairy, poultry and horticulture. There is also scope for textiles and clothing, as the district is closer to Mysore and Bengaluru. In addition, as the

economy grows, demand for supporting infrastructure such as health and education is also expected to increase.

Table 389: Incremental demand in Shimoga – 2012 to 2022

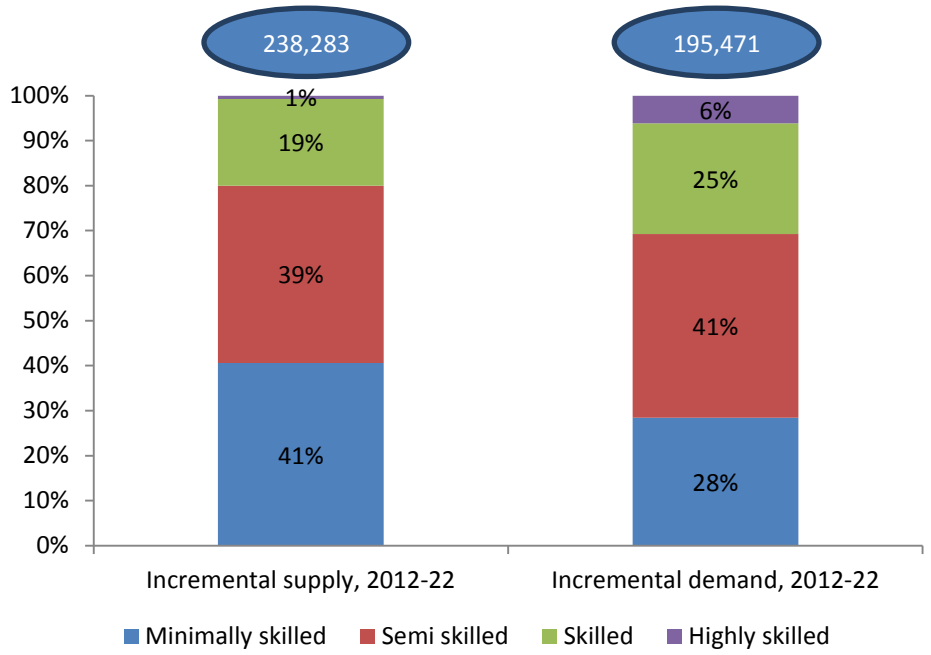
SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	52,623	43,828	6,551	1,192	1,052
Auto and Auto component	1,790	179	1,163	358	89
BFSI	8,015	-	4,809	2,404	801
Building, Construction industry and Real Estate	40,319	12,096	20,160	6,048	2,016
Construction Materials and Building Hardware	2,504	250	1,628	501	125
Education and Skill Development	11,301	-	-	10,171	1,130
Furniture and Furnishings	481	192	192	72	24
Healthcare Services	23,951	-	2,395	16,766	4,790
Textile and Clothing	1,660	332	996	249	83
Transportation, Logistics, Warehousing and Packaging	15,648	3,130	9,076	3,130	313
Tourism, Travel, Hospitality & Trade	36,944	7,389	25,122	3,694	739
Total	**195,471**	**67,448**	**72,211**	**44,636**	**11,176**

Source: IMaCS Analysis. Note: Numbers for sectors will not add up to the total due to very small numbers accounted for by sectors such as food processing and mining.

The incremental supply of work-force between 2012 and 2022 is estimated at 2.38 lakh persons. This is higher than the projected demand for workers across all categories in the district. Majority of the supply is within the 'Minimally skilled' and 'Semi-skilled' categories in the district resulting in a supply to demand gap within the district which could lead to either higher unemployment levels or force the people to move out of the district for employment.

This is coupled by a projected shortfall in the skilled and highly skilled categories as against their respective demand. This presents with an opportunity for the minimally skilled and semi-skilled people to be trained so that they can fill the gaps at the skilled and highly skilled levels.

Figure 226: Skill wise incremental demand and supply in Shimoga district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on the diagnostics and our discussions with the key stakeholders in the district, we have identified sectors which will be the employment growth engines in the district in the next five years and will have skill training requirements. While agriculture will continue to be the biggest employer, additional employment will be generated from non-agricultural sectors only.

Within non-agricultural sectors, as discussed above, Shimoga district is home to many industries. However, as per our discussions with some of the existing units, there are no significant expansion plans in the next five years, which could lead to employment creation. Additionally, the district has several rice mills which also do not have significant incremental employment generation potential or skill development needs.

Thus, in the section below, we have identified only those activities, which can become employment growth engines for the district in the next five years and where there is an opportunity for skill development / up-gradation. NSDC has conducted skill mapping studies across 19 high growth sectors earlier. Of those, only 'Auto and auto components' and 'Tourism, Travel, Hospitality and Trade' exists in

Shimoga district. In addition, agriculture and agriculture related activities will continue to remain a major employment provider. Sector comparison of Shimoga with Karnataka is given in Table 8 below.

Table 390: Sectors where interventions are required in Shimoga district – comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Shimoga	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 391: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Auto and Auto component			√
Tourism, Travel, Hospitality & Trade	√	√	√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified, we have mapped the skill requirements and the gaps faced by the sector in the section below:-

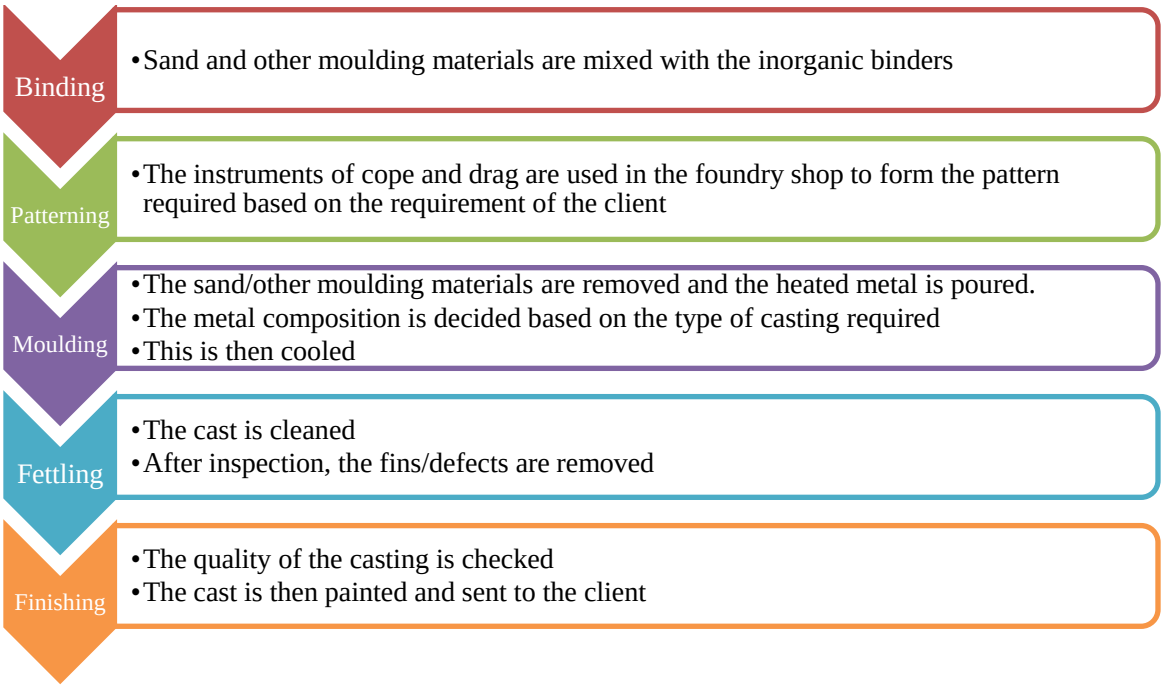
5.1. Auto and Auto Components industry – Foundry based

The district has many foundries which serve the auto and auto components space. Some of the products manufactured by such industrial units include cylinder liners, Internal Combustion engine parts, turbo machine parts, Spheroidal Graphite iron and grey iron castings, engine compressor, valves etc.

As of March 2010, Shimoga district had 909 automobile sector based SSIs, employing 4,127 workers. This apart, the sector has a lot of large and medium sized companies like Shantala Spherocast Private Limited, Perfect Alloy Components Private Limited, Vijay Technocrats Limited, Prarthana Engineering etc. During the Global Investors Meet (GIM) of 2012, an MoU was also signed between the State Government and Shanthala Spherocast to put up an additional plant within the same sector.

The foundry value chain is given in Figure 6 below.

Figure 227: Value chain in foundry industry



The skill gaps as perceived for this sector are:-

Table 392: Skill gaps in the Auto and auto components (foundry based) industry in Shimoga district

Role, educational qualification	Expected competency	Skill gaps
Managers (Management degree holders / Promoter with experience in the sector)	▪ Managing all the facilities and the functioning of the work-force. ▪ Supervising of the work conducted by operators / workers ▪ Complete knowledge of quality testing in foundry ▪ Basic knowledge of using modern machines like vertical machine centre, spectrometer, etc ▪ Ability to guide on the process of effluent treatment ▪ Highly qualified in personnel and soft skills	▪ Lack basic people management skills ▪ Lack quality management and quality testing skills
Engineers (electrical and mechanical)	▪ Complete understanding of the machinery and tools used in shop floor ▪ Shop floor management ▪ Ability to manage the workers and trouble shooting skills ▪ Knowledge of 3D modelling techniques and other relevant IT skills for the design of castings ▪ Soft skills	▪ The engineers who graduate out of colleges do not prefer to work in foundries and hence there exists a quantitative gap ▪ Lack the soft skills – in terms of report writing, documentation of faults, etc ▪ Lack of knowledge of the 3D technology
Supervisors (Diploma in electrical, mechanical)	▪ Ability to supervise activities conducted in the department for which responsibility is entrusted. ▪ Ability to train the new comers	▪ Inability to adapt to the latest technology used in shop floor ▪ Lack of knowledge of

Role, educational qualification	Expected competency	Skill gaps
	▪ Overseeing the safety of all workers ▪ Complete understanding of all safety regulations and ability to handle safety issues ▪ Knowledge of PRC systems ▪ Give the specifications to the operators and welders/fitters ▪ Record maintenance ability	safety.
Fitters (experience based), foundry men (past experienced), turners, CNC program qualified personnel	▪ Basic ability to handle the machines ▪ Understand the basic safety aspects ▪ Work on the castings to the specifications required ▪ Have the CNC degree qualification	▪ People of such skills prefer to migrate to other districts for work. ▪ Inability to adapt to the latest technology used in shop floor ▪ Less number of CNC qualified personnel

Source: IMaCS Analysis

5.2. Tourism, Travel and Hospitality

As mentioned earlier, Shimoga has many places of interests and hence has further potential to be developed as a tourist hub. Some of the most popular tourist attractions in Shimoga include:

Table 393: Major tourist spots in Shimoga district

Tourist Spot	Brief Description
Jog Falls	It is the highest water fall in India. Jog Falls is formed by Sharavathi River which falls from a height of 253 m. The falls are situated at a distance of about 100 km from the Shimoga City. The fall comes down in four different tracks all of which have been named as Raja, Roarer, Rocket and Rani. The highest of the four is the

Tourist Spot	Brief Description
	Raja which falls into 40 meter deep pool.
Agumbe	It is a hill station within Shimoga district. Agumbe attracts tourists during the summer and winter season because of its unforgettable glorious sunset. Agumbe is also known as the "Chirapunji" of South India because this place receives the highest rainfall in South India.
Kodachadri	This is the highest peak in Shimoga District. Kodachadri is around 120 kms from Shimoga this beautiful hill station is nestled in the Western Ghats. The famous Kollur is 12 Kms away from Kodachadri.
Linganmakki Dam	Linganmakki dam is about 6 Kms from Jog falls this dam is constructed across river Sharavathi. The height of the Linganmakki dam is 1819 ft above sea level. Linganmakki dam is the main feeder reservoir for the Mahatma Gandhi Hydro Electric Power unit.
Shivappa Naik Palace	This palace is situated on the banks of river tunga in the busy lanes of Shimoga city. This palace was built by Shivappa Naik of Keladi in 16th century. A good architectual piece built with rose wood. The palace is equipped with museum which has several interesting and rare archaeological collections of stone carvings and antiques of Keladi period.
Tyarekoppa Lion Safari	It is 10 Kms from Shimoga enroute to Sagar town - Lions, Tigers and other wild life animals roam around in the deep forests freely. The lion-tiger safari started way back in 1988 is a ideal picnic spot . The safari is spread around an area of 200 Hectares of dense forest. You can witness to the grace, diversity, color and marvel of nature and catch enlivening glimpses of Lions, Tigers, Cheetah, Bear, Deer, and rare migratory birds as they amble around in luxuriant habitat. Regular recreation and sight seeing outings are organised by the forest department for visitors.
Sakrebayalu Elephant Camp	On the way to Thirthahalli from Shimoga, 14 kms away is where this camp is situated.One can find here many elephants being trained by training professionals. Elephant from the adjoining forests bathe at this spot before they re-enter their forest abode.

Tourist Spot	Brief Description
Sharavathi Valley Wildlife sanctuary	The Sharavathi Valley Wildlife Sanctuary includes a large part of the Linganamakki reservoir formed by the damming of the Sharavathi River. The sanctuary covers an area of 431 sq. km Besides gaur and several groups of lion-tailed macaque, the sanctuary is home to a variety of species including tiger, leopard (black panther), wild dog, jackal, sloth bear, spotted deer, sambar, Malabar giant squirrel, giant flying squirrel etc.

Jog Falls

Sakrebayalu elephant camp

The supply chain as observed for the Tourism sector is:-

Figure 228: Tourism supply chain

The skill gaps observed in the sector include:-

Table 394: Skill gaps in the Travel, Tourism and Hospitality sector in Shimoga district

Role, educational qualification	Expected competency	Skill gaps
Front Desk Manager – Hotels (Graduate / Diploma in Hotel Management)	▪ Ability to maintain guest history and network. ▪ Facilitate smooth client check-ins and check-outs. ▪ Ability to quickly resolve any customer grievances. ▪ Effective communication and coordination skills to coordinate with other departments – Food and Beverage, Housekeeping etc. ▪ Good knowledge of the local region to guide all guests and tourists.	▪ Inadequate customer handling skills. ▪ Lack proper coordination skills. ▪ Lack of proper communication skills. ▪ Inability to handle check-in / check-out process efficiently and quickly
Restaurant Manager (Graduate / Diploma in Hotel Management with experience)	▪ Complete knowledge of the dishes served at the restaurant at various times. ▪ Basic understanding of the cooking procedures of each of the dishes. ▪ Effective communication and coordination skills to coordinate with other departments. ▪ Interacting with guests and explaining	▪ Lack people management skills. ▪ Inadequate understanding of the cooking procedures of dishes and inability to explain the same to the guests.

Role, educational qualification	Expected competency	Skill gaps
	the speciality of the cuisines. ▪ Manage the team of waiters / servers.	
Housekeeping Executive (Graduate / Diploma in Hotel Management with experience)	▪ Ability to ensure smooth functioning of the housekeeping activities while causing least / no hassles to the guests. ▪ Broad knowledge of using housekeeping equipments. ▪ Ability to groom, train and manage the housekeeping staff. ▪ Ability to resolve any issues pertaining to guests quickly. ▪ Good communication skills.	▪ Lack people management skills. ▪ Inability to groom and train the housekeeping staff. ▪ Lack communication skills.
Tour operators / guides (illiterate to 10th pass, trained by Tourism department)	▪ Route planning and optimisation ▪ Ability to liaison with airline, hotels and local community ▪ Route optimisation skills ▪ Ability to manage tourist expectations ▪ Customer Relationship Management ▪ Soft skills ▪ Understanding of local and English speaking skills	▪ The district is in need of a large number of professionally trained guides. ▪ Lacks knowledge of travel tools like route optimisation. ▪ Lack of soft skills ▪ Inability to communicate in English or Hindi.

Source: IMaCS Analysis

6. Recommendations

Recommendations for Shimoga mainly focus on two segments which we believe will be the main drivers of growth employment in the coming five year period:-

1. Auto and auto components (foundry based) industries
2. Travel, tourism and hospitality industry

3. Agriculture

The recommendations focus on three aspects- firstly to identify areas of skill gaps which need to be addressed through implementation of training programs from the end of both Government and private players within the district for each of the sectors. Secondly, to recognise and suggest structural measures to be undertaken by the Government in order to facilitate development of the sectors. And finally identify opportunities or problem areas for each of the respective industries.

One particular aspect that also needs to be looked at is the preference of the skilled youth to move to bigger cities like Mumbai, Pune, Bengaluru etc. This impacts various skill sets requirements like those of electrician, fitter, machinist etc. It is therefore important to look at increasing the capacity at various ITIs for such trades in order to meet the local industries' demand.

A summary of all recommendations has been collated in the below table followed by detailed recommendations for each of the above mentioned sectors:-

Table 395: Summary of Recommendations made for Shimoga district

Sector	Recommendations to the Government	Recommendations to the private sector / NSDC	Recommendations to the Industry
Agriculture and Allied	▪ Most of the farmers have small and marginal land holdings. Provide better forms of accessibility to farm equipment and seeds. ▪ Help provide better market linkages through education about current ones and provides support on the logistics and warehousing facilities	NA	NA
Auto and Auto components (Foundry	▪ Create a foundation cluster in lines similar to	– Provide short term courses in:-	– Coordinate with the State Government and

Sector	Recommendations to the Government	Recommendations to the private sector / NSDC	Recommendations to the Industry
based)	the one existing in Belgaum	– Foundry technology – Metal casting practices – Safety hazards in foundries etc.	Foundry Sector Skill council to help establish a foundry cluster – Facilitate further upskilling of employees.
Travel, Tourism and Hospitality	Recommendations to the Department of Tourism:- ▪ Create and implement district specific marketing program. ▪ Create packages depending on the variety of tourist spot to attract specific crowds ▪ Provide training and certification to tourist guides and operators	– Provide training in hospitality segment courses like:- – Front office management – Housekeeping management – Food Production etc.	– Setup Hotels and Resorts in the district. ▪ Create infrastructure for adventure sports – Create awareness about the tourist spots in the district. – Tie-up with private training providers to avail skilled man-power.

6.1. Agriculture and Allied activities

Shimoga is essentially an agrarian district employing more than 60 per cent of its work force. It is well endowed with fertile soil and rivers and dams which form the basis of its irrigation making the region highly conducive for agriculture. Shimoga district is also known as the 'Rice Bowl of Karnataka' - paddy and maize are the key crops grown. Also, as mentioned before Karnataka is the largest producer of arecanut in India, majority of which is cultivated in the Shimoga district.

While the district enjoys certain natural benefits which makes it such an agriculture haven, focus must be on improving the overall infrastructure and facilities made available to farmers so as to better their crop production and also provide better market linkages.

Government

The Karnataka State Department of Agriculture (KSDA) must endeavour to use the leverage on the advantages already available to the district within the agriculture domain and help provide inputs to farmers to improve on their crop production:-

- Provide infrastructure support in terms of better variety of seeds (hybrid or otherwise), machine support in the form of tractors, mowers, chaff cutters etc. either through easy financing or leasing options or even in the form of a creating a cooperative through which farmers can make use of such facilities. This is very essential for Shimoga as more than 83 per cent of the land holdings belong to the marginal (<1Ha) and small (1-2Ha) categories. These farmers do not have sufficient access to modern day equipment as well as good quality seeds to improve upon their production.

- Since most of the farmers have very small land holdings and a resultant small level of production on each individual level, they do not have a direct access to the various farmer market initiatives of the government and hence end up selling their stock to middle men and lose out on a lot of margin, which they could have made if they directly got in touch with the consumers themselves. Thus, there is a need from the KSDA's end to ensure that the farmers are educated about the benefits of using the farmers market to sell their produce and also parallel provide logistics and warehousing support for the same.

6.2. Auto and auto components - Foundry

Various foundry based industries which makes parts used by automobile and other auto component manufacturers have blossomed within the district over the years. Starting small these companies have grown in size and employ a sizeable chunk of people within the manufacturing domain. It is therefore very important to nurture and promote their growth even further by providing necessary support infrastructure and by ensuring availability of the right kind and quality of man power form within the district:-

Government

The need from the Government's end is to play the role of facilitator within this segment in order to boost further growth. One option which could be looked at is to implement foundry cluster within the district in lines similar to the one existing in Belgaum. Belgaum is seen as a leader in the foundry industrial sector with more than 140 foundries in the district producing more than one lakh tonnes of casting per annum. The advantages of having a foundry cluster include:-

- Development of infrastructure to boost production,
- Build capability in human resource and technology,
- Conduct studies which will help in improving the production processes in the industry,
- Encourage entrepreneurship (smaller players will get requisite support to grow),
- Conduct joint marketing activities etc.

Having such type of support will indeed strengthen the sector and help in its growth aspirations.

Private players

There are tremendous opportunities for the private players in terms of implementing training programs for this sector. The need here is to focus on short term technical certifications, tailor made for the job roles/ skill sets required in this sector. Some areas to focus on are:-

- Foundry technology
- Basic techniques of core making and moulding
- Casting design using 3D modelling
- Basic casting defects and how to prevent them
- Analysis & Reduction of Casting Defects
- Metal casting practices
- Safety hazards in foundries etc.

Industry

The need of the hour for this sector is to strengthen them further technologically in order to compete and grow further as they have in the past. Like Belgaum the district has become the breeding ground for many foundry based industries which through solid entrepreneurship practices have grown in size tremendously in the last decade. The recommendations for the industry are thus as follows:-

- Create, with the help of the State Government as well as the Foundry Sector Skill Council setup through NSDC, a foundry cluster within the district. This will in turn aide further growth of entrepreneurs in the sector as well as help in improving the overall efficiency at the production level.
- Tie-up with private training partners to train their employees on the sector specific and job role specific aspects including foundry technology, 3D modelling for casting design etc. in order to improve the overall quality of manpower.

6.3. Travel, Tourism and Hospitality

Shimoga has tremendous potential to become one of the most favoured tourist destinations within the state. It has a variety of places of interest which if developed and marketed properly could set the stage for the next burst of growth. Correspondingly it is also important to make available the requisite skilled human resource for the sector:-

Government

Following are the recommendations for the Department of Tourism in order to develop and promote the tourism sector within the district:-

- Create specific and dynamic marketing programs highlighting the various places of interest within the district. It is also equally important to find the right channels through which to push such advertisements to the end customers.
- Develop packages which combine the variety of tourist spots in order to attract specific crowds interested in those activities / places like:-
  - Wild life safaris
  - Tour of the temples
  - Nature trails into the valleys
  - Water-falls and Dams
- Create more tourist cab drivers through initiatives like financing on the purchase of cabs. This is very important as the tourist spots within the district at a considerable distance to each other.

Also, from the training perspective it is very important to create more number of skilled people as well as certify them in two specific job roles:-

- Tourist guides: These people need specific training in:-
  - Knowledge of the significance of each of the places they operate in.
  - Effective communication skills with proficiency in English and Hindi languages
- Tourist Operators: These people need specific training in:-
  - Ability to converse in English and Hindi languages
  - Route planning and optimisation
  - Ability to liaison with airline, hotels and local community

Private players

The growth in tourism within the district will further fuel the growth in the hospitality segment as the need for more good quality hotels and restaurants increases in the district. This presents the private players with a huge opportunity to provide training and up-skilling courses in the sector. While on one hand there will be a need to setup colleges which provide full time degrees in hospitality management, the immediate prospects arise from short duration intensive courses in the subject areas like :-

- Front office management
- Housekeeping management
- Food Production
- Accommodation Operations
- Sales and Marketing
- Hotel Accounting and Controls
- Communication skills etc.

Industry

As mentioned above, Shimoga provides a unique opportunity for the tourism and hospitality sector with a variety of tourist spots and a potential to become one of the most favoured tourist locations within the state. Thus from the perspective of industry, there is an immense potential within the hospitality segment by making investments in setting up hotels and resorts for promotion of tourism. The recommendations for the industry players include:

- Invest into setting up hotels and resorts within the district and also look to collaborate with the Department of Tourism for the same.
- Create awareness about the various tourist spots and activities within the district through co-branding exercises with the Department of Tourism.
- Develop adventure sport spots especially along the western ghat sections which have provided similar opportunities elsewhere in Maharashtra as well as other districts in Karnataka.
- Create tie-ups with private training providers while also ensuring employment for the people trained or in the form of taking interns from the training institutes and giving them practical training as required.

9.27. TUMKUR

1. Introduction

Tumkur was formed as a separate district in the year 1997. It has a total land area of 10,597 sq. km., which is 5.5 per cent of the total State area. It is bordered on north by the Anantpur district of Andhra Pradesh, on the east by the districts of Kolar and Bangalore, on the south by Mandya district and on the west and north-west by the districts of Hassan and Chitradurga.

It is sub-divided into 10 sub-districts and has 2,574 villages. Majority of the population at 80.4 per cent lives in rural areas. Agriculture is the main occupation, employing 70 per cent of the labour force (as of Census 2001). The remaining is in household industry (five per cent) and other workers[49] at 25 per cent.

Paddy and ragi are the key crops grown. Coconut is also grown in plenty, especially in the Tiptur sub-district, which is also known as the 'coconut bowl of Karnataka'. This has led to setting up of many coconut based industries in the district. The district is also well endowed with considerable mineral wealth. Key mineral reserves include iron ore, limestone, granite, dolomite, manganese and soapstone. However, according to a Supreme Court order, mining of iron ore was banned in the district in 2011. The ban is yet to be up-lifted.

[49] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

The district benefits from its proximity to Bangalore. While many youth from the district move to Bangalore in search of better job opportunities, a few industries have also established themselves in Tumkur due to proximity to the State capital and also the international airport.

Table 396: Comparison of Tumkur district with Karnataka – key indicators

Indicator	Year	Tumkur	Karnataka
Area, in sq.km.	2001	10,597	191,791
Percentage share in State geographical area, %	2001	5.5%	100%
No. of sub-districts	2011	10	175
No. of inhabited villages	2001	2,574	27,481
No. of households	2001	550,473	10,401,918
Forest area as a % of total geographical area	2001	4.9%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Tumkur district has a population of 26.8 lakh persons - 4.4 per cent of the State population. Majority of the population (20 per cent) is concentrated in Tumkur sub-district, followed by Sira sub-district at 12 per cent and Madhugiri, Pavagada and Gubbi sub-districts at 10 per cent each. While 65 per cent of the population in the district is in working-age group (15 to 64 years), about 51 per cent is actually working i.e. work participation rate.

The district's literacy rate is 74.3 per cent, which is slightly lower than the State average of 75.6 per cent, but close to All-India average of 74 per cent. Male literacy at 82.05 per cent is significantly higher than female literacy rate at 66.45 per cent. Of the 30 districts, Tumkur ranks 10th on Gender Development Index (GDI), with a value of 0.528.

Most of the population (80.4 per cent) lives in rural areas. In fact, as mentioned earlier, agriculture is also the main occupation of the people of the district, employing 70 per cent of the labour force as either cultivators or agricultural labourers.

Table 397: Key demographic indicators

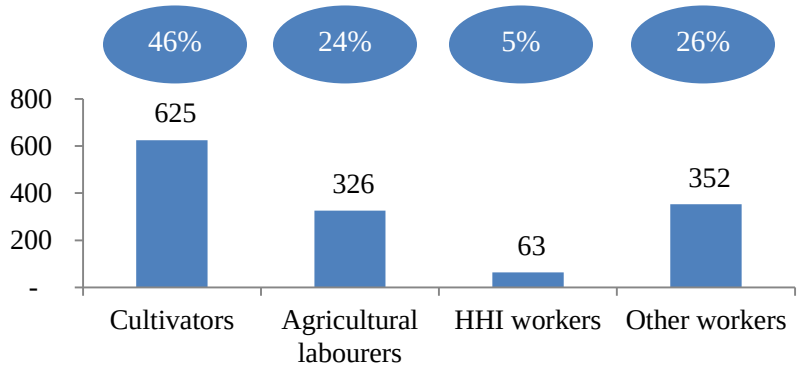
Indicator	Year	Tumkur	Karnataka
Population, No.	2011	2,681,449	61,130,704
Decadal growth rate of population, %	2001-11	3.7%	15.7%
District's share in State's population, %	2011	4.4%	100%
Urban population as a percentage of total population, %	2001	19.6%	34%
SC population, %	2001	18.3%	16.0%
ST population, %	2001	7.5%	7.0%
Sex ratio, No. of females per 1000 males	2011	979	968
Population density, per sq. km.	2011	253	319
Literacy rate, %	2011	74.3%	75.6%
Main workers, No.	2001	1,050,291	19,364,759
Marginal workers, No.	2001	266,648	4,170,032
Working age population* as a percentage of total population, %	2001	65%	63%
Work participation rate^, %	2001	51%	45%
HDI	2001	0.63	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 13.6 lakh persons. Of this, 46 per cent are cultivators, 24 per cent are agricultural labourers, five per cent are workers in household industry and 26 per cent are other workers.

Figure 229: Tumkur district's worker profile, as of 2011, in thousands



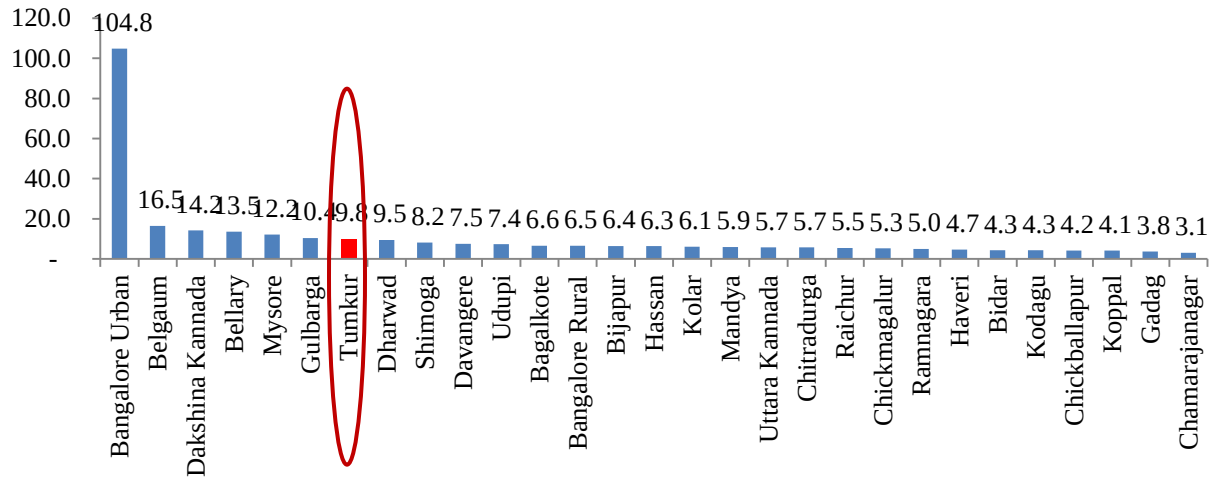
HHI: Household Industry

Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Tumkur district had the seventh largest Gross District Domestic Product (GDDP) in Karnataka at Rs 9,837.64 crore (3.2 per cent of the Gross State Domestic Product). In terms of per capita GDDP though, it ranked 18th amongst 30 districts at Rs 34,725. This was lower than the State average of Rs 53,101.

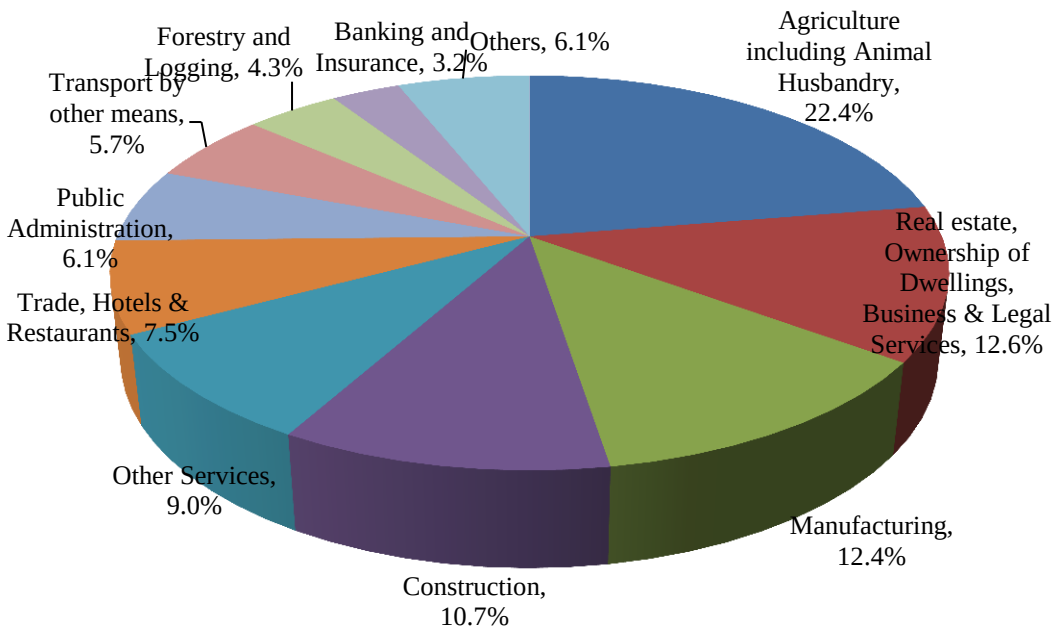
Figure 230: Gross District Domestic Product, in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 46 per cent in 2008-09. This is followed by primary sector at 28 per cent and secondary sector at 26 per cent.

Figure 231: Sector wise distribution of Tumkur's GDDP, as of 2008-09, 100% = Rs 9,837.64 crore



Source: Tumkur District At a Glance 2009-10

Agriculture: Of the total area of 10,597 sq. km. in the district, over 58 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of ragi and paddy under food crops and coconut under commercial crops. For details of crops grown in Tumkur district, refer to annexures.

Industry: As of 31st December 2011, Tumkur district had 31 large and medium scale industrial units, employing 6,958 persons. These included seven Multi-National Companies (MNCs) including companies such as Wienerberger Brick Industry Pvt. Ltd., Mann & Hummel Filter Pvt. Ltd. and Kern Liebers Pvt. Ltd. (Refer to annexures for complete list). End products manufactured included cement, industrial filters, auto mobile filters, electrical motors, gherkins, granite tiles and slabs etc.

Tumkur also has 22,857 Small Scale Industries (SSIs), employing 127,297 persons. As of March 2010, majority of these were textile based industries at 20.5 per cent, followed by wood based industries at 15.3 per cent, food and intoxicant based industries at 10.9 per cent, job works and repairs based industries at 10 per cent and remaining in others. Refer to annexures for details.

The district has seven industrial areas, totalling 1,632.06 acres of land. Of this, 895 acres of land has been allotted so far. Four more industrial areas totalling 303.39 acres are in different stages of development. For details, refer to annexures.

Tumkur district is attracting significant investments from industrial players. During the Global Investors Meet (GIM) held in 2010 in Karnataka, eight Memorandums of Understanding (MoUs) amounting to Rs 2,356.50 crore were signed for the district. Once set up, these are estimated to employ 33,984 persons. Of eight, currently two projects are under implementation. For detailed status of these projects, refer to annexures.

Karnataka held its second GIM in June 2012. During this event, 23 MoUs / Expressions of Interest / Registrations of Interest happened for Tumkur district alone. These have a proposed investment of Rs. 7,597 crore. These are expected to provide direct employment to over 9,200 persons. The interests have been signed for projects in several sectors including agro, food and horticulture; automobiles, cement and other minerals, energy, textiles and apparels, and hotels. For details of these projects, refer to annexures.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 46 per cent of GDDP in Tumkur district. Of all the services, the key services in the district are of 'real estate, ownership of dwellings, business and legal services' at 12.6 per cent of GDDP, followed by other services at 9 per cent and trade, hotels and restaurants at 7.5 per cent.

2.3. State of education

As of March 2010, Tumkur district had 4,670 schools, with 435,607 students enrolled. The drop-out rate was four per cent both for lower and higher primary schools. This is lower than the State average of 4.6 per cent for lower primary and 8.1 per cent for higher primary schools.

There are 199 pre-university (PU) colleges with 29,321 students. There are also 59 general colleges, one medical college, nine colleges offering post-graduate courses, 11 polytechnics (for technical education),

seven engineering colleges and one dental college. For details of courses offered by polytechnics, refer to annexures.

Table 398: School education infrastructure in Tumkur district, as of March 2010

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Govt.	2,236	97,971	1,365	118,272	234	45,044
Aided	5	1,805	52	14,670	298	66,884
Unaided	108	18,126	230	55,327	142	17,508
Total	2,349	117,902	1,647	188,269	674	129,436

Source: Tumkur District At a Glance 2009-10

Table 399: Higher education infrastructure in Tumkur district, as of March 2010

Colleges	No.	Students
PU Colleges	199	29,321
General	59	11,643
Medical	1	130
P.G. Courses	9	992
Polytechnic	11	2,963
Engineering	7	12,446
Dental	1	177

Source: Tumkur District At a Glance 2009-10

For vocational training, Tumkur district had a total of 65 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, eight were Government ITIs, 11 were private aided ITIs and remaining 46 were private unaided ITIs. All the 65 ITIs together have a seating capacity of 6,495. As of March 2012, student enrollment totaled 6,393. Of this, 5,598 were males and 795 were females.

Table 400: Key ITI indicators in Tumkur district, as of March 2012

Indicator	Value
Total Number of ITIs	65
Number of Government ITIs	8
Number of Private aided ITIs	11
Number of Private unaided ITIs	46
Total Seating capacity	6,497
Total student enrollment	6,393

Indicator	Value
Student pass rate	80-85%
Student drop-out rate	5%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Tumkur district, we have found that on an average, of all the students that pass out from an ITI in each year, 75 per cent find jobs in the market. For details on courses offered by ITIs in Tumkur, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions. The Government Departments offer courses in trades such as machinist, tool room training, CNC, apparel manufacturing, vocational training, poultry farming, dairy, fish culture, fish harvesting, fish breeding, motor driving, computers etc.

The private training institutes are offering courses in teacher's training, nursing, physiotherapy, computers, Ayurveda and pharmacy. For details of courses offered by private training institutes in Tumkur district, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Tumkur district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- Students from good colleges are able to get jobs in Bangalore and prefer getting placed in Bangalore only. Lure of city life and better lifestyle is high.
- Students, who are not able to get admissions in good colleges, prefer ITIs. The latter are also preferred because ITI certification helps in obtaining Government and even private jobs. The low fee is an added advantage.
- Training institutes in Tumkur lack sophisticated machinery and infrastructure for training. Practical exposure is lacking.
- Quality of courses and teachers is average. Quality of infrastructure is below average.
- First preference is to work within Tumkur district only. However, better salaries offered in Bangalore are incentive enough to migrate.

- Prefer to remain unemployed rather than joining jobs with lower salaries.
- Preference for white collar jobs as compared to blue collar and manual jobs.
- Even though industry has demand for welders, fitters, electricians etc., don't want to join such courses as good quality training infrastructure and equipment is not available in the district for that.

3. Developmental concerns

Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Ban on mining:** The district is rich in mineral resources, mainly iron ore. This has the potential to lead to establishment of downstream steel based industries. However, in 2011, the Supreme Court imposed a ban on mining in many districts of Karnataka, including Tumkur, due to large scale environmental degradation in these areas. Further, in March 2012, the Supreme Court appointed Central Empowered Committee (CEC) recommended a 10 year prohibition in mining operations in Tumkur due to illegal extraction of natural resources. Mining is not expected be allowed till the time all affected areas (especially Chiknayakanhalli taluk) are properly rehabilitated, which could take up to 10 years or more.
- **Shortage of skilled manpower within the district:** The district has many educational institutions providing education and training to the locals. However, locals, especially youth are more prone to moving to Bangalore for better job opportunities, due to the lure of better city life along with higher compensation packages and standard of living. This has created a shortage of skilled manpower within the district. The district has attracted investments from big domestic and international players. However, they face the challenge of not just finding people locally, but also attracting people from outside to come and reside in Tumkur for jobs. Bangalore is the preferred destination for all highly skilled professionals.
- **Dying small scale local industries:** The district is rich in coconut production. Based on this, many coconuts based industries exist in the district. However, some of the them such as coir based mats / rugs industry, which are small scale in size have started to suffer due to competition from better looking and durable mats / rugs made from synthetic materials. The industry is dying due to lack of technological advances.

SWOT analysis

Based on the diagnostics of the Tumkur district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 232: SWOT Analysis of Tumkur district

4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. In addition, we have identified mining for the district of Tumkur. We estimate that between 2012 and 2022, an incremental demand for 3.19 lakh persons is likely to be generated in Tumkur district. Agriculture and allied activities are expected to remain the biggest employers. However, within that, workforce is expected to gradually come down in agriculture and increase in allied activities

such as animal husbandry, dairy, poultry and horticulture (mainly coconut in Tumkur). As the economy grows, employment demand in supporting sectors such as construction, transportation, healthcare and education is also expected to increase at a faster rate. However, sectors which are unique to Tumkur and where skill up-gradation will be required within Tumkur are textile and clothing and limestone mining.

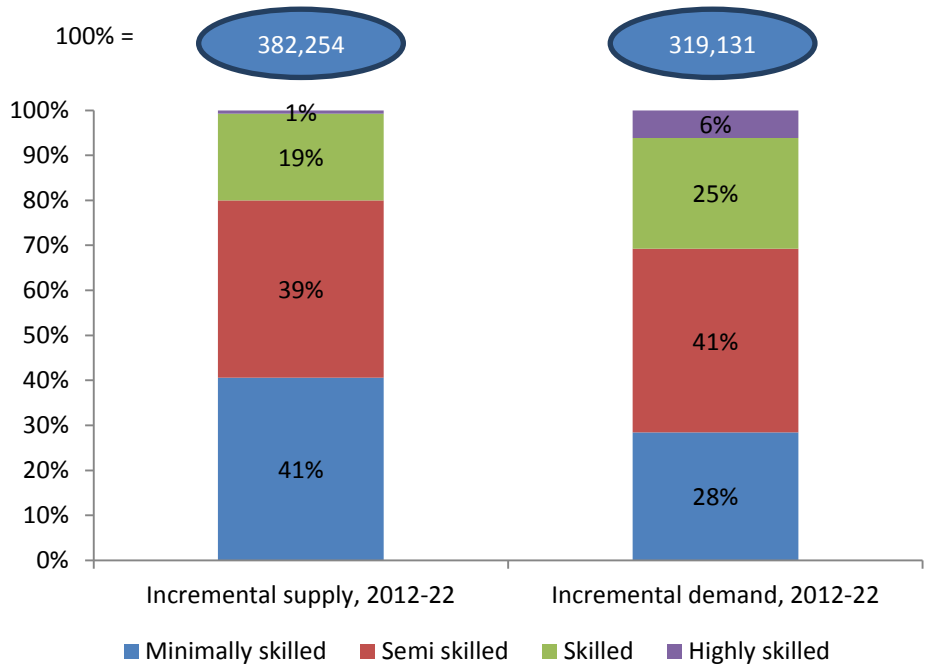
Table 401: Incremental demand in Tumkur – 2012 to 2022

SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	109,121	90,883	13,584	2,472	2,182
Auto and Auto component	295	29	192	59	15
BFSI	8,701	-	5,220	2,610	870
Building, Construction industry and Real Estate	49,381	14,814	24,690	7,407	2,469
Chemicals & Pharmaceuticals	518	104	156	156	104
Construction Materials and Building Hardware	3,067	307	1,993	613	153
Education and Skill Development	14,727	-	-	13,254	1,473
Electronics and IT hardware	762	76	381	267	38
Food Processing	3,333	1,000	1,000	1,000	333
Furniture and Furnishings	479	192	192	72	24
Healthcare Services	24,050	-	2,405	16,835	4,810
Textile and Clothing	7,953	1,591	4,772	1,193	398
Transportation, Logistics, Warehousing and Packaging	24,228	4,846	14,052	4,846	485
Tourism, Travel, Hospitality & Trade	70,204	14,041	47,739	7,020	1,404
Unorganised	2,029	406	1,177	406	41
Mining	283	57	170	28	28
Total	**319,131**	**128,344**	**117,723**	**58,237**	**14,827**

Source: IMaCS Analysis

The incremental supply of work-force between 2012 and 2022 is estimated at 3.82 lakh. This is slightly higher than the demand, indicating that some of the workforce available in the district will not be absorbed within the district alone. People with continue to move to Bengaluru, where demand is higher. Also, demand for highly skilled people is estimated to be more than the supply going forward.

Figure 233: Skill wise incremental demand and supply in Tumkur district – 2012 to 2017



Source: IMaCS Analysis

5. Skill mapping

Based on our field surveys in Tumkur district, we have found out that sectors where skilling interventions are required are mainly agriculture and allied, textiles and clothing, mining and coconut based industry. While new jobs are likely to be generated in agriculture allied sector, textile and clothing and mining; interventions in coconut sector are mainly from the skill up-gradation perspective. In addition, the district also has other manufacturing and engineering industries, which do not have significant employment generation potential, but are facing shortage of skilled manpower for functional skills such as plumbing, electrical, welding, metallurgy etc.

Table 402: Sectors where interventions are required in Tumkur– comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Tumkur	Karnataka
Agriculture and allied		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		

High Growth Sectors identified by NSDC	Tumkur	Karnataka
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		
Additional sectors	**Tumkur**	**Karnataka**
Mining		
Coconut based industries (coir, pith, desiccated coconut etc.)		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 403: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Textiles and clothing industry		√	√
Limestone mining	√		√
Coconut based industries		√	√
Others (Manufacturing, engineering etc.)			√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Textiles and clothing industry

As of March 2010, Tumkur district had 4,423 textiles based SSIs, employing 19,663 workers. This was the highest number of units and employment under any category in SSIs in Tumkur. During the Global Investors Meet (GIM) of 2010, an MoU was also signed between Government and G.M. Textiles and Apparel Infra Park Pvt. Ltd. to set up an integrated textile and apparel infrastructure park in the district in Koratagere taluk. The park which will be set up at an investment of Rs 258 crore is expected to provide employment to 30,000 people in the district. As of 2011, work is under the planning stages.

In the last two to three years, many garment based industries have moved some of their factories from Bangalore to Tumkur, due to low cost of production and availability of cheap labour. In most cases, companies are shifting only part of their operations to smaller towns, whereas the final finishing, packaging and marketing is still being undertaken in Bangalore.

Workers in a garment factory in Tumkur

Figure 24 given below explains the value chain of the textile and clothing industry. Of the entire value chain, only the circled part (garments) exists in Tumkur district. Within the garments industry, the value chain followed in Tumkur district is given in Figure 7 below.

Figure 234: Value chain in textiles and clothing industry

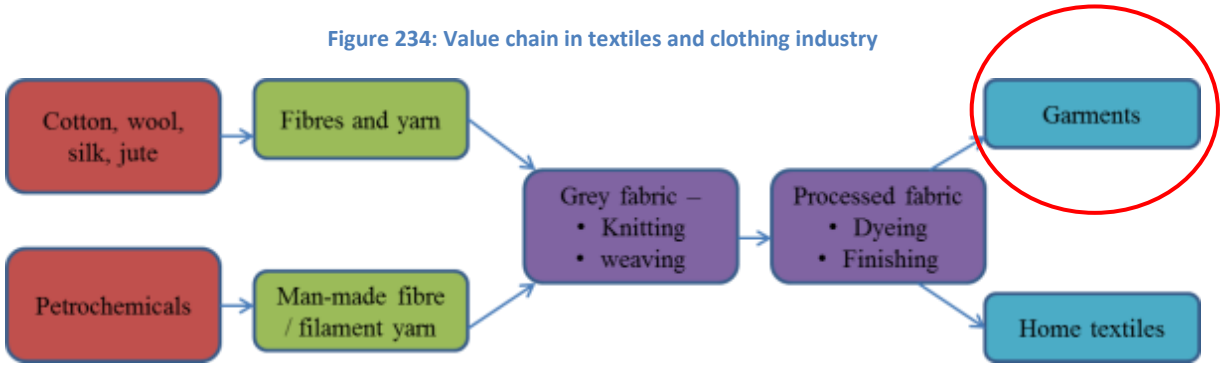


Figure 235: Value chain in garments industry – present in Tumkur district

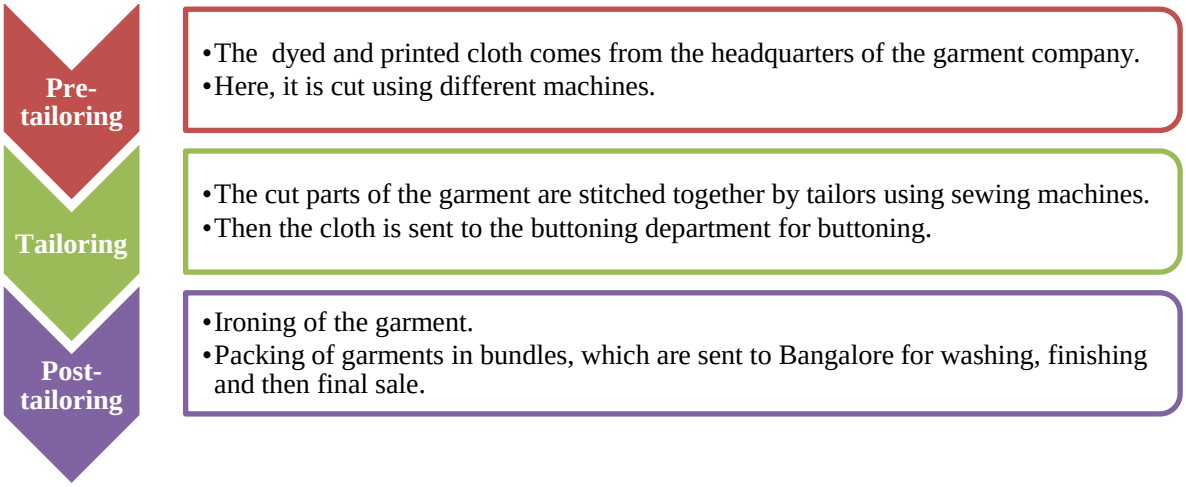


Table 404: Skill gaps in textiles and apparel in Tumkur district

Role, educational qualification	Expected competency	Skill gaps
Manager / supervisor / floor in-charge (Graduate)	▪ Managing all the facilities and the functioning of the work-force. ▪ Supervising of the work conducted by operators / tailors and conducting quality checks.	▪ Most of the managerial / supervisory staff is hired from Bangalore, as people with such skills are in scarcity in Tumkur district. Those who are

Role, educational qualification	Expected competency	Skill gaps
	▪ Knowledge of pattern making. ▪ Ability to undertake inspection, production planning and control. ▪ In-depth knowledge of production processes and inspection methods. ▪ Leadership skills ▪ Soft skills and interpersonal skills	educated with these skills in the district prefer to move to Bangalore in search of better jobs.
Operators / tailors (illiterate to 10th pass, trained in tailoring from NGOs or training provided by Department of Textiles)	▪ Tailors are classified into five categories based on their skill level. Higher skills mainly obtained from experience in the industry. ▪ Proficiency in tailoring / stitching is required for stitching garments with different specifications. ▪ Good machine control – knowledge of threading of sewing machine, stitching on different shapes, seaming garment components together in various fabrics to specified quality standard ▪ Knowledge of machine maintenance procedures ▪ Knowledge of pattern making, grading and draping ▪ Ability to understand instructions properly and stitch the garments based on them. ▪ Ability to work in teams / inter-personal skills.	▪ On the job training provided for one week, on joining of job to explain requirements and basic skill-up gradation. ▪ Even those who are trained before the job have to be re-trained, especially on running of machines, as the training institutes do not have good machine infrastructure.

Role, educational qualification	Expected competency	Skill gaps
	▪ Soft skills	
Quality control executive (Graduate and with some experience in garment industry)	▪ Ability to inspect if the garments have been stitched as per given specifications and instructions ▪ Ability to check for quality adherence ▪ Ability to understand and prevent defects like size variations, loose threads, stains etc.	▪ On-the job training provided as such skills are lacking in persons trained at training institutes and usually come from experience only.
Helpers (illiterate to 10th pass)	▪ Ability to cut the cloth based on specifications. ▪ Ability to button the stitched garments. ▪ Ability to put labels on the stitched garments. ▪ Ability to iron the ready garments properly. ▪ Ability to iron the garments ▪ Ability to pack the garments in bundles	▪ Basic skills required for this profile, for which no / minimal training required. Mostly provided easily on the job.

Source: IMaCS Analysis

5.2. Coconut based industries

Coconuts are grown in abundance in the district. As of 2008-09, area covered under coconut production in the district was 668 hectares and total coconut production was 2,848 tonnes. The Tiptur taluk is also known as the 'coconut bowl of Karnataka'.

Based on the availability of this raw material, many coconut based industries have come up in Tiptur and even the adjoining Gubbi taluk. Some of these are as follows:

- **Coir based units:** These are mainly engaged in making coir rugs and mats. These are SSIs and most of their products are either sold locally or outside Tumkur through Karnataka State Coir Development Corporation.
- **Pith compost units:** There is also presence of units, which use coconut pith to make compost and sell it as cocopeat / biopeat both within and outside Tumkur. Coir pith is a waste product obtained during the extraction of coir fibre from husk is very light, highly compressible and highly hygroscopic. It is used as a soil conditioner, surface mulch/ rooting medium and desiccant. Composted coir pith is excellent organic manure for indoor plants as well as for horticulture crops.
- **Coir board units:** Based on both coir and pith, there are also a few units which mix these two to make coir boards, which are used as table tops or even doors.
- **Desiccated coconut industry:** There is also presence of coconut desiccated units, which produce desiccated coconut for sale all over India and even outside India to countries like Pakistan, Afghanistan and Brazil. Tiptur has about 45 such units. Each of them employees about 20-40 persons each.

Mats made of coir

Coconut desiccation process

Figure below gives the value chain of the coconut based industries present in Tumkur district.

Figure 236: Value chain in coconut based industries in Tumkur district

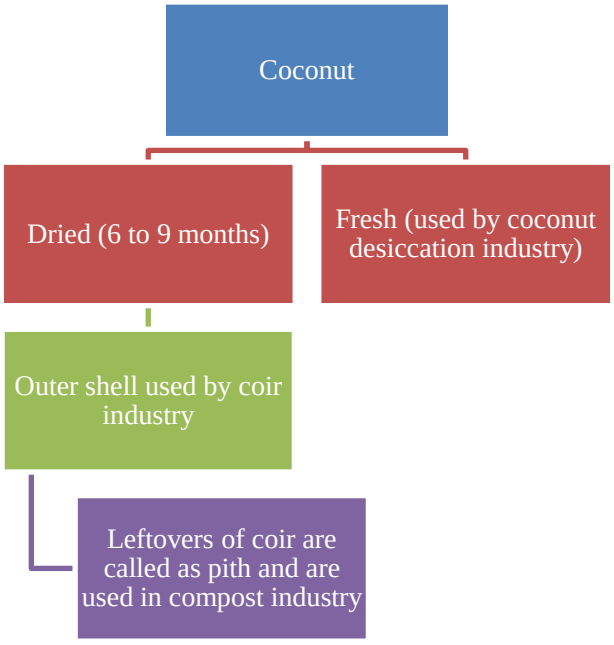


Table 405: Skill gaps in coconut based industries in Tumkur district

Entity	Role, educational qualification	Expected competency	Skill gaps
Coconut desiccation unit	(1) Manage / supervisor (any degree) (2) Daily workers (unqualified)	▪ Hand peeling of fresh coconuts to remove outer cover ▪ Washing and removal of coconut water ▪ Desiccation of coconut in pulverising machine. This gives out small flakes / powder ▪ Drying of flakes / powder on chain drier ▪ Packaging of desiccated coconut ▪ Understanding of safety procedures and hygiene standards	▪ Manual peeling of coconuts is time consuming ▪ Lack the ability to operate the machine which could peel coconuts quickly and mechanically ▪ Lack understanding of safety procedures ▪ Lack hygiene ▪ Most of the packing is done manually
Coir rugs / mats making units	(1) Manager (any degree / diploma, preferable mechanical) (2) Supervisor (10^{th} pass) (3) Daily workers (unqualified)	▪ Breaking the coconut shell with a coconut buster ▪ Beating small coconut pieces in a coconut beater to convert coconut shell into fibre ▪ Cleaning the fibre in the fibre cleaning machine ▪ Running the fibre through slaver machine which joins the fibre in a rough rope ▪ Feeding of rough ropes into coir yarn spinning machines to make fine ropes ▪ Weaving of ropes into mats	▪ On-the job training is provided to daily workers: 3 months rope making and 3 months mat making ▪ It's a semi-skilled work, no formal training requirements ▪ Lack skills to make the products fancier and more advanced to meet competition from mats made from other materials like synthetic

Entity	Role, educational qualification	Expected competency	Skill gaps
		▪ Dying of fibre rope for colour (chemicals) requirement, if any	fibre etc.
Pith compost making units	(1) Manager /supervisor (any degree / diploma) (2) Daily workers (mostly unqualified)	▪ Mixing of pith, rock phosphate, dolomite powder and urea to make compost ▪ Understanding of the quantities in which all the components have to be mixed, in mixing machine ▪ Ability to sterilise the mixture to increase its life ▪ Packing in sacks for selling in the market	▪ No special skills required ▪ On the job training provided on mixing specifications and sterilisation

Source: IMaCS Analysis

5.3. Limestone mining

As discussed earlier, Tumkur district (mainly Chiknayakanhalli taluk) is rich in minerals such as iron, manganese, limestone, soapstone and gold. As of March 2012, Tumkur district had 62.51 million tonnes (mt) of proved iron ore reserves, 15.19 mt of probable reserves and 19.93 mt of possible iron ore reserves. Total area under iron ore is reported to be around 1,203 hectares. In 2011, mining of iron ore was banned by the Supreme Court due to environmental reasons. Mining of limestone, however, is still under-going. It is mainly done by private players only. As per information provided by the Department of Mines and Geology in Tumkur, the active limestone mines in Tumkur district are as follows:

- Karnataka Limestone Company Limited, located in C.N. Halli taluk, producing limestone (has limited production only)
- Mysore Cements (has a captive mine) in C.N. Halli taluk, producing limestone
- Jayanna in Gubbi taluk, producing clay (production almost stopped)
- Jayaram Minerals in Tiptur taluk, producing clay

Table 406: Skill gaps in limestone mining in Tumkur district

Role, educational qualification	Expected competency	Skill gaps
Managers and Mine head (1st Class mines manager certificate from Directorate of Mine and Safety)	▪ Knowledge of regulatory and legal requirements, including corporate mining lease process ▪ Ability to maintain quality ▪ Quality control ▪ Knowledge of latest mining technologies and advanced machines ▪ Understanding of environmental implications of the mining process and strict adherence to laws ▪ Ability to supervise operations at a mine to keep them efficient and safe ▪ Ability to monitor workers and work conditions ▪ Ability to meet production goals	Presently, there are no specific institutes in the district, which provide mining specific training. Most of the training is provided on the job. However, as mining picks up in the district in the next few years, demand for skilled mining personnel is expected to increase.
Engineers (electrical, mechanical, auto)	▪ Knowledge of scientific methods of mining ▪ Ability to plan and direct the various engineering aspects of extracting minerals ▪ Conducting investigation of mineral deposits ▪ Preparing plans for mines, including tunnels and shafts for underground operations, and pits and haulage roads for open cut operations ▪ Preparing layout of mine development and the way minerals are to be mined ▪ Overseeing the construction of the mine and the installation of plant and equipment ▪ Ability to adhere to the mining regulations	
Supervisors (Diploma in	▪ Ability to supervise activities conducted in the department for which responsibility is	

Role, educational qualification	Expected competency	Skill gaps
electrical, auto, mechanical)	entrusted. This could include crushing plant, mining, stores etc. ▪ Ability to train staff to operate the various large and small equipment used within mining operations ▪ Overseeing the safety of all workers ▪ Complete understanding of all safety regulations and ability to handle safety issues	
Fitters (experience based), Blasters and Drillers	▪ Ability to operate mining machines like dumpers, loaders and excavators ▪ Ability to drill using drilling machine ▪ Blasting skills ▪ Crushing skills	
Helpers / machinery attendants (High school pass)	▪ Ability to maintain machines ▪ Ability to help operators with their day to day functions ▪ Ability to problem-solve	

Source: IMaCS Analysis

5.4. Others

In addition to the sectors mentioned above, Tumkur district is also home to many manufacturing and engineering based industries. While most of them don't have any employment generation or expansion plans in the next few years, they have reported shortage of skilled manpower in some of the key functions like mechanics, plumbers, electricians, masons, welders, metallurgy (diploma / engineer) etc.

6. Recommendations

Recommendations for the Tumkur district are primarily focused for coconut related sectors, textile and clothing, mining and others. Interventions in all the sectors can be undertaken either by the

Government or by the private players. The recommendations will help generate additional employment in the sectors and will also help in the up-skilling of the existing workforce.

Majority of the population of Tumkur district at 80.4 per cent lives in rural areas and 70 per cent of the labour force is involved in agriculture alone. Most of these people do not have the affordability and even the 'willingness to pay' for private training. Thus, steps need to be taken specifically by Government to address skill development issues for such set of people.

While skill development for such people is required in areas related to agriculture and allied activities, trainings can be provided in urban trades as well, as increasingly, the population of the district is urbanising and more and more youth prefer to move from villages to the towns and the cities.

The Government not just has to play the role of a training provider, but also that of an infrastructure creator and enabler for certain services in the district. Thus, we have a separate set of recommendations both for the Government and the private players.

As discussed in the report, agriculture will continue to remain one of the biggest employment generators in the district. It will require significant interventions from different Government bodies for introducing new skills and techniques in existing work. The interventions in agriculture and allied sectors will not be financially feasible for the private training providers and thus they might not want to intervene. At the maximum, private players can provide training in agricultural sectors as a part of their Corporate Social Responsibility (CSR) initiatives. Thus, the Government alone will have to focus on the up-liftment of this sector and continue to introduce programmes which will improve productivity and livelihood opportunities.

We have provided a summary of recommendations in the Table below and elaborated upon them in the subsequent section.

Table 407: Key recommendations for Tumkur district – summary

Sector	Government	Private training providers	Industry
Coconut industry	▪ To provide training on desiccated coconut, coir based products and manufacturing of pith compost ▪ Modern techniques need to be brought in for all of the above mentioned products and community participation needs to increase ▪ Agencies who can participate in training programmes are: Department of Horticulture, Coconut Development Board, Karnataka State Coir Development Corporation and WSHGs	▪ No interventions required from private players as majority of the employment in the sector is from people with poor backgrounds who do not have the capacity to pay for private training.	▪ Opportunity to enter into a PPP agreement with the Government agencies / SHGs wherein the private player can provide marketing and sales support for the goods manufactured in the district.
Textile and Clothing	▪ Department of Textiles to provide assistance to NGOs who are currently providing training in the districts by way of scaling up their machine infrastructure, quality of curriculum and faculty	▪ Training centres to be started in the district in collaboration with the industry players ▪ Can also collaborate with Department of Textiles to assist them in their training programmes	▪ Industry to collaborate with private training institutes.
Mining	n/a	▪ Institutes providing training on mining technologies and	▪ n/a

Sector	Government	Private training providers	Industry
		skills used in integrated steel based plants	
Others	▪ Department of Employment and Training to improve infrastructure, quality of curriculum and faculty in ITIs ▪ Government to focus on improved bus connectivity between interiors of the districts and places where industry is located ▪ Organise awareness campaigns for youth in each of the talukas to make them better aware of the opportunities available	▪ Introduction of English speaking courses, soft skills and communication skills ▪ Private ITCs to focus on improved number and quality of welders, electricians and plumbers, mechanics, masons and metallurgy trade	▪ Scope for setting up business hotels in the district.

6.1. Coconut industry

Tumkur district is rich in coconut production and there is further scope to harness the potential of this sector. Traditionally, many coconut based industries have thrived in the district. However, many small scale units have started dying down in light of competition and more attractive looking substitutes available in the market. The industry is dying due to lack of technological advances. Thus, immediate steps need to be taken to revive the traditional industry.

Presently, some of the off-shoots of the coconut industry in the district are coir based products such as mats and rugs; pith compost, coir boards and desiccated coconut. There is scope to provide training in all of these areas for significant value addition.

Government

The Government can provide skills in desiccated coconut manufacturing, coir based products and pith compost – all made out of coconut.

- **Desiccated coconut**:

  As discussed in the report, Tumkur has many desiccated coconut manufacturing units. Most of these are concentrated in Tiptur and the adjoining Gubbi talukas. The biggest skill gap observed in these units is manual peeling of coconut. The same is a very time consuming process. Some units tried to introduce the machines but failed as there was lack of knowledge on how the machine should be operated. In some cases, fingers of the workers operating the machines got chipped, while in others the waste coconut generated from the machines got into the eyes of the workers, causing serious damage. While the units are willing to operate with machines, they do not have the technical know-how. Thus, training can be provided on the following.

  - Technical know-how on how the machines should be operated. Once this is achieved, workers' productivity can increase tremendously.
  - In addition, the current process of peeling leads to generation of a lot of waste coconut water, which gets collected in the peeling rooms and cause foul smell and diseases. Thus, training needs to focus on hygiene and safety measures as well.

  Such trainings can be facilitated by the Department of Horticulture in Karnataka. They can organise these trainings in association with Coconut Development Board of the Ministry of Agriculture of Government of India. Experts with required skill sets should be hired for providing such trainings. The target audience for such trainings can be the coconut cluster in Tiptur taluka. The same trainings can also be attended by people from Gubbi taluka.

- **Coir based products**:

  Coir is a natural fibre extracted from the husk of coconut and used in products such as floor mats, doormats, brushes, mattresses etc. Most of the coir products manufactured in Tumkur district are produced on small scale and are sold through Karnataka State Coir Development Corporation. Currently, the artisans manufacturing such products lack the skills to make the product fancier and more advanced to meet the competition from mats made from other materials like synthetic fibre etc.

There is a need to provide the trainings to the existing artisans as well as to new people who wish to join the sector to make the products more attractive and durable. For this, the cases of coir industry in Pollachi taluka of Coimbatore district of Tamil Nadu and the coir industry of Kerala should be studied.

In Pollachi (Tamil Nadu) and Kerala, rubberised coir products such as mats / rugs / mattresses are manufactured. Rubberised products are mainly manufactured by coir fibre used in combination with other natural or synthetic fibres or materials such as rubber for making products that are better suited for specific uses. Rubberised products are more durable and attractive.

The trainings can be enabled by the Karnataka State Coir Development Corporation, in collaboration with expert artisans from Pollachi or Kerela. Such trainings can become a part of the current programmes which are being run to train the artisans for this trade.

- **Pith compost**:

The largest by products of coconut is coconut husk from which coir fibre is extracted. The extraction process generates a large quantity of dusty material called coir dust or coir pith (generated in all coir product manufacturing units). Coir pith can be composted and then used as organic manure, specifically for indoor plants and horticulture crops. A few composting units have come up in Tumkur, which are making a decent amount of money by just composting the pith, which is not a very complicated process. This too is a big industry in Kerala. There are many unemployed youth in the district. If training on how to convert pith into compost is provided to them, they can get a decent source of livelihood.

Skill is required to convert the waste coir pith into compost, which is suitable as organic manure for indoor plants as well as for horticulture crops. Key training aspects to include mixing specifications and sterilisation.

There are several Women Self Help Groups (WSHGs) in the district, which are already receiving support and training from Government departments. These can be taught to make pith compost. Clusters of women can get together to start their own ventures into this area.

Private training providers

The sector is concentrated in rural areas, where capacity to pay for private trainings is low. Thus, providing training in this area by private training providers might not be feasible. However, PPP opportunities can be explored, where in training providers can tie up with Government agencies for providing training in areas we have discussed in the section above.

Industry

Presently, most of the products manufactured out of coconut in the rural areas are either marketed by the Government agencies or conducted on a small scale by small entrepreneurs. However, given the availability of the raw material and cheap labour, there is opportunity for bigger private players to collaborate with Government and SHGs in this area, especially in coir products and desiccated coconut.

PPP opportunities can be explored, wherein private players can source the ready materials from the local manufacturers and market / sell them outside. In return, the small players will benefit from having an assured market for their products.

6.2. Textile and clothing

Textile and clothing industry is the single largest source of employment under small scale industry in Tumkur. Going forward, significant investments are planned in this sector. During GIM 2010, an MoU was signed by GM Textiles & Apparel Infra Park Ltd. It plans to set up an 'Integrated Textile & Apparel Infrastructure Park' at an investment of Rs. 258 crore in the Tumkur district. Once set, the park will generate employment for over 30,000 people.

As discussed in the report, many garment factories have started moving to Tumkur due to low cost of production and availability of cheap labour. However, as per our discussions with industry representatives, we found that most of the people who are hired by these factories have to be extensively trained. People who have received prior training from elsewhere also have to be re-trained. It has been reported that currently, most of the training in tailoring is provided by NGOs, which do not have good faculty and latest machines.

Government

Currently, a few NGOs are running in the district, which provide training to people. There is a need to scale them up by improvising on machines and faculty. Going forward, if trained workforce is

available, it could generate employment opportunities for many. Tailoring skills need to be imparted to people with use of modern machines.

Private training providers and industry

Given the resources in the private sector, the private players have access to the modern machines along with expert faculty for providing skills mainly in the tailoring segment. Other value added skills such as buttoning, accessorising, designing etc. can also be imparted. The private players can even collaborate with Government agencies and assist them in their skill development programmes.

6.3. Mining

As discussed in the report, Tumkur district is rich in mineral resources, mainly iron ore. Currently, a ban has been imposed on iron ore mining. However, many steel based units plan to set up base in the district, as and when the ban is lifted. Once such industries come up, they will need skilled manpower to work in the mining and steel based factories. Presently, there are no institutes in the district, which provide mining specific training. Therefore, the sector presents an opportunity to private training providers. Such institutes can be set up in Tumkur taluka and even in the Chiknayakanhalli taluka, which is the centre for majority of the mining industry in the district. Training providers will also have to focus on training manpower on environmental issues. Mining technology and skills used for working in integrated steel based plants can be focused upon.

6.4. Others

In addition to the interventions mentioned above, there are other sectors which have common skill requirements across them and can be addressed up standardised interventions. There are also infrastructure bottlenecks in the district, which need to be taken up for supporting economic activity.

Government

The district has many State run vocational training institutes such as ITIs. Based on our primary survey, we found out that of all the students which pass out of ITIs every year, about 75 per cent find jobs. Thus, there is a need to improve the employability of all the students, so that the entire 100 per cent is able to find jobs. This can be achieved by increasing integration with industry and modifying courses to meet industry requirements. The apprenticeship scheme also needs to be strengthened further for the same. Additionally, the Government needs to focus on the following:

- Based on our interactions with different stakeholders we found that people in the interiors of the districts are not able to fully benefit from the job opportunities available in the district due to lack of proper transportation facilities. There are not many buses plying on the required routes. Thus, there is a need to improve frequency of buses and improve transportation facilities in the district.
- We also found out that many big companies are facing labour issues due to strong labour unionism. Government needs to resolve this issue as well on priority.
- While 65 per cent of the population in the district is in working-age group (15 to 64 years), about 51 per cent is actually working i.e. work participation rate. Therefore, there is a need to increase work-participation rate in the district. This can be done by increasing awareness in the youth to pick up jobs. Presently, many youth are not willing to join blue-collared jobs and jobs with lower salaries. Attitudinal changes need to be brought to solve this problem. Awareness campaigns held by different Government agencies can help in this respect.

Private training providers

Tumkur district is also home to many manufacturing and engineering based industries. They have reported shortage of skilled manpower in some of the key functions like mechanics, plumbers, electricians, masons, welders, metallurgy (diploma / engineer) etc. While the ITIs and ITCs in the district are focusing on some of these skills, they are not able to produce the required number and quality of manpower required for the same. In addition, we have also found that some of the basic skills such as communication skills, English speaking skills, and soft skills are lacking in manpower across all sectors and that is another area of opportunity for private players who wish to enter the district.

Industry

Tumkur benefits from its proximity to Bengaluru and the international airport. Thus, many industries which are facing lack of space and labour in Bengaluru are moving to Tumkur. The same trend is likely to continue in future. For that to succeed, one thing which Tumkur lacks is good hotel infrastructure. There are very few hotels in the district and those too are not up to the mark. Thus, there is opportunity for players in the hospitality industry to set up business hotels in the district.

9.28. UDUPI

1. Introduction

Udupi district was carved out of Dakshina Kannada district in 1997. It consists of three talukas, namely Udupi, Kundapur and Karkal. The district is spanned over an area of 3,565 square kilometres. It is surrounded by Uttara Kannada district in north and Dakshina Kannada district in the southern direction. Shimoga district borders on north east side and Chikmagalur district on east. Arabian Sea is on west of Udupi district.

It is sub-divided into 3 sub-districts and has 248 villages. About 81 per cent of the population lives in rural areas. About 38 per cent of the population (as of Census 2001) works in agriculture. The remaining is in household industry (13 per cent) and other workers[50] at 49 per cent.

Udupi district is known for hospitality. The Udupi cuisine that has gained fame all over the globe originated here, with its unique taste and dishes. The renowned Woodlands chain of restaurants has its main joint in Udupi town. In addition, Udupi is known for the temples. The Krishna temple and the Kollur Mookambika temple are the main centers here, which attract devotees from all over the country. There are also other numerous temples that dot the district.

[50] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

In current times, Udupi has gained prominence in the education sphere. The presence of the Manipal Group of institutions has put Udupi on the global map. Apart from Manipal, there are other institutes that foster the education atmosphere. In fact, Udupi has the highest literacy rate in Karnataka.

The main agriculture crops grown are paddy, horsegram, blackgram, greengram and cowpeas. The industrial development is not high due to the district being known mainly as cultural and religious center. The development that is happening today is also service oriented – with tourism, hospitality, IT and education being the driving sectors.

Table 408: Comparison of Udupi district with Karnataka – key indicators

Indicator	Year	Udupi	Karnataka
Area, in sq.km.	2001	3,565	191,791
Percentage share in State geographical area, %	2001	2.02%	100%
No. of sub-districts	2011	3	175
No. of inhabited villages	2001	248	27,481
No. of households	2001	211,454	10,401,918
Forest area as a % of total geographical area	2001	28%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Udupi district has a population of 11.77 lakh persons – 1.9 per cent of the State population. About 34 per cent of the population is concentrated in the Kundapur taluka, 18 per cent in Karkala taluka and 48 per cent in Udupi taluka. While 67 per cent of the population in the district is in working-age group (15 to 64 years), about 44 per cent is actually working i.e. work participation rate.

The district's literacy rate is 86.3 per cent, which is higher than the State average of 75.6 per cent and the All-India average of 74 per cent. Male literacy at 91.69 per cent is significantly higher than female literacy rate at 81.41 per cent. Of the 30 districts, Udupi ranks third on Gender Development Index (GDI), with a value of 0.704

Table 409: Key demographic indicators

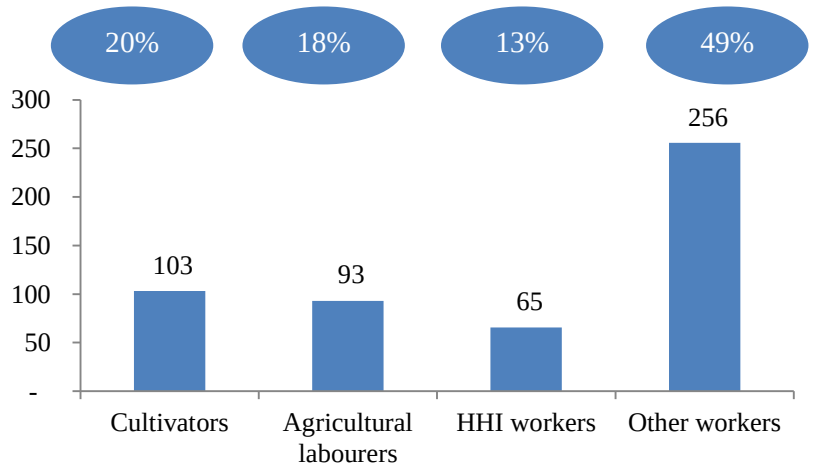
Indicator	Year	Udupi	Karnataka
Population, No.	2011	1,177,908	61,130,704
Decadal growth rate of population, %	2001-11	5.90%	15.7%
District's share in State's population, %	2011	1.9%	100%
Urban population as a percentage of total population, %	2001	18.5%	34%
SC population, %	2001	6.08%	16.0%
ST population, %	2001	3.7%	7.0%
Sex ratio, No. of females per 1000 males	2011	1093	968
Population density, per sq. km.	2011	304	319
Literacy rate, %	2011	86.29%	75.6%
Main workers, No.	2001	417,287	19,364,759
Marginal workers, No.	2001	70,886	4,170,032
Working age population* as a percentage of total population, %	2001	67%	63%
Work participation rate^, %	2001	44%	45%
HDI	2001	0.714	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*

Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 5.17 lakh persons. Of this, 20 per cent are cultivators, 18 per cent are agricultural labourers, 13 per cent are workers in household industry and 49 per cent are other workers.

Figure 237: Udupi district's worker profile, as of 2011, in thousands



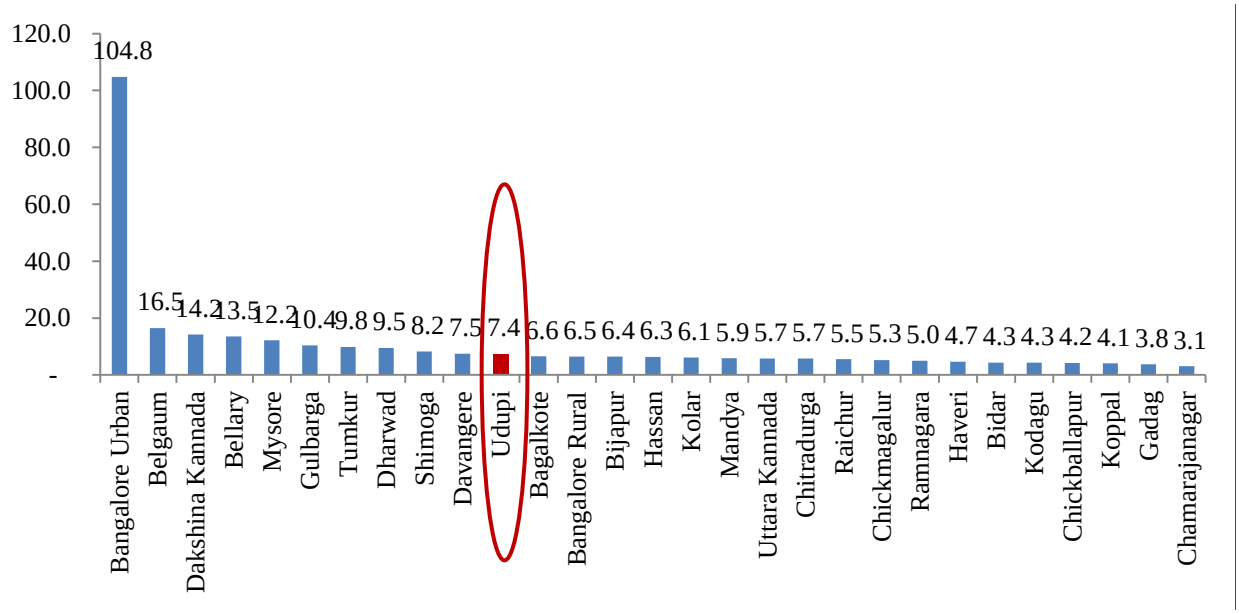
HHI: Household Industry

Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Udupi district had 11th largest Gross District Domestic Product (GDDP) in Karnataka at Rs 7,364.16 crore (2 per cent of the Gross State Domestic Product). In terms of per capita GDDP though, it ranked sixth amongst 30 districts at Rs 60,412. This was higher than the State average of Rs 53,101.

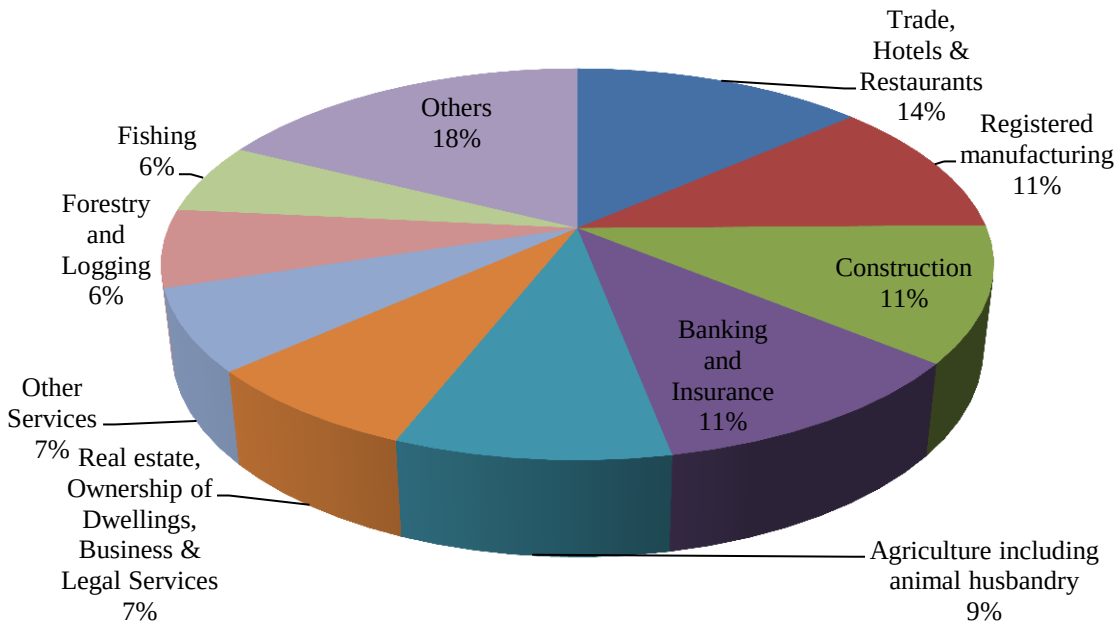
Figure 238: Gross District Domestic Product, in Rs thousand crores, as of 2008-09



Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 49 per cent in 2008-09. This is followed by secondary sector at 29 per cent and primary sector at 21 per cent.

Figure 239: Sector wise distribution of Udupi's GDDP, as of 2008-09, 100% = Rs 7364.16 crore



Source: Udupi District At a Glance 2009-10

Agriculture: Of the total area of 3,565 sq. km. in the district, about 28 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of paddy and black gram under food crops. Udupi also cultivates the variety of high yielding variety (HYV) paddy. For details of crops grown in Udupi district, refer to annexures.

Industry: As of 31st December 2011, Udupi district had eight large and medium scale industries. These include the Suzlon and Manipal groups. These industries offer employment of 3,600 people.

In the GIM 2010 two MoUs were signed for Udupi district. This included cement factory and a hydro power generation project. Cumulatively, these will generate employment for about 240 people.

In the GIM held in 2012, Udupi district attracted 10 MoUs/EoIs that were mainly focussed towards the hospitality sector. Also, IT and establishment of petroleum refineries were signed in the GIM 2012.

For details of these projects, refer to annexures.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 49 per cent of GDDP in Udupi district. Of all the services, the key services in the district are trade, hotel and restaurants at 13 per cent and banking and insurance at 11 per cent.

2.3. State of education

As of March 2010, Udupi district had 1,228 schools, with 187,440 students enrolled. There are 82 pre-university (PU) colleges with 27,374 students. There are also 11 general colleges, two medical colleges, three polytechnics (for technical education), three engineering colleges and one dental college. For details of courses offered by polytechnics, refer to annexures.

Table 410: School education infrastructure in Udupi district, as of March 2010

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Govt.	256	36,550	362	25,370	106	24,129
Aided	16	19,411	209	15,347	69	15,992
Unaided	12	24,683	106	12,553	92	13,405
Total	284	80644	677	53270	267	53526

Source: Karnataka Education Department

Table 411: Higher education infrastructure in Udupi district, as of March 2010

Colleges	No.	Students
PU Colleges	82	27,374
General	11	7,267
Medical	2	2,378
Polytechnic	3	2,018
Engineering	3	10,492
Dental	1	666

Source: Udupi District At a Glance 2009-10

For vocational training, Udupi district had a total of 10 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, three were Government ITIs, four were private aided

ITIs and remaining three were private unaided ITIs. All the 10 ITIs together have a seating capacity of 1,533.

Table 412: Key ITI indicators in Udupi district, as of March 2012

Indicator	Value
Total Number of ITI	10
Number of Government ITI	3
Number of Private aided ITI	4
Number of Private unaided ITI	3
Total Seating capacity	1,533
Student pass rate	80%
Student drop-out rate	5-10%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in Udupi district, we have found that on an average, of all the students that pass out from an ITI in each year, 75 per cent find jobs in the market. For details on courses offered by ITIs in Udupi, refer to annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and private Institutions. The Government Departments offer courses in trades such as machinist, tool room training, guide related training, driving skills training, etc.

The private training institutes are offering courses in teacher's training, nursing, computer education, Ayurveda and aviation. For details of courses offered by private training institutes in Udupi district, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Udupi district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- Youth not willing to stay back in the district as there are no job opportunities
- Migration to Mumbai and the Gulf countries is rampant

- Students, who are not able to get admissions in good colleges, prefer ITIs. The latter are also preferred because ITI certification helps in obtaining Government and even private jobs. The low fee is an added advantage. Also, students expect higher stipend.
- Quality of courses and teachers is average. Quality of infrastructure is below average.
- Prefer to remain unemployed rather than joining jobs with lower salaries.
- Prefer to study more before getting into organizations to work.
- Want to master communication in English
- The youth feel their overall soft skills need to improve
- Also, their ability to write needs to be developed
- Want enhanced computer training

3. Developmental concerns

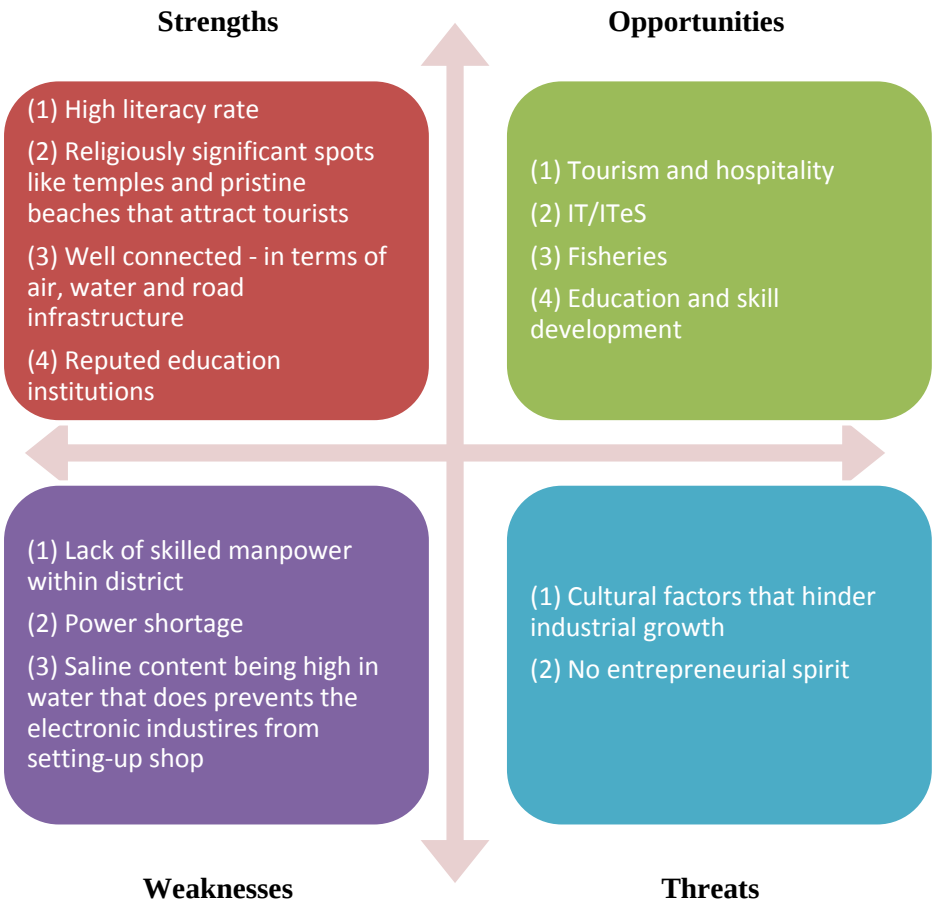
Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **Culture not suited to being industrial hub:** Udupi has always been known as a center for cultural development and religious importance. People prefer to pursue arts than into establishment of industries. But today, due to the saturation at the main centers of Karnataka – like Mangalore and Bangalore – Udupi is gaining a chance to develop industrially. For this to happen, a paradigm shift needs to occur.
- **Need for market oriented education:** With industrial development target on the cards, the education offered in the district needs to become market-oriented. The thrust should be given towards technical education that will create a pipeline of human resources that can be utilized across industries. This has been echoed by the industry representatives after our primary survey.

SWOT analysis

Based on the diagnostics of the Udupi district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figure below.

Figure 240: SWOT Analysis of Udupi district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 1.61 lakh persons is likely to be generated in Udupi district. Travel, tourism and hospitality and agriculture and allied activities are expected to remain the biggest employers. Amongst allied activities, a significant portion is engaged in fisheries. As the economy grows, employment demand in supporting sectors such as construction, transportation, healthcare and education is also expected to increase at a faster rate, which is reflected as demand for skilled personnel. There is rising demand for semi-skilled people, especially in welding, fitting and masonry in Udupi due to higher number of manufacturing and engineering units.

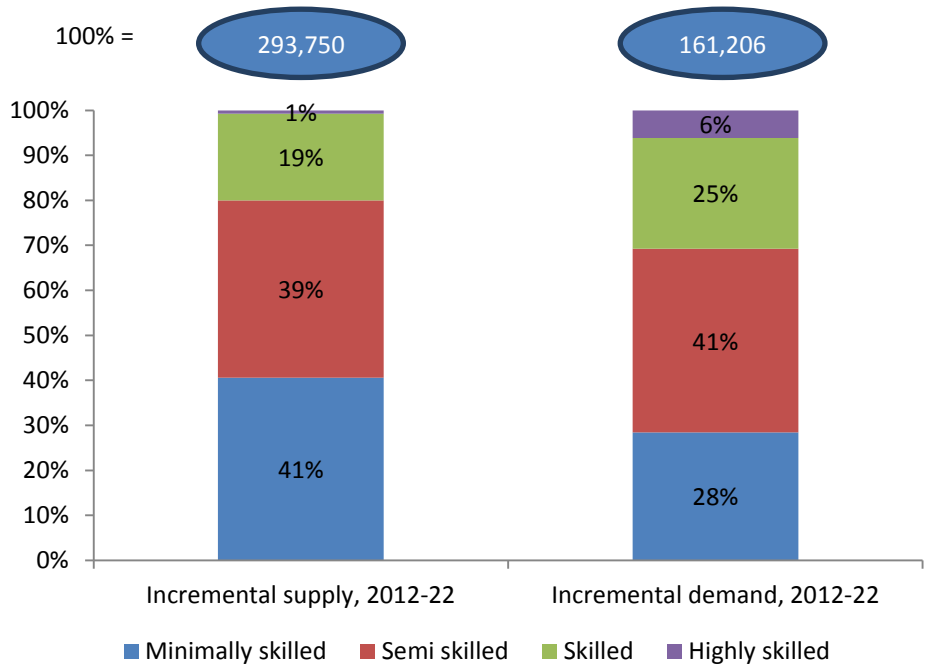
Table 413: Incremental demand in Udupi – 2012 to 2022

SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	22,034	18,352	2,743	499	441
Auto and Auto component	360	36	234	72	18
BFSI	10,629	-	6,378	3,189	1,063
Building, Construction industry and Real Estate	38,538	11,561	19,269	5,781	1,927
Chemicals & Pharmaceuticals	-	-	-	-	-
Construction Materials and Building Hardware	2,393	239	1,556	479	120
Education and Skill Development	7,199	-	-	6,479	720
Furniture and Furnishings	491	196	196	74	25
Healthcare Services	20,084	-	2,008	14,059	4,017
Textile and Clothing	1,412	282	847	212	71
Transportation, Logistics, Warehousing and Packaging	13,797	2,759	8,002	2,759	276
Tourism, Travel, Hospitality & Trade	44,240	8,848	30,083	4,424	885
Total	**161,206**	**42,280**	**71,332**	**38,032**	**9,561**

Source: IMaCS Analysis

The incremental supply of work-force between 2012 and 2022 is estimated at about 2.94 lakhs. This is higher than the demand. This leads to migration of the skilled personnel from Udupi to Mnagalore and Bangalore. The district has one of the highest literacy rates in the Karnataka, which produces a steady pipeline of skilled resources but, these people have to migrate due to less local industries. They typically move to work in IT and manufacturing sectors.

Figure 241: Skill wise incremental demand and supply in Udupi district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on our field surveys in Udupi district, we have found out that sectors where skilling interventions are required are mainly agriculture and allied - fisheries, education and skill development and hospitality. There is shortage of skilled manpower for functional skills such as fitting, electrical, welding, metallurgy, masonry etc. These trades also need to be offered to the youth.

Table 414: Sectors where interventions are required in Udupi district – comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Udupi	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		

High Growth Sectors identified by NSDC	Udupi	Karnataka
Food Processing – fisheries		
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 415: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Education and Skill Development Services	√	√	√
Tourism, Travel, Hospitality & Trade	√	√	√
Agriculture and allied – Fisheries	√	√	√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Agriculture and allied - Fisheries

The fisheries industry in Udupi is concentrated along the Malpe beach. The main produce includes marcos, sardines, sanilas, silver bellies, prawns, rohu and mrigal. The current activities in fisheries do not include a lot of processing. The thrust is required to skill the fishermen to add more value to the produce. The district has got west coastal line of 100 km. There are 4,697 non-mechanized and mechanized boats involving in fish catching. The marine fish catch was 99,422 metric tonnes (M.T) and

the inland fish catch was 1,831 M.T Fishing activity has resulted in promotion of cold storages, ice plants, freezing plants etc. There are 1,271 cold storages in the district. With the annual production of Udupi district being over 1,00,000 lakh MT, the infrastructure of the cold storage needs to be ramped up.

Fishermen along Malpe beach

Table 416: Skill gaps in fisheries in Udupi district

Role, educational qualification	Expected competency	Skill gaps
Fisherman (unqualified/minimally educated)	▪ Ability to undertake fish breeding and rearing ▪ Ability to clean the fish ▪ Understanding of modern methods of fish farming ▪ Knowledge of the feeds and supplements required ▪ Basic knowledge on the value addition and processing	▪ Not aware of the latest scientific methods
Fish farm owners/ managers(fish management	▪ Knowledge of Post- Harvest fish management ▪ Packaging skills ▪ Skills for marketing of fish ▪ In depth knowledge of various value addition	▪ Fewer managers available. So, the owner is forced to get qualified personnel from nearby

Role, educational qualification	Expected competency	Skill gaps
degree/ fish processing technology knowledge)	processes ▪ Soft skills	cities like Mangalore or Mumbai. ▪ Lack of knowledge on storage of the fish. At times, the fish are stored in unhealthy environs

Source: IMaCS Analysis

5.2. Tourism, Trade and Hospitality

Udupi district has renowned temples like the Krishna temple, Mookambika temple, Karkala Jain temples and Hiriadka Veerabhadra temple. In addition to the temples, it has the Malpe and Kaup beaches which are known for adventure sports.The district also has waterfalls like the Kudlu and Barkana falls. These are nestled deep in the Ghats and require fair amount of trekking to reach.

Apart from these 'spots' the Udupi food has a brand image in entire Karnataka. Udupi restaurants serving Udupi cuisine are popular all over India and have found its way into other countries also.

Udupi Sri Krishna temple and St Mary's Island


Table 417: Key spots in Udupi

Tourist Spot	Brief Description
Krishna temple	The Krishna temple of Udupi reflects the legend of Kishna and Sudhama.
Mookambika temple	The temple is in Kollur where the sanctum sanctorium has the three goddesses.
Malpe beach	This picturesque beach is known for boat rides and adventure sports like sea diving.
St Mary's Island	Off the Malpe beach, this island attracts tourists due to the rock formations. Rave parties are held here to boost the foreign tourists arrival

Source: Tourism Department

The district needs infrastructure development across all spheres. In addition to the infrastructure, capacity building also needs to be done. Currently, guide and driving training are being offered. In addition to these, special skills development like gliders, trekker guides, etc also need to be provided to increase the tourist traffic.

Table 418: Skill gaps in tourism, trade and hospitality industry in Udupi district

Role, educational qualification	Expected competency	Skill gaps
Hotels and other hospitality establishments (hospitality management degree, basic degree)	▪ Managing all the facilities and the functioning of the work-force. ▪ Supervising of the work conducted by housekeeping ▪ Soft skills and interpersonal skills ▪ Ability to connect with the guest and solve their problems ▪ Knowledge of the local attractions ▪ Ability to brand their offerings ▪ Overall etiquette	▪ Less managerial staff ▪ English speaking difficulties ▪ Customer relationship management difficulties ▪ Lack of professionally trained adventure sport teachers

Role, educational qualification	Expected competency	Skill gaps
Tour operators / guides (illiterate to 10th pass, trained by Tourism department)	▪ Route planning and optimisation ▪ Ability to liaison with airline, hotels and local community ▪ Ability to manage tourist expectations ▪ Customer Relationship Management ▪ Soft skills ▪ Understanding of local and English speaking skills	▪ Lack of soft skills ▪ Lack of many professionally trained guides

Source: IMaCS Analysis

5.3. Education and Skill Development Services

The Udupi district has been a district that has had deep cultural roots. This is reflected in its literacy rate of 86 per cent, high compared to other districts of Karnataka. Udupi students also top the 10th and 12th standard exams held every year by the Karnataka State Education Board.

Udupi district is home to internationally renowned educational institutions. The Manipal Academy of Higher Education (MAHE) runs schools, colleges and institutes of higher learning. Similarly, the Nitte Education Trust, located at Nitte, runs a large number of educational institutions.

The need of the hour for the district now is to make the education market-oriented. Majority of the students get educated and migrate from here due to less opportunities within the district. Again, due to lack of skilled manpower, not many industries have come-up. Thus, the education landscape of the district needs to be changed to build a pipeline of human resources.

Table 419: Skill gaps in education and skill development industries in Udupi district

Role, educational qualification	Expected competency	Skill gaps
Principal/Vice Chancellor (doctorate/post graduate degree holder with over 15 years' experience)	▪ Management of overall functioning of the educational institute ▪ Ability to give strategic ideas ▪ Knowledge of market demands ▪ Knowledge of training required ▪ Ability to hire the right professors ▪ Ability to enforce the academic rigour and discipline ▪ Ability to build the 'brand' of the institute	▪ No skill gap observed here.
Head of Department (doctorate/post graduate degree holder with over 10 years' experience)	▪ Ability to manage department ▪ Ability to allocate the right staff to the right course ▪ Knowledge of current trends ▪ Ability to incorporate them in the curriculum ▪ Handling some key classes	▪ No skill gap observed here.
Teachers/lecturers/training officers(Post graduate/graduate degree in the respective field)	▪ Ability to conduct classes ▪ Ability to appraise HoD of the progress reports ▪ Knowledge of latest techniques ▪ Understanding of various pedagogies ▪ Good communication skills ▪ Ability to give industry exposure to students	▪ Not able to adapt to the latest technology used in shop floor ▪ Need to improve the communication skills ▪ Variety of pedagogy need to be explored ▪ Need to provide market oriented education

Source: IMaCS Analysis

6. Recommendations

Recommendations for Udupi focus on the sectors of fisheries, education and skills and tourism and hospitality. Some of these sectors will have recommendations for the private sector which will directly translate to skills being developed and the others will need government intervention to facilitate improvements. The educated youth move to Mumbai and Bengaluru to primarily work in the IT/ITeS sector. Interventions for skilling in this can also be explored.

Finally, since a significant chunk of employment is concentrated in agriculture, thus, major up-skilling can be done for those workers, updating them of latest techniques of farming. This will help them improve their livelihood opportunities and will increase their income levels.

While the detailed recommendations follow, summary is given in the table below.

Table 420: Key recommendations for Udupi – summary

Sector	For private players	For Government players	For industry
Education and skills	▪ Faculty development ▪ Focus on the areas of pedagogy to ensure better reach to students ▪ Communication modules for faculty ▪ Possibility of tie ups with existing institutes for faculty development	▪ Improve the teacher's training courses in the government institutes	▪ The industry and training provider are same for this sector
Fisheries	▪ Modern fish processing techniques can be introduced after the sector undergoes a	▪ Community development through fish processing courses	▪ Industry can set up more fish processing units along the

Sector	For private players	For Government players	For industry
	revamp through the development of more fish processing entrepreneurs	▪ Techniques of processing ▪ Ease of credit access	Malpe and Kaup beaches
Hospitality	▪ Skilling based on the functional roles ▪ Focus on developing the hospitality establishment skills	▪ Re-branding of the tourism sector	▪ Establishment of recreational spots that aid adventure tourism

6.1. Education and skill development services

The district of Udupi has always had a rich cultural heritage. In terms of the academic performance also the district has always given consistent performances. The students regularly top the state Tenth and PU exams. The district also has a high literacy rate of 86 per cent. The presence of the Manipal Group of institutions has given the district a place in the global education map. A significant chunk of the student population that is in Manipal comes from abroad. Due to the benchmark set by Manipal, the infrastructure in the district in the education sphere is fairly well developed. The challenge that is faced by Udupi is the quality of the faculty. There are not enough faculty to keep pace with the mushrooming institutes and the increasing number of students enrolling. There is an opportunity to develop the faculty.

Private player

Faculty development can be done by institutes that can be set up in the Udupi town. Tie ups with established institutes can be explored. For instance, the Manipal Group routinely conducts faculty development programmes. Recently, an annual faculty development program of Manipal Group was organized. The goal of the program was to reflect and refresh research knowledge both qualitative as well as quantitative research process with aim of improving research skills of faculty as well as to

improve skills of faculty in guiding students. In addition, techniques to frame question papers were also taught.

Initiatives like these will equip the faculty to deal with the latest developments in the relevant subject. Along with such measures, some of the other general areas where training can be offered are:

- Various pedagogies that can be used to teach
- Communication skills
- Exam evaluation
- Effective course delivery

6.2. Tourism, trade and hospitality

The Udupi Krishna temple and the Kollur Mookambika temple are famed enough to attract religious tourists from all corners of the country. The Udupi hospitality has an identity of its own with its unique taste. This has now spread to all corners of the globe. In addition to these, Udupi has beaches where adventure sports are encouraged.

One of the challenges that the government is trying to overcome in this sector is the perception associated with Udupi tourism. The common idea is that this place is for people with religious tourism in mind. The government is hoping for a re-branding of the sector. As the first step, a rave party was organized at the St. Mary's Island, off the Malpe beach. This party gained immense attendance, attracting lots of foreigners who made the trip from Goa.

The idea is to create a new perception of the district as being a blend of the modern and the traditional. Thus, the interventions that are required for Udupi are two pronged:

1. Skill building for human resource in the sector
2. Re-branding of the sector as a whole

Private player

The skills have to build across the value chain, depending on the functional role. The tourism department is currently offering guide and language training. In addition to these, the following training can be offered.

Table 421: Training required in tourism in Udupi

Functional role	Training required
Tourist guide/operator	7. Communication skills 8. Route optimization 9. Courses to engage with the customer i.e. soft skills training
Hospitality establishments	6. Basic computer courses 7. Communication skills 8. Courses to solve basic problems 9. Hospitality management courses for establishment managers
Special personnel	1. Trekking experts 2. Adventure sports (cliff diving, parapenting, etc) experts 3. Sea diving experts

Government

The government – The District Tourism department and administration- needs to play the role of a facilitator in the process of the re-branding exercise. A parallel that can be drawn is the state of Meghalaya. The north eastern states have immense tourism potential but have always been collectively referred to as the Seven Sisters. Thus, the individual states lost their opportunity to market tourism separately. The state of Meghalaya made the attempt of re-branding its tourism sector by coining the term 'Mesmerizing Meghalaya' which brought to the fore the key attractions of the State and also conveyed how it was unique. This initiative helped Meghalaya to create a separate image in the mind of the prospective tourist. And, the first step to any destination becoming a successful tourist spot is the recall value which comes with the image in the mind.

Along similar lines, the Government must try to evolve an identity for Udupi – as it now juxtaposed i.e. it is known as yet another beach holiday spot and a temple spot. An effective re-branding would show the interplay of cultures that define the district today. Buoyed by the already prominent hospitality segment, this sector will attract more varied set of tourists and hence grow.

Industry

The district is blessed with coastline and well known beaches in the form of Malpe and Kaup. Along these, adventure tourism can happen. Activities like gliding, parasailing, jet skiing, snorkling, etc can be offered to the tourist. These need private player aid to flourish and attract more tourists.

6.3. Fisheries

Fishing in the district includes inland fishing and deep sea fishing. Malpe is centre of fishing activities of the district. The Arabian Sea is the prime source of fishing. The district produces several varieties of fish like catfish, barracuda, big eye, lobster, eels, prawns, flat fish, cuttle fish and dew fish. The opportunity in Udupi is to train the people in the arena of fish processing. As more value is added, more income can be gleaned from the produce. As far as this sector is concerned, majority of the people involved would not have the monetary strength to pay for course provided by the private sector. Hence, the Government needs to intervene and give processing courses, which will increase the social status of many.

Government

The District Fisheries Department, can conduct training modules off the Malpe as this is the main fishing center. These training can also expressly focus on women as generally, the men fish and the women process. This training should lead to social upliftment and act as an income generator. Some of the focus areas can be:

- Quality management of the fish
- Various fish value addition techniques
- Development of new fishery products
- Modules on how to develop market links
- Clean storage practices
- Fish drying techniques
- Packaging techniques

In addition, the Government needs to facilitate ways to ensure ways for the 'entrepreneurs' to get access to seed capital to start their ventures.

Industry

The industry players can look to set-up fish processing units along the Malpe and Kaup beaches, as these are the prime centers of fishing.

9.29. UTTARA KANNADA

1. Introduction

Uttara Kannada or North Canara district is one of the biggest districts in the state of Karnataka, with a land area of 10,291 square kilometres. This district, with its headquarters at Karwar, is known for scenic beauty of the Ghat sections and the pristine beaches. There are numerous spots across the district, which are being developed as tourist spots. These include the Devbagh Jungle Lodges and Tagore Beach in Karwar, Murudeshwar, with one of the largest Shiva statues, Gokarna in Kumta and many more beaches and temples. The beauty of the forests, peaks of the Sahyadri range and the numerous beaches have made Uttara Kannada synonymous with tourism and relaxation.

It is bordered by the state of Goa and Belgaum district to the north, Dharwad district and Haveri district to the east, Shimoga district and Udupi district to the south and the Arabian Sea to the west. It is sub-divided into 11 talukas and has 1,246 villages. About 67 per cent of the people live in the rural areas. Agriculture and fisheries are the main occupations, employing 40 per cent of the labour force (as of Census 2001). The remaining is in household industry (two per cent) and other workers[51] at 59 per cent.

[51] Other workers include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers, are 'Other Workers'.

Paddy and maize are the key crops grown. The district reaps benefits from the high annual rainfall it receives from the monsoons. The average rainfall is 3,000 mm in the district, which lends it as a good potential for horticulture based industries. The taluka of Sirsi already is making inroads into the horticulture sphere, with mangoes, sapota, and bananas being grown in a small scale. This effort is a pilot phase with less number of farmers. In terms of natural resources, limestone deposits are present in abundance in the district.

The industrial development in the district is not very high. Historically, the district has had land allocation challenges as about 75 per cent of the district is the Ghat section. Now, consequently, due to this less industrial development, several high profile projects like the Project SeaBird of the Indian Navy and the Kaiga power plant are coming up in Karwar, which has again made the district slow on the path to industrial progress as these are highly sensitive projects.

Table 422: Comparison of Uttara Kannada district with Karnataka – key indicators

Indicator	Year	Uttara Kannada	Karnataka
Area, in sq.km.	2001	10,291	191,791
Percentage share in State geographical area, %	2001	5.36%	100%
No. of sub-districts	2011	11	175
No. of inhabited villages	2001	1,246	27,481
No. of households	2001	273,422	10,401,918
Forest area as a % of total geographical area	2001	8%	13.9%

Source: Census 2001, Census 2011

2. Socio-economic profile

In this section, we have analysed the socio-economic profile of the district and made a few comparisons with the State average as well. The key sub-sections are demography, economy and status of education.

2.1. Demography

As per Census 2011, Uttara Kannada district has a population of 1,436,847 persons – 2.3 per cent of the State population. Sirsi taluka has the highest population share – about 14 per cent. This is followed by the Karwar taluka (about 12.5 per cent) and the Honavar and Kumta taluka have about 11 per cent of

the total population. While 65 per cent of the population in the district is in working-age group (15 to 64 years), about 43 per cent is actually working i.e. work participation rate.

The district's literacy rate is 84.03 per cent, which is significantly higher than the State average of 75.6 per cent and the All-India average of 74 per cent. Male literacy at 89.7 per cent is significantly higher than female literacy rate at 78.2 per cent. Of the 30 districts, Uttara Kannada ranks seventh on Gender Development Index (GDI), with a value of 0.639.

This high literacy rate is due to the education consciousness that pervades in the district. It is because of the fact that people are educated but have less local opportunities that has led to them migrating to Mumbai, Goa and Mangalore.

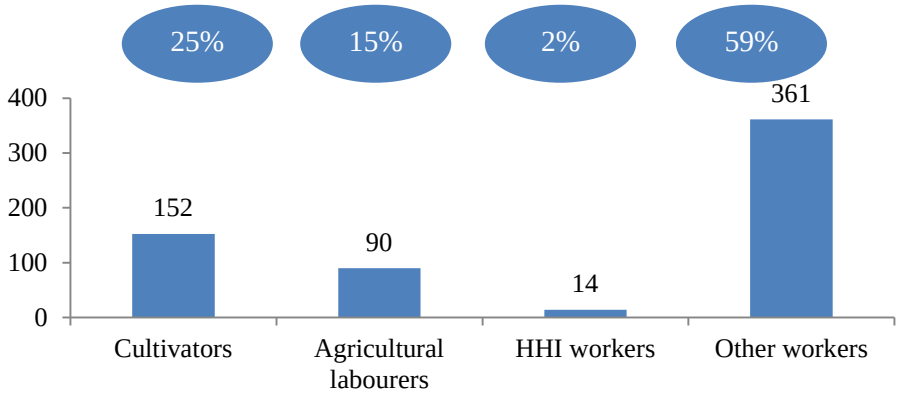
Table 423: Key demographic indicators

Indicator	Year	Uttara Kannada	Karnataka
Population, No.	2011	1,436,847	61,130,704
Decadal growth rate of population, %	2001-11	6.15%	15.7%
District's share in State's population, %	2011	2.3%	100%
Urban population as a percentage of total population, %	2001	33%	34%
SC population, %	2001	7.5%	16.0%
ST population, %	2001	1.7%	7.0%
Sex ratio, No. of females per 1000 males	2011	975	968
Population density, per sq. km.	2011	140	319
Literacy rate, %	2011	84.03%	75.6%
Main workers, No.	2001	455,302	19,364,759
Marginal workers, No.	2001	125,976	4,170,032
Working age population* as a percentage of total population, %	2001	65%	63%
Work participation rate^, %	2001	43%	45%
HDI	2001	0.653	0.65

**Working age population is the population in the age-group of 15 to 64 years. ^ Work participation rate is defined as the percentage of total workers (main and marginal workers) to total population. It is also known as the labour force participation rate.*
Source: Census 2001, Census 2011, Karnataka Human Development Report 2005

The district has a total workforce of about 5.8 lakh persons. Of this, 25 per cent are cultivators, 15 per cent are agricultural labourers, two per cent are workers in household industry and 59 per cent are other workers.

Figure 242: Uttara Kannada district's worker profile, as of 2011, in thousands

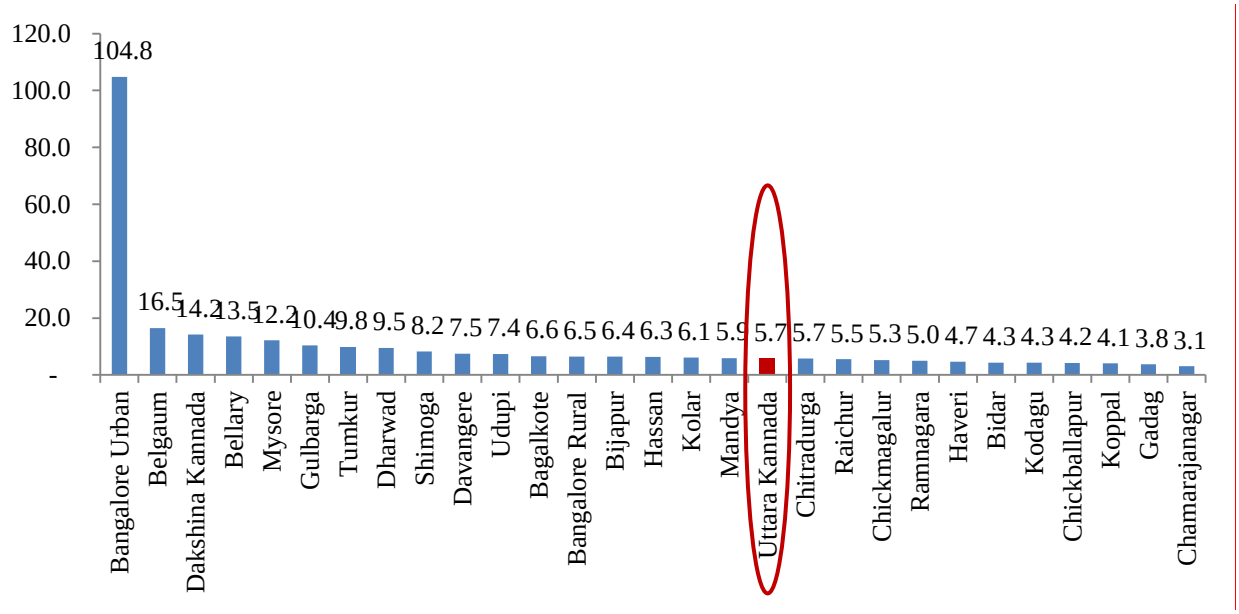


HHI: Household Industry
Source: Census 2001, Census 2011. Numbers are estimated.

2.2. Economy

As of 2008-09, Uttara Kannada district had the seventeenth largest Gross District Domestic Product (GDDP) in Karnataka at Rs 5,740 crore (1.8 per cent of the Gross State Domestic Product). In terms of per capita GDDP though, it ranked 13th amongst 30 districts at Rs 38,689. This was lower than the State average of Rs 53,101.

Figure 243: Gross District Domestic Product, in Rs thousand crores, as of 2008-09

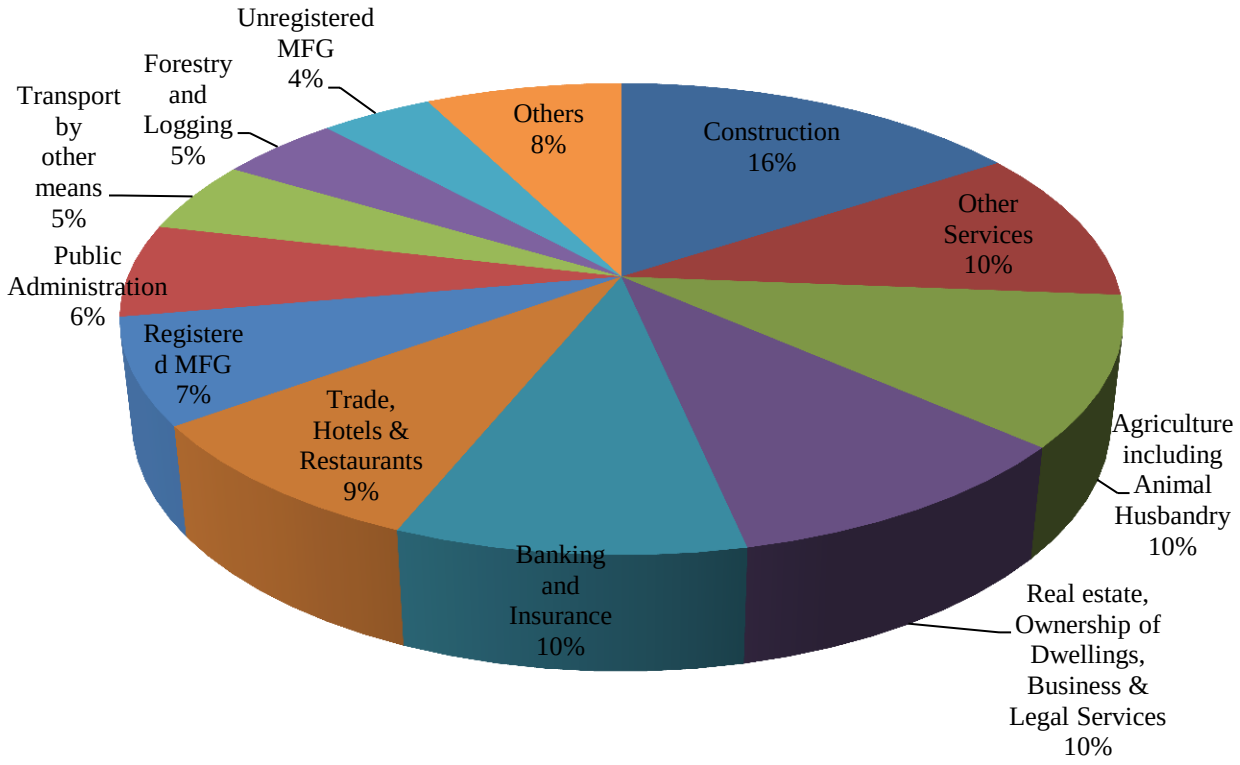


Source: Karnataka Directorate of Economic and Statistics

The district economy is pre-dominantly service based, with service sector's share in GDDP at 54 per cent in 2008-09. This is followed by secondary sector at 28 per cent and primary sector at 17 per cent.

.

Figure 244: Sector wise distribution of Uttara Kannada's GDDP, as of 2008-09, 100% = Rs 5,740 crore



Source: Uttara Kannada District At a Glance 2009-10

Agriculture: Of the total area of 10,291 sq. km. in the district, about 11 per cent is the net sown area (cultivated land). Agriculture is mainly dominated by cultivation of maize and paddy under food crops. The net sown area is only 11 per cent because of the domination of the Ghat section throughout the district. Most of this area is in Sirsi taluka. For details of crops grown in Uttara Kannada district, refer to annexures.

Industry: As of March 2012, Uttara Kannada district had three large and medium scale industrial units. These employed about 3,000 people. The key organizations are Parry Sugars, Dandeli Paper Mills and

Solaris Chemtech. Based on our discussions with the industry representatives, none of these have future plans to expand or to recruit more human resources at least in the next five years.

Uttara Kannada also has 9,154 Small Scale Industries (SSIs), employing 48,028 persons. Majority of these were in the food and intoxicants category. Cashew processing is undertaken in the district, as a by-product of which, the making of fenny – cashew flavoured alcoholic beverage is prevalent in the district. This is followed by wood based units. Refer to annexures for details.

The district has one industrial area in Shirawad, totalling 35 acres of land. Apart from this, there are eight industrial estates. For details, refer to annexures.

Uttara kannada district is attracting investments across sectors like tourism and power. During the Global Investors Meet (GIM) held in 2010 in Karnataka, four Memorandums of Understanding (MoUs) amounting to about Rs 8,300 crore were signed for the district. Once set up, these are estimated to employ 1,800 persons. For detailed status of these projects, refer to annexures.

Karnataka held its second GIM in June 2012. During this event, 21 MoUs / Expressions of Interest / Registrations of Interest happened for Uttara Kannada district alone. These are also mainly in the hospitality sector due to the district gaining popularity as a tourist destination. For details of these projects, refer to annexures.

Services: The services sector includes wholesale and retail trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, public administration and other services. As mentioned above, services account for 54 per cent of GDDP. Of all the services, the key services in the district are of 'real estate, ownership of dwellings, business and legal services' at 10 per cent of GDDP, followed by trade, hotels and restaurants at 9 per cent.

2.3. State of education

As of March 2010, Uttara Kannada district had 2,317 schools, with 166,912 students enrolled. There are 82 pre-university (PU) colleges with 22,977 students. There are also 30 general colleges, one medical college, eight polytechnics (for technical education) and three engineering colleges. For details of courses offered by polytechnics, refer to annexures.

Table 424: School education infrastructure in Uttara Kannada district, as of March 2010

Type	Lower Primary		Higher Primary		High	
	No.	Students	No.	Students	No.	Students
Govt.	2,236	97,971	1,365	118,272	234	45,044
Aided	5	1,805	52	14,670	298	66,884
Unaided	108	18,126	230	55,327	142	17,508
Total	2,349	117,902	1,647	188,269	674	129,436

Source: Uttara Kannada District At a Glance 2009-10

Table 425: Higher education infrastructure in Uttara Kannada district, as of March 2010

Colleges	No.	Students
PU Colleges	82	22,977
General	30	11,158
Medical	1	165
Polytechnic	8	4,362
Engineering	3	1,989

Source: Uttara Kannada District At a Glance 2009-10

For vocational training, Uttara Kannada district had a total of 19 Industrial Training Institutes (ITIs) / Industrial Training Centres (ITCs) as of March 2012. Of these, six were Government ITIs, four were private aided ITIs and remaining nine were private unaided ITIs. All the 19 ITIs together have a seating capacity of 2,922.

Table 426: Key ITI indicators in Uttara Kannada district, as of March 2012

Indicator	Value
Total Number of ITI	19
Number of Government ITIs	6
Number of Private aided ITIs	4
Number of Private unaided ITIs	9
Total Seating capacity	2,922
Student pass rate	80%
Student drop-out rate	5%

Source: IMaCS Primary Survey

Based on our discussions with the key stakeholders in the district, we have found that on an average, of all the students that pass out from an ITI in each year, 70 per cent find jobs in the market. For details on courses offered by ITIs in Uttara Kannada, refer annexures.

In addition to the above, the district has training infrastructure for different trades set up by both Government and Private Institutions. The Government Departments offer courses in trades such as machinist, tool room training, vocational training, poultry farming, dairy, fish culture, fish harvesting, fish breeding, motor driving, computers etc.

The private training institutes are offering courses in teacher's training, nursing, computers and air hostess training. For details of courses offered by private training institutes in the district, refer to annexures.

2.4. Youth aspirations

In the process of identifying the growth engines for the Uttara Kannada district, we also held a discussion with a youth group in the district to understand their aspirations. They key points are summarised below:

- Students, who are not able to get admissions in good colleges, prefer ITIs. The latter are also preferred because ITI certification helps in obtaining Government and even private jobs. The low fee is an added advantage.
- Training institutes in the district lack sophisticated machinery and infrastructure for training. Practical exposure is lacking.
- Quality of courses and teachers is average. Quality of infrastructure is below average.
- Students prefer to migrate due to the expectation of better pay scales
- Want to improve their language and communication abilities
- Prefer to study more – preferably some engineering or diploma course – to immediately joining an organization for work
- Feel that the students cannot compete with their counterparts from cities due to them having less soft skills

3. Developmental concerns

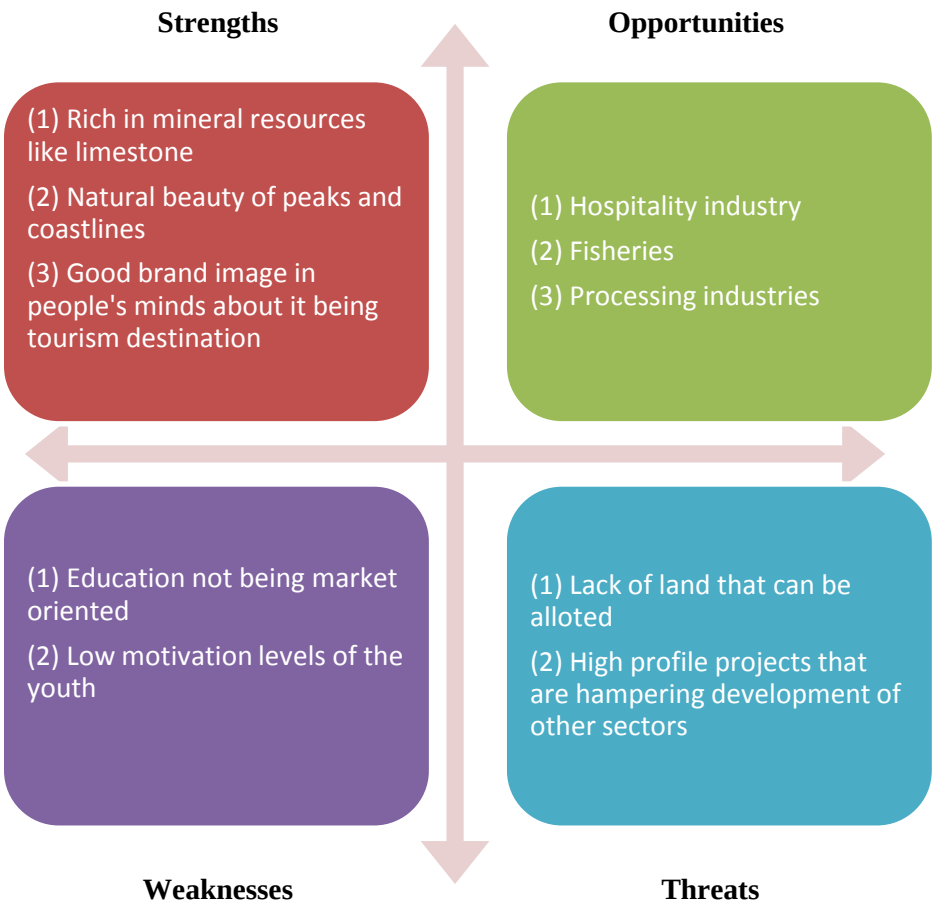
Based on our primary survey and discussions with the key stakeholders in the district, we have identified the following issues and challenges for the district:

- **High profile projects:** The district is playing host to several high profile projects mainly the Project SeaBird, Kaiga power station development and the Karnataka Power Corporation Limited hydro project. Though these projects are for the overall national welfare, they have rendered the district difficult to attract big industries. The Project SeaBird requires utmost privacy, where the basic idea is to build one of the biggest naval bases in Asia. A significant chunk of the coastline in the Karwar town has been devoted for this. This has stalled many industries from setting up their base in Karwar, where the infrastructure is most advanced within the district.
- **Shortage of skilled manpower within the district:** There is a marked shortage of skilled manpower within Uttara Kannada. This is due to the education institutes not being able to provide market relevant education and migration of the people outside expecting better pay scales.
- **Forest and Ghat section cover:** What intrinsic factors have made the district a tourist's paradise is also hampering the development as an industrial center. As majority of the district is covered by the Ghat section of the Sahyadri ranges and this land cannot be allotted for any big industry to set-up their shop floor in the district

SWOT analysis

Based on the diagnostics of the Uttara Kannada district, we have prepared a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is presented in figurew below.

Figure 245: SWOT Analysis of Uttara Kannada district



4. Employment Potential

We have forecasted incremental demand and supply of human resources for high growth sectors identified by NSDC. We estimate that between 2012 and 2022, an incremental demand for 1.64 lakh persons is likely to be generated in Uttara Kannada district. With tourism and hospitality being the main-stay of the district, this sector generates the maximum demand. As the economy grows, employment

demand in supporting sectors such as construction, transportation, healthcare and education is also expected to increase at a faster rate, which is reflected as demand for skilled personnel.

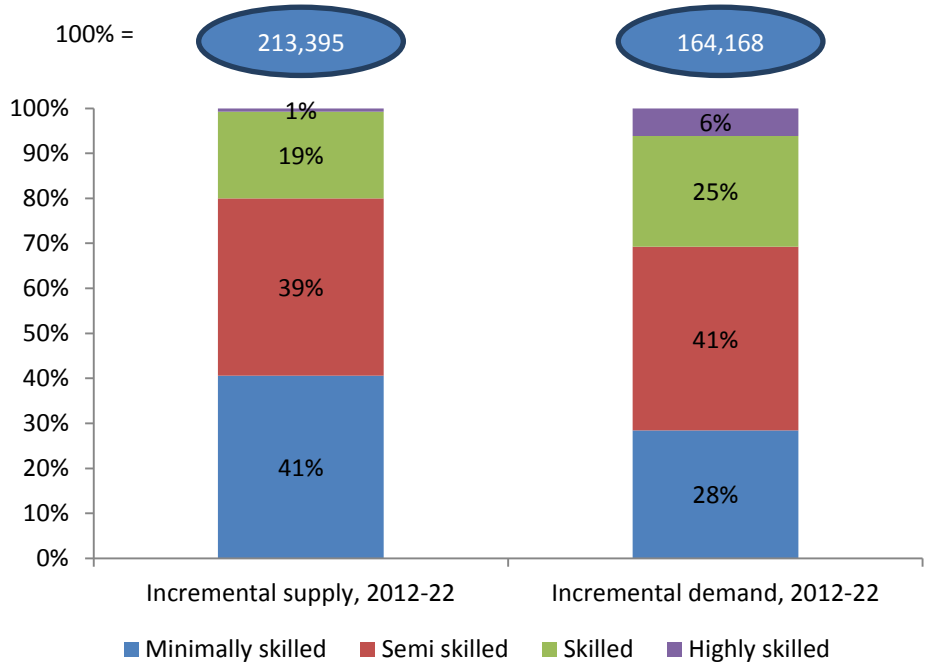
Table 427: Incremental demand in Uttara Kannada – 2012 to 2022

SECTOR	Incremental Demand - 2012 To 2022				
	Total	Minimally Skilled	Semi-Skilled	Skilled	Highly Skilled
Agriculture and allied	27,146	22,609	3,379	615	543
BFSI	8,529	-	5,118	2,559	853
Building, Construction industry and Real Estate	42,462	12,739	21,231	6,369	2,123
Chemicals & Pharmaceuticals	376	75	113	113	75
Construction Materials and Building Hardware	2,637	264	1,714	527	132
Education and Skill Development	9,072	-	-	8,164	907
Electronics and IT hardware	186	19	93	65	9
Food Processing	2,635	790	790	790	263
Furniture and Furnishings	261	104	104	39	13
Healthcare Services	20,578	-	2,058	14,404	4,116
Textile and Clothing	770	154	462	116	39
Transportation, Logistics, Warehousing and Packaging	16,705	3,341	9,689	3,341	334
Tourism, Travel, Hospitality & Trade	32,708	6,542	22,241	3,271	654
Unorganised	103	21	60	21	2
Total	**164,168**	**46,657**	**67,053**	**40,395**	**10,063**

Source: IMaCS Analysis

The incremental supply of work-force between 2012 and 2022 is estimated at 2.13 lakh. This is higher than the demand. This leads to migration of the skilled personnel from the district to Mumbai via Goa. The people who migrate typically work across engineering and manufacturing sectors. There is less supply of highly skilled personnel in the district, which leads to the available top level jobs being filled by people outside Uttara Kannada.

Figure 246: Skill wise incremental demand and supply in Uttara Kannada district – 2012 to 2022



Source: IMaCS Analysis

5. Skill mapping

Based on our field surveys in Uttara Kannada district, we have found out that sectors where skilling interventions are required are mainly agriculture and allied - fisheries, food processing – cashew processing and hospitality. There is shortage of skilled manpower for functional skills such as fitting, electrical, welding, metallurgy, masonry etc. These trades also need to be offered to the youth.

Table 428: Sectors where interventions are required in Uttara Kannada district – comparison with Karnataka
(Sectors highlighted in green are the sectors present in the district / state)

High Growth Sectors identified by NSDC	Uttara Kannada	Karnataka
Agriculture		
Auto and Auto component		
Banking and Financial Services Insurance		
Building, Construction industry and Real Estate services		
Chemicals & Pharmaceuticals		
Construction Materials and Building Hardware		
Education and Skill Development Services		
Electronics and IT hardware		
Food Processing – cashew processing		

High Growth Sectors identified by NSDC	Uttara Kannada	Karnataka
Furniture and Furnishings		
Gems and Jewellery		
Healthcare Services		
IT & ITES		
Leather and Leather goods		
Media and Entertainment		
Organised Retail		
Textile and Clothing		
Transportation, Logistics, Warehousing and Packaging		
Tourism, Travel, Hospitality & Trade		
Unorganised sector – Fisheries		

Source: IMaCS Analysis. Note: Sectors highlighted for Karnataka are based on basis of preliminary research only. These will be finalised after data for all the districts is consolidated.

The shortlisted sectors are at different stages of development and market evolution. Based on that, each one of them has separate skill requirements. While some require only skill up-gradation, some require new skills and even speciality skills. Sector wise details are given in Table 19 below.

Table 429: Level of skills required in shortlisted sectors

Sector	Speciality skills	New skills	Skills up-gradation
Trade, travel and hospitality	√	√	√
Food processing – cashew processing	√		√
Agriculture and allied - Fisheries	√	√	√

Speciality skills: Technical or specific knowledge base
New Skills: Skill set currently non-existent
Skill up-gradation: out-dated skills and techniques used currently

For the sectors identified above, we have mapped the skill requirements and the gaps faced by the sector in the section below.

5.1. Tourism, Travel, Hospitality and Trade

The district of Uttara Kannada has gained immense popularity as a tourism destination. The district has varied geographical features with thick forest, perennial rivers and abundant flora and fauna and a long coastal line of about 140 kilometers in length. Karwar has the Kali river meandering through it and is known for boat rides and captivating sunset/sunrise. There are several other tourist spots in the district.

The famous Tagore beach and Om beach see many tourists. In addition, Murudeshwar and Gokarna are renowned spots. There are also many temples in the district.

In the last few years, there have been many hospitality ventures in the district. The Devbagh Jungle Lodges is the most notable – which provides adventure and cabins. After GIM 2012 many more hospitality projects are on the anvil.

The biggest challenge for this district is to attract the tourists from northern India who generally stop at Goa. This can be done with better infrastructure and experiential tourism development. The aspect of capacity building also has to be explored where the human resource needs to be trained.

Beauty of Uttara Kannada

Table 430: Skill gaps in tourism, hospitality and trade in Uttara Kannada district

Role, educational qualification	Expected competency	Skill gaps
Hotels and other hospitality establishments (hospitality management degree, basic	▪ Managing all the facilities and the functioning of the work-force. ▪ Supervising of the work conducted by housekeeping ▪ Soft skills and interpersonal skills ▪ Ability to connect with the guest and solve	▪ Less managerial staff ▪ English speaking difficulties ▪ Customer relationship management difficulties ▪ Lack of professionally trained adventure sport teachers

Role, educational qualification	Expected competency	Skill gaps
degree)	their problems ▪ Knowledge of the local attractions ▪ Ability to brand their offerings ▪ Overall etiquette	
Tour operators / guides (illiterate to 10th pass, trained by Tourism department)	▪ Route planning and optimisation ▪ Ability to liaison with airline, hotels and local community ▪ Ability to manage tourist expectations ▪ Customer Relationship Management ▪ Soft skills ▪ Understanding of local and English speaking skills	▪ Lack of soft skills ▪ Lack of many professionally trained guides

Source: IMaCS Analysis

5.2. Food processing – Cashew Processing

Cashew processing units are found in abundance in the district, mainly concentrated in the Kumta taluka. Each of these units ranges from small to medium, which employ about 20 to 60 people. Mostly women are the employees.

These units have sprung up because of the factor advantage of lots of cashew plants that grow in Uttra Kannada. There export potential is tremendous, with many of these units exporting the final products to nations in Europe and Africa. Depending on the grade or quality of the cashew, the price varies from Rs 150 per kilogram to Rs 280 per kilogram.

Cashew Fruit – from which processing starts

Cashew Processing

The figures show the processing steps

Figure below gives the value chain of the cashew processing in Uttara Kannada district.

Figure 247: Value chain in cashew processing in Uttara Kannada district

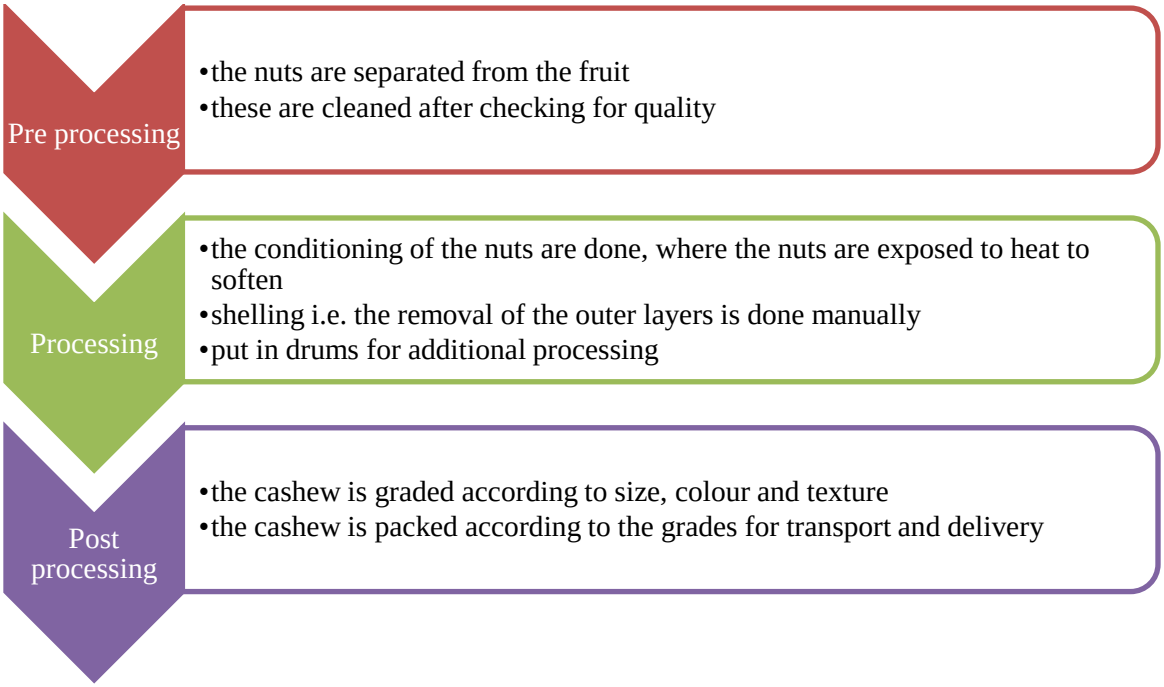


Table 431: Skill gaps in cashew processing industries in Uttara Kannada district

Entity	Role, educational qualification	Expected competency	Skill gaps
Cashew processing unit	(1) Manager / supervisor (any degree)	▪ Overall management of the process and people ▪ Soft skills for client interface ▪ Marketing talent ▪ Ability to fix prices ▪ Packaging of cashew nuts hygienically ▪ Understanding of safety procedures and hygiene standards	▪ No skill gaps observed
Cashew processing unit	Daily workers (unqualified/ 10th pass)	▪ Separation of nut from cashew fruit ▪ Cleaning of the nut ▪ Loading into machines	▪ On-the job training is provided to daily workers: 1 week to know the basic operation

Entity	Role, educational qualification	Expected competency	Skill gaps
		▪ Grading the cashews ▪ Packaging of cashew nuts ▪ Storage	▪ It's a semi-skilled work, no formal training requirements ▪ Take time to understand the machine controls

Source: IMaCS Analysis

5.3. Agriculture and allied - Fisheries

Fisheries is an important livelihood activity for the fishermen in Uttara Kannada district. The district is blessed with 162 kilometres of coastal length and the river that flows across it. Mackerel and shrimp are the famous produce from this district. Other targeted fish varieties are tuna, squid, green mussel. Also, value added items like fish oil production are on the anvil. The current production is about 26,000 MT (metric tonnes) of fish annually. Other pertinent points that stand in favour of this sector are:

- There are over 50,000 fishermen in the district who are engaged in small time fisheries
- The district administration has undertaken the Integrated Marine Fisheries Development project, which is aimed at infrastructural development
- Training being given in fisheries from Central Marine Fisheries Research Institute and Central Institute of Fisheries Technology
- Encouragement of brackish water prawn farming

A Small scale fish farm in Karwar

Table 432: Skill gaps in fisheries in Uttara kannada district

Role, educational qualification	Expected competency	Skill gaps
Fisherman (unqualified/minimally educated)	▪ Ability to undertake fish breeding and rearing ▪ Ability to clean the fish ▪ Understanding of modern methods of fish farming ▪ Knowledge of the feeds and supplements required ▪ Basic knowledge on the value addition and processing	▪ Not aware of the latest scientific methods
Fish farm owners/ managers(degree/ diploma from institutes like CIFT and CMFRI)	▪ Knowledge of Post- Harvest fish management ▪ Packaging skills ▪ Skills for marketing of fish ▪ In depth knowledge of various value addition processes ▪ Soft skills	▪ Fewer managers available. So, the owner is forced to get qualified personnel from nearby cities like Panaji or Mumbai. ▪ Lack of knowledge on storage of the fish. At times, the fish are stored in unhealthy environs

Source: IMaCS Analysis

5.4. Others

In addition to the sectors mentioned above, Uttara Kannada district is also home to some small units. These are basically in the livelihood genre like bakery, wooden crafts, brick making, bamboo artefact making, repair works and making leaf cups and plates. These require basic skilling in areas like sewing, storage, packaging, etc

6. Recommendations

Recommendations for Uttara Kannada district focus on the sectors of fisheries, food processing – cashew processing and tourism and hospitality. Some of these sectors will have recommendations for the private sector which will directly translate to skills being developed and the others will need government intervention to facilitate improvements. The educated youth move to Mumbai, Goa and Bangalore to primarily work in industrial units across various sectors. Interventions for skilling in general trades like fitting, welding, mechanic, electrician, etc by increasing capacity can also be explored.

Finally, since a significant chunk of employment is concentrated in agriculture especially in Sirsi taluka, thus, major up-skilling can be done for those workers, updating them of latest techniques of farming. This will help them improve their livelihood opportunities and will increase their income levels.

While the detailed recommendations follow, summary is given in the table below.

Table 433: Key recommendations for Uttara Kannada – summary

Sector	For private players	For Government players	For industry
Food processing – cashew processing	▪ Na	▪ Aid in the Formation of clusters to standardize the process ▪ Awareness propagation to encourage more farmers ▪ Aid in research to improve the	▪ Cashew processing units can come together and form clusters for standardization purposes

Sector	For private players	For Government players	For industry
		produce	
Fisheries	▪ Fisheries skilling institute to teach processing and modern techniques	▪ Community development through aid in formation of SHGs to empower women ▪ Help in building marketing skills ▪ Facilitate easy access to credit	▪ Industry can set up fish processing units
Hospitality	▪ Skilling based on the functional roles ▪ Increased focus on developing skills in hospitality ▪ Development of special personnel like diving experts	▪ Promoting the tourism sector ▪ Development of infrastructure ▪ Create an alternate hub in addition to Karwar	▪ Set up more hotels in key spots ▪ Facilitate adventure tourism in district

6.1. Fisheries

Fisheries is an important activity for the local population of Uttara Kannada district. The district is having 162 kilometers of coastal length and roughly having 10,000 – 11,000 square kilometers of continental shelf area which is very good potential area for fishing and fish productions. About 1.4 lakh people find their livelihood through this sector. The Mackerel is a very famous fish that is produced in the district. About 33,233 metric tons of marine fish and 850 metric tons of inland fish were harvested in 2009. The critical necessity of fisheries sector is to add value to the produce. The current production is just cleaned and sent to the markets based on demand. The key activity of value addition in terms of processing is

not done as a major activity. The processing will result in higher income for the fishermen. The interventions required for this sector in Uttara Kannada will be:

1. Institutes that teach the fishermen with the modern techniques and value addition
2. Capacity building required for hygienic storage and transport

Private player

The training that has to be provided by the private player should address the main gaps of lack of knowledge related to value addition and lack of knowledge related to modern fishing method/technology. Fisheries institute can be set up in Karwar and Ankola talukas. The courses taught here should be targeted at both the fishermen and fish farm managers. Some of the courses that can be offered are:

- Fisheries management where sustainable methods of fishing are taught
- To teach the causative agents of fish spoilage
- To understand the hygienic handling of fish and prawn on board fishing vessel and on shore
- Development of the skill of iceing the fish, which will reduce the spoilage
- Improving the know-how with the fish processing equipments
- Difference in techniques in inland and marine fishing
- Packaging courses like tinning which will increase the shelf life of the fish

Government

The role of the government in making fisheries a nodal activity in Uttara Kannada is more enhanced. The government is already doing its bit for the sector with multiple initiatives. Some of the more prominent initiatives are:

- Encouragement of fishermen co-operative society
- Housing for fishermen under the Mathsyasharya scheme
- Fishermen accidental insurance provided
- Fishermen distress relief fund
- Development of inland fisheries, especially in Sirsi and Holiyal talukas

In addition to this, it should be the Government's responsibility to make the sector a sustainable and profitable activity. This will attract more to take up employment in the sector. Also, fish processing is a sub-sector where women can get employed. The biggest challenge for setting up small fish processing

units is the seed capital availability. The government's – especially the Fisheries department - aid is required in forming SHGs (especially women) that can enter into this activity and reap profits.

One of the successful examples is the Thenkumari Self Help Group in Tamil Nadu. This was formed for the purpose of fish marketing under the auspices of the Women's Development Programme. This group was given initial financial aid due to government support. Today, they are fish suppliers to the Taj Coromandel in Chennai. And, more women are being inspired to learn fish procurement management and enter into the sector. Along similar lines, in Uttara Kannada the government can intervene to bring about social change.

Industry

The industry players can look to set-up fish processing units along the beaches and prime fishing centers. This activity should also be coupled with training by the industry, in partnership with the private training providers for giving the market perspective when the courses are conducted.

6.2. Cashew processing

The cashew processing is done in the Uttara Kannada district due to the factor advantage of the cashew plants that grow easily. The processing units are concentrated in the Kumta taluka. The process involves roasting, shelling, drying, grading and finally packaging. There is no specific skill gap that exists here as the work force is taught on the job and the skill sets required is also quite straightforward. However, from the government's end initiatives would be required to tap the growing export market in the cashew segment. The demand for cashews is increasing especially in Europe and Africa. If there are pointed initiatives that are implemented, the sector will have better future.

Government

Some of the initiatives that can be provided by the Government Horticulture Department are:

- Increasing the area under cashews by setting up nurseries. This will also generate employment and income to cashew farmers
- Spreading awareness to existing cashew farmers about techniques like cashew grafts
- Creating separate nurseries for organic cashews, which will fetch better price in the international market

- Need to facilitate the easy credit facilitation for the establishment and management of units
- Setting up of cashew processing cluster will facilitate control over price fluctuation, expand market linkage, establish brand name and improvement of quality of kernels. Currently, there are no such clusters on the ground. Formation of these will regularize the sector.
- Also, such a cluster will also encourage the establishment of the other ancillary units like the cashew nut shell liquid extracting units and units producing jam and pickle from the cashew apples, etc. These will provide both the employment opportunities to the people and generate income

Industry

The formation of clusters is required in the district to give the sector greater visibility. The units that function need to come together, with the government's aid, to form clusters. Some of the key points that can be standardized are:

- Prices of the nuts
- Type of grading
- Wages to be paid
- Packaging techniques to retain flavour

6.3. Travel, Tourism and Hospitality

As detailed out earlier, the district is blessed with natural beauty – in the form of beaches and hills. The Tagore beach, Murudeshwar, various temples, churches and trekking spots – Uttara Kannada has potential to become the foremost preferred destination for tourism in Karnataka. The district does have challenges also, which it needs to overcome. Some of the challenges faced by this sector are:

- Needs to find ways to attract people from Northern India, who stop at Goa
- Need to have more people trained in being guides
- The fact that Karwar is playing host to several big projects makes it necessary to develop centers in other talukas which can act as the hub for the tourists

The private sector needs to help in capacity building and the government has to focus on infrastructure development and creating a brand for the sector as a whole.

Private Sector

The capacity building is required across the value chain, based on the functional role. All the courses should be certified. They can be based in the taluka headquarters of Sirsi and Karwar.

Table 434: Training required in tourism – Uttara Kannada

Functional role	Training required
Tourist guide/operator	• Communication skills • Route optimization • Courses to engage with the customer i.e. soft skills training
Hospitality establishments	• Basic computer courses • Communication skills • Courses to solve basic problems • Hospitality management courses for establishment managers • Culinary skills to prepare the special cuisine of the Goan region
Special personnel	• Trekking experts • Adventure sports (cliff diving, parapenting, diving, etc) experts

Government

The role of the government Tourism department here should be that of an infrastructure creator. An alternate center to Karwar has to be created where the tourists can use it as a hub. Also, the visibility of the tourism sector has to be increased, as there is an already established center Goa, about 100 kilometres away.

Industry

Uttara Kannada requires more hotels across the district to facilitate the development of the sector. Right now, the spot of Murudeshwar has gained prominence due to industry setting up good infrastructure and hospitality. Similar efforts have to be undertaken for other spots. Some of the interventions that can be undertaken by the industry players are:

- Establish hotels and resorts near key spots

- More number of hotels in the main hubs of Karwar and Sirsi
- Facilitate the tapping of adventure tourism in the district
- Facilitate the creation of experiential tourism

This report has been prepared by **ICRA Management Consulting Services Limited (IMaCS).**

IMaCS is a multi-line management and development consulting firm headquartered in India. It has an established track record of over 15 years in consulting across various sectors and countries. IMaCS has completed over 950 consulting assignments and has worked in over 30 countries across the globe. Through the process of carrying out several assignments over the last decade and half, IMaCS has accumulated considerable analytical and consulting expertise, backed by the following capabilities:

- Deep understanding of policy formulation.
- Extensive and organised database on several sectors.
- Knowledge of key factors of success in different projects and programmes.
- Ability to research emerging trends in the economy, as well as in specific sectors.
- Insight into different programmes and organisational processes.
- Ability to carry out economic analysis, build quantitative and financial models to project future
- performance and identify imperatives.
- Ability to identify the various types of risks and suggest appropriate strategies to mitigate the
- same.

The Education and Skills practice at IMaCS focusses on identifying skill gaps, mapping future skill requirements, and formulating strategies to address them. Our service offerings encompass diagnosis, design and implementation of education and skill development interventions for government and private sector.

R. Raghuttama Rao Managing Director IMaCS 4th floor, Electric Mansion Appasaheb Marathe Marg, Prabhadevi Mumbai – 400 025 Tel: 91 22 3047 0047, Fax: 91 22 3047 0081 Email: raghuttama.rao@imacs.in	M. Sairam Head – Process Consulting IMaCS 5th floor, Karumuttu Centre 634, Anna Salai, Nandanam, Chennai – 600 035 Tel: 91 44 2434 0043, Fax: 91 44 2434 3663 Email: sairam.m@imacs.in

For more details please contact:

National Skill Development Corporation
D-4, Clarion Collection, (Qutab Hotel)
Shaheed Jeet Singh Marg
New Delhi 11 0 016
Tel : 011 46 56 0414
Fax : 011 4656 0417
Email : nsdc@nsdcindia.org

www.nsdcindia.org