N·S·D·C
National
Skill Development
Corporation

District wise skill gap study for the State of Tamil Nadu (2012-17, 2017-22)

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ACKNOWLEDGEMENT

We are grateful to the Government of Tamil Nadu and its various departments for their contribution towards the successful completion of the study. Our special thanks to Mr. G. Prakash, IAS and the members of the Tamil Nadu Skill Development Mission for their focused guidance and involvement in the preparation of this report.

We would like to express our gratitude towards our industry partner, Confederation of Indian Industry (CII) and our training partner, Talent Sprint for their active participation. The success of the study has been made possible by their collaborative efforts.

We acknowledge with gratitude the support provided by various Skill Training Providers, Non Governmental Organizations, Industry Representatives and the youth of the state for their contribution towards the study.

We thank all those who have facilitated and supported us in this study.

ABBREVIATIONS

AICTE:	All India Council for Technical Education
ASI:	Annual Survey of Industries
ATI:	Advanced Training Institute
BFSI:	Banking and Financial Services Industry
BPO:	Business Process Outsourcing
CAGR:	Compounded Annual Growth Rate
CII:	Confederation of Indian Industry
CPC:	Central Placement Cell
DET:	Department of Employment and Training
DSDC:	District Skill Development Council
DVET:	Department of Vocational Education and Training
FGD:	Focus Group Discussion
GDP:	Gross Domestic Product
GSDP:	Gross State Domestic Product
HR:	Human Resources
ICT:	Information and Communications Technology
IHM:	Institute of Hotel Management
IT:	Information Technology
ITC:	Industrial Training Centre
ITES:	Information Technology Enabled Services
ITI:	Industrial Training Institute
LFPR:	Labor Force Participation Rate
MES:	Modular Employable Skills
MHRD:	Ministry of Human Resource Development
MOSPI:	Ministry of Statistics and Programme Implementation
MRO:	Marketing, Research and Operations
MSME:	Micro, Small and Medium Enterprises
NGO:	Non-Governmental Organizations
NRHM:	National Rural Health Mission
NSDC:	National Skill Development Corporation
NSDP:	Net State Domestic Product
NSS:	National Sample Survey
NSSO:	National Sample Survey Organisation
PCPIR:	Petroleum, Chemicals and Petrochemicals Investment Region
PMEGP:	Prime Minister's Employment Generation Programme
PPP:	Public Private Partnership
R&D:	Research and Development
RBI:	Reserve Bank of India
RCH:	Reproductive and Child Health
SCERT:	State Council for Education, Research and Training
SHG:	Self Help Group
SSC:	Sector Skill Council
TAHDCO:	Tamil Nadu Adi Dravidar Housing Development Corporation
TANSCHE:	Tamil Nadu State Council for Higher Education
TANUVAS:	Tamil Nadu Veterinary and Animal Sciences University

TNSDM:	Tamil Nadu Skill Development Mission
UGC:	University Grants Commission
UYEGP:	Unemployed Youth Employment Generation Programme
VET:	Vocational Educational and Training
VTI:	Vocational Training Infrastructure

1 OBJECTIVES OF THE STUDY

National Skill Development Corporation (NSDC) had mandated Athena Infonomics India Pvt. Ltd. to undertake the District level Skill Gap Study of the state of Tamil Nadu.

The study objectives included the following at the state as well as the district levels:

- Socio-economic profiling – demography, economic profile of district by industry and state of education.
- Identification of developmental opportunities keeping in mind factor endowments and stakeholder perspectives.
- Identification of specific developmental initiatives/projects which have an impact on employment generation.
- Articulation of the aspirations of the youth.
- Identification of the current and future (2012, 2017 and 2022) skills and human resource requirements by industry and estimate the gap that exists.
- Studying the existing VT infrastructure both in the private sector, and the government domain.
- Suggestion of suitable interventions/recommendations to address the skills gap.
- Development of specific and actionable recommendations.
- Recommendations were also to include specific initiatives that NSDC can take based on the mandate of the organization.
- Creation of an action plan with indicative timelines.

2 LIMITATIONS OF THE STUDY

- The study was constrained by the availability of adequate data for estimating human resource requirements and availability at various skill levels across districts and industries. There were discrepancies across different data sources, which were addressed by using information from reliable sources.
- Human resource requirement is estimated on the basis of number of persons engaged in different industries in the state while human resource availability is based on the work force, incorporating any additional information made available through other sources such as primary research. The skill gap is to be interpreted as the difference in the estimated human resource requirement and the estimated human resource availability from 2012-17 and 2017-22.
- Assumptions of mathematical regularity were made for estimating incremental human resource requirement and availability.
- The study was carried out at the district level and therefore, does not reflect specific characteristics at the block or village level.
- The sample size for primary research was influenced by the time-bound nature of the study.
- The skill classifications are based on educational attainments, and therefore do not account for skills acquired informally or on-the-job.
- Training provided by unregistered private training providers is not reflected in the estimations due to the unavailability of data on capacity, employability and quality.
- The unavailability of complete time series data for relatively new districts was a challenge, and was addressed through approximations based on available information and district characteristics.
- The estimations include approximations and adjustments using past growth rates, regional and national averages, benchmarks arrived at through research, information regarding upcoming investments and employment and historical trends.

3 METHODOLOGY

A structured methodology was adopted to assess the skill development scenario in the state of Tamil Nadu as per the Terms of Reference, by evaluating incremental human resource requirements and drawing research insights. Recommendations were developed to address the skilled human resource requirement in across districts and sectors.

3.1 Key Terms

Human Resource Availability: This refers to the expected availability of human resources at various skill levels across districts based on estimates of the population growth rate, working age population, labor force participation and enrolment.

Human Resource Requirement: This is the estimated human resource requirement at various skill levels across districts and industries based on employment, industrial output, expected growth in industrial sectors and growth drivers.

Skilled Human Resources: Human resources with at least 5 years of education after Class 10. This includes all college graduates.

Semi Skilled Human Resources: Human resources with 3-5 years of education beyond Class 10. This includes those with polytechnic or ITI diplomas.

Unskilled Human Resources: Those with lower educational attainment than the semi skilled human resources are classified as semi skilled.

Skill Gap: The skill gap is the difference between the estimated human resource availability and the estimated human resource requirement across skill levels and districts.

Unorganized Sector

The unorganized sector consists of all unincorporated private enterprises owned by individuals or households engaged in the sale and production of goods and services operated on a proprietary or partnership basis and with less than ten workers

Unorganized Worker

Unorganized workers consist of those working in unorganized enterprises or households, excluding regular workers with social security benefits, and the workers in the formal sector without any employment/social security benefits provided by the employers

Contract Employment

Employment by means of informal (generally unwritten), loosely enforceable contracts

Self Employment

Employment by means of being the proprietor or partner in a business

Cohorts

Employed Cohort: This group consisted of people employed at their current place of work for at least one month. In each FGD, the participants must be employed in at least 4 different industries. People with erratic employment may be included in this category only if they have worked for at least 15 days in the past month.

Unemployed Cohort: This group consisted of people who were involuntarily unemployed, i.e., members of the population who are actively seeking employment and are unemployed. The participants may be formally educated/vocationally educated/uneducated.

Vocationally Educated: This cohort consisted of respondents who were pursuing a vocational/technical education program (of at least 3 months in duration) at any Industrial Training Institute (ITI), Industrial Training Centre (ITC), industrial school, polytechnic or other private skill development institute.

Formally Educated: This cohort consisted of students in Class 11 or 12.

Information Channels

Personal Networks: Information received through network of friends, relatives and other personal interactions

Notifications: Advertisements and postings in newspapers, on television, internet, etc.

Placements: Information received by way of enrolment in formal placement programmes offered by educational institutions

Word of Mouth: Information received through a network of friends, relatives and other personal interactions

Referral: Recommendation by a known associate to future employer

Other: Includes processes such as cold calling, unsolicited requests, etc.

Skill Acquisition

On the Job: Training at the place of work, under the instruction of an experienced worker or trainer, during the course of actually performing the duties for which he/she was hired

Apprenticeship: Skilling by instruction or hands on experience under the guidance of a skilled worker, while under formal or informal indenture ship agreement

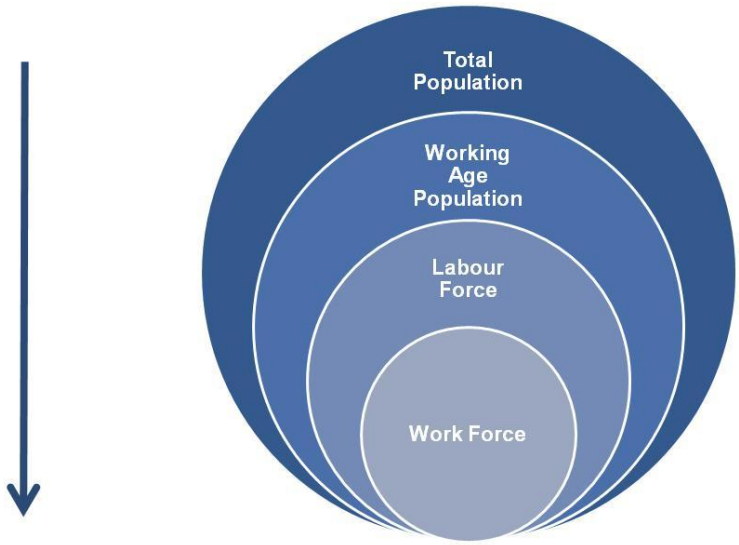
Formal Training: Skill acquisition by enrolment in a specialized workshop, programme or institution

Other: Skill acquisition via entrepreneurship, self learning, etc.

3.2 Quantitative Estimation of Human Resource Availability

The study population data, size of the working age population, Labor Force Participation Rate (LFPR) and Work Participation Ratio (WPR) to calculate the human resource availability in each district.

Figure 3.1: Estimation of Human Resource Availability

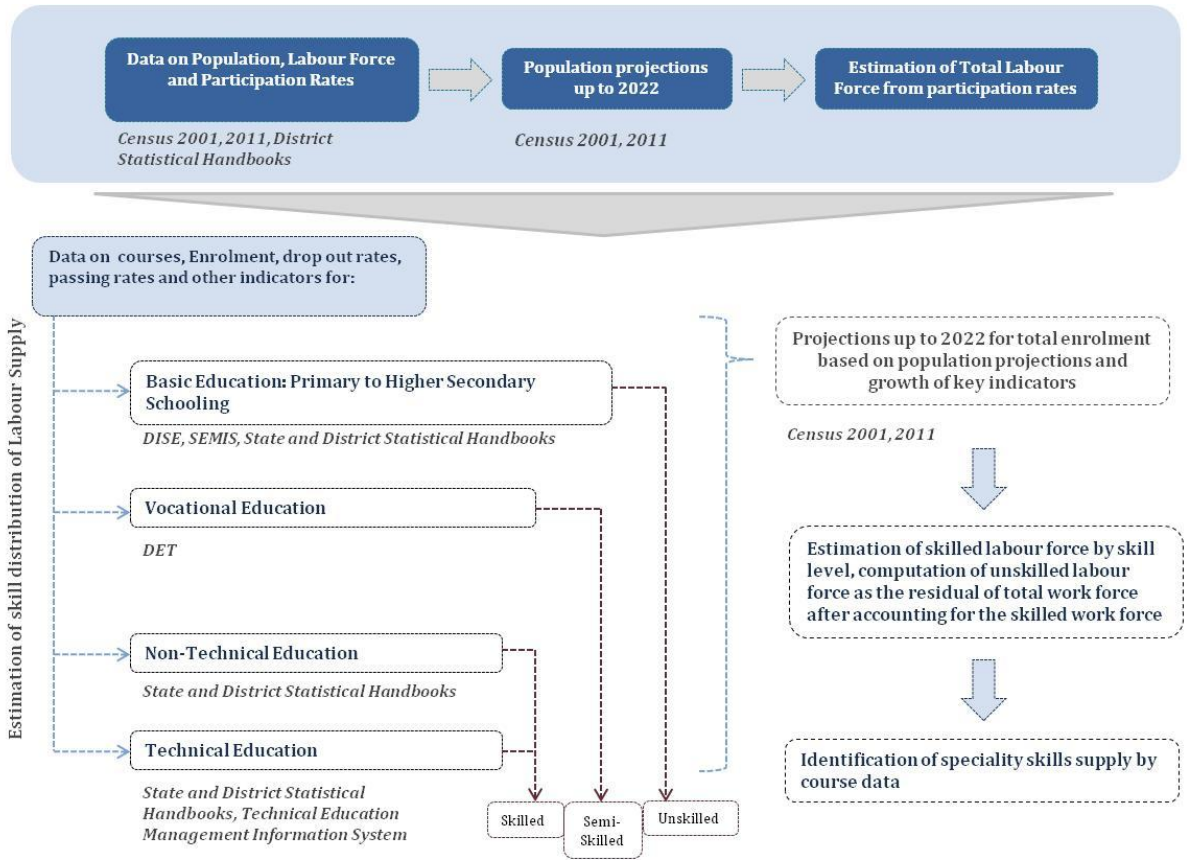


Human resource availability at different skill levels calculated using the following steps:

1. Calculate net inflow of new individuals, at different levels of educational attainment, for each year from 2012-17 and 2017-22
2. Adjust these figures for dropouts
3. Adjust the figure obtained in step 2 for passing percentages
4. Adjust the figure in step 3 for labor force participation rates to arrive at the net estimated addition to the human resource availability.

The relationship between education levels and skill levels is shown in Figure 2.2. The total availability of human resources at different skill levels is calculated by applying the above steps to each of the educational levels comprising that skill class.

Figure 3.2: Human Resource Availability Methodology



Source: Athena Research

3.3 Quantitative Estimation of Human Resource Requirements

For a particular industry, the expected human resource requirement is calculated by:

1. Assessing the size of the industry
2. Evaluating growth factors
3. Detailing the division of skills across the workforce

Table 3-1: Human Resource Requirement Estimation Methodology

Step	Description
1. Size of the industry	This relates to the total size of the workforce employed in the industry, its output and the labor elasticity of output
2. Division of Skills	The distribution of different skill levels across the workforce
3. Growth Drivers	Factors affecting the future volume and value of output, employability and productivity of an industry

Data was sourced for quantitative estimation of human resource requirements by industry through the following data sources.

Table 3-2: Data Sources and Methods

Step/Method	Central Government Data	State Government Data	Other Databases	Primary Research	Analytical Methods
Assessing Size	✓	✓	✓		✓
Skills Distribution	✓		✓	✓	✓
Growth Factors	✓	✓	✓	✓	✓

Human resource requirement estimates were made by calculating the compounded annual growth rates for different sectors, evaluating the labor elasticity of output growth, studying growth drivers and investment trends and assessing the need for workers at different skill levels in each sector. The following table describes the factors considered in the estimation of human resource requirement for each focus sector.

Table 3-3: Data Sources for Estimation of Incremental Human Resource Requirement by Sector

Sector/ Data sources	Data Sources	Factors considered in human resource requirement estimation
Agriculture	NSSO, TN Department of Evaluation & Applied Research	Historical GDP and employment trends, district level crop patterns and yields, number of workers
Automobile	ASI, DCMSME, SIAM	Historical trends, industry output, labor elasticity, contribution to GDP, expected investment, primary research insights
Chemicals & Pharmaceuticals	ASI, DCMSME	Historical trends, industry output, labor elasticity, contribution to GDP, expected investment, primary research insights
Electronics Hardware	ASI, DCMSME, SEZ India	Historical trends, industry output, labor elasticity, contribution to GDP, expected investment, primary research insights
Food Processing	ASI, DCMSME	Historical trends, industry output, labor elasticity, contribution to GDP, expected investment, primary research insights
Furniture	ASI, DCMSME	Historical trends, industry output, labor elasticity, contribution to GDP, expected investment, primary research insights
Gems & Jewelry	ASI, DCMSME	Historical trends, industry output, labor elasticity, contribution to GDP, expected investment, primary research insights
Handlooms & Handicrafts	Handloom Census, DCMSME	Historical trends, village and khadi units, primary research insights
Leather	ASI, DCMSME	Historical trends, industry output, labor elasticity, contribution to GDP, expected investment, primary research insights
Textiles	ASI, DCMSME	Historical trends, industry output, labor elasticity, contribution to GDP, expected investment, primary research insights
BFSI	NSSO, TN Department of Economics and Statistics	Historical trends in deposits, penetration of financial sector, expected growth, primary research insights
Construction	NSSO, TN Department of Economics and Statistics	Historical trends, contribution to district GDP, labor elasticity, primary research insights
Education	NSSO, District Information System for Education	Historical enrolment data, student-teacher ratios, population trends, education spending, primary research insights
Healthcare	NSSO, TN Department of Health	Estimated requirement of healthcare professionals, healthcare access, population trends, health spending, primary research
IT and ITES	NASSCOM, SEZ India	Historical trends, SEZs, existing firms, expected growth and primary research insights
Media & Entertainment	NSSO, Industry Reports	Media penetration, spending on media, expected growth, primary research insights

Organized Retail	NSSO, ICRIER, TN Department of Economics and Statistics	Historical trends, level of organization of retail markets, labor intensity, expected growth, primary research insights
Real Estate	NSSO, TN Department of Economics and Statistics	Historical trends, industry output, labor intensity, contribution to GDP, primary research insights
Tourism & Travel	Department of Tourism, NSSO	Historical tourist arrival trends, Department of Tourism targets and expected growth, primary research insights
Transportation & Logistics	NSSO, TN Department of Economics and Statistics	Historical trends, contribution to district GDDP, expected investment, employment patterns, primary research insights
Unorganized	NSSO, Industry Reports	Historical growth trends, size and composition of sector, primary research insights

3.4 Interviews and Field Surveys

250 field surveys and interviews were conducted to elicit information regarding the qualitative skill gaps faced in the state of Tamil Nadu. The target information sought from various stakeholders is given below:

Industry Experts

- Skills required for performing available jobs
- Relevance of existing skills to industry requirements
- Enablers of growth for the industry
- Sources of labor
- Perceived role in skill development

District and State Government

- Existing skill training infrastructure
- Policy initiatives
- Requirement for skills – industry and students
- Perceived role of various stakeholders in skill development
- Major industries in the district and labor composition

Non-Governmental Organizations

- Existing skill scenario
- Issues faced by students
- Community level initiatives
- Possible solutions

Skill Training Providers

- Problems faced by institutes
- Competition
- Frequency of training the trainers programs
- Financial model and costs

Unorganized Sector

- Information channels
- Skill requirement
- Sources of labor

The objective of the field surveys was to get insights into the education, information channels and subsequent skilling processes that employed and unemployed youth and workers in the unorganized sector undergo.

Further, the survey attempted to draw inferences from the differences in the responses of the employed and the unemployed respondents. The sample was chosen from four urban and three rural centres, in order to ensure a certain level of heterogeneity in responses. Respondents in the age group of 15-25 years were selected, and respondent profiles were controlled for extraneous factors. There were 104 respondents, of whom 50 were employed and 64 were unemployed. The survey aims to link skilling to the search and matching process, and highlight the differences between the experiences of those gainfully employed as opposed to those who are not.

3.5 Youth Aspiration Study

Behavioural economics shows that the decisions made by economic agents do not necessarily fit in the rational paradigm. This is particularly true of career decisions, which are made infrequently, without complete information. Moreover, the results of these choices are not immediate, which delays the learning and updating process. These factors may cause the youth to make choices that are not entirely representative of their aspirations.

Therefore, the study seeks to understand the:

- Factors that drive the aspirations of youth regarding career
- Relative importance of these factors

Focus Group Discussions (FGDs) were conducted for four cohort groups – employed, unemployed, vocationally educated and formally educated, in order to identify hard and soft factors that affect the career decisions of each cohort group. Hard factors are those that may form the basis of 'rational' decisions, e.g., financial returns to education, prestige associated with a certain industry, etc. Soft factors are behavioural factors that affect decisions, e.g., parental desires, peer pressure, etc.

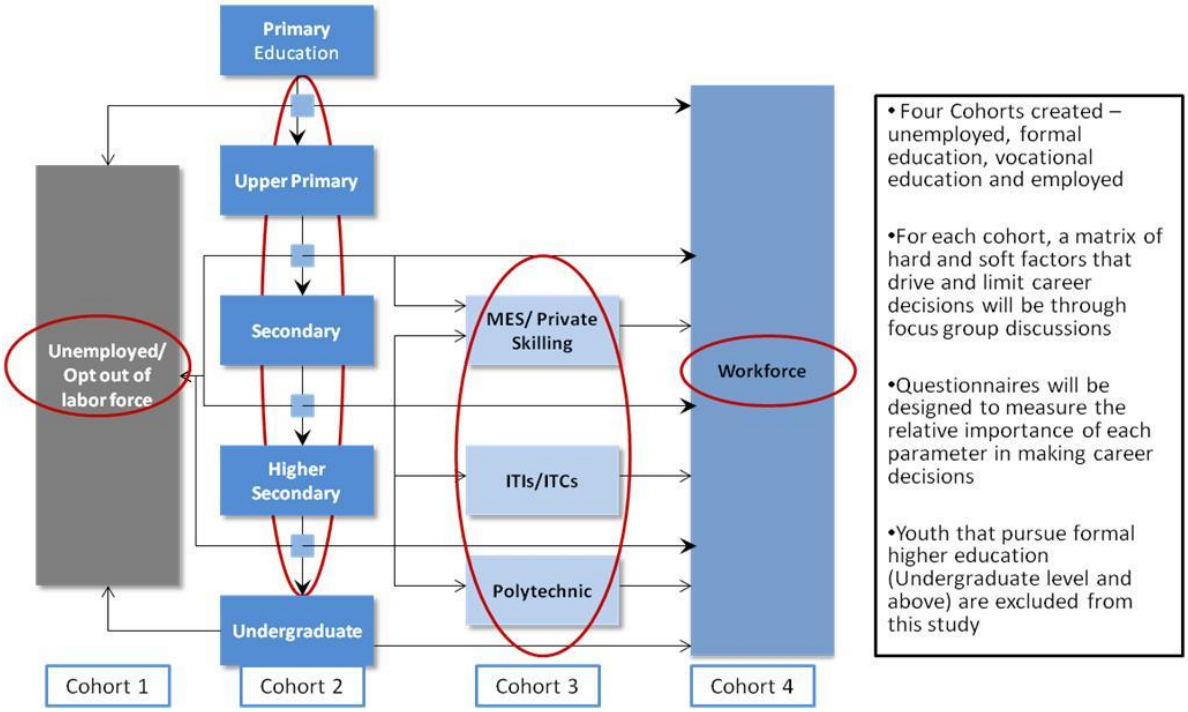
The FGD structure was informed by decision theory. The cohort approach not only solicits information on youth aspirations based on the participants' educational background, but also allows us to reduce the incidence of responses being modified on the basis of group expectations or non-response on account of feeling "left out" or intimidated by other FGD participants.

The FGDs were conducted in groups of 8-10. Participants were chosen from diverse backgrounds in terms of their districts of origin and socioeconomic background. The participants of each FGD were all of the same gender: therefore, 13 all-male FGDs and 12 all-female FGDs were conducted. The number of FGDs of each gender is based on the average sex ratio of the 12 chosen districts. The purpose of keeping people of different genders separate is to enable us to understand the need for gender-specific initiatives. From a research perspective, the rationale is that the proportion of participants of each gender in an FGD may influence the responses received from them.

The duration of each FGD was approximately be 60 minutes. Each FGD began with the same priming process for the participants: an introduction of the youth aspiration study and its purpose followed by an assurance of anonymity.

FGD questionnaires were translated into Tamil before conducting the discussions to ensure that the questions were put forth identically to each group. The results of the youth aspiration study were used to understand the requirement for skill development at various levels; the results also provided insights for our assessment of human resource availability for various industries.

Figure 3.3: Cohort Approach for Youth Aspiration Study



The purpose of the study, therefore, was to understand the requirement for skill development across skill levels and assess the level of interest in various industries. FGDs were conducted separately for each of the cohort groups mentioned above in order to assess the relative importance of each of these factors in decision-making and the nature of youth aspirations.

25 Focus Group Discussions (FGDs) were conducted in 12 districts for the youth aspiration study. In the first phase of the project, the districts were divided into high, medium and low categories based on state to district GDP (which helps determine the relative economic contribution of the district), working population (which serves as an indicator for the potential size of the labor force) and the enrolment ratio for Industrial Training Institutes (which is used as an indicator for the utilization of existing vocational training infrastructure). Further, the districts were assessed on the basis of their population density, per capita income, literacy and sex ratio to ensure that the chosen districts were diverse and provided a representative sample. The district selection also took account of the geographical spread of the districts. The following districts were chosen for conducting the FGDs:

Table 3-4: Selected Districts for the Youth Aspiration Study

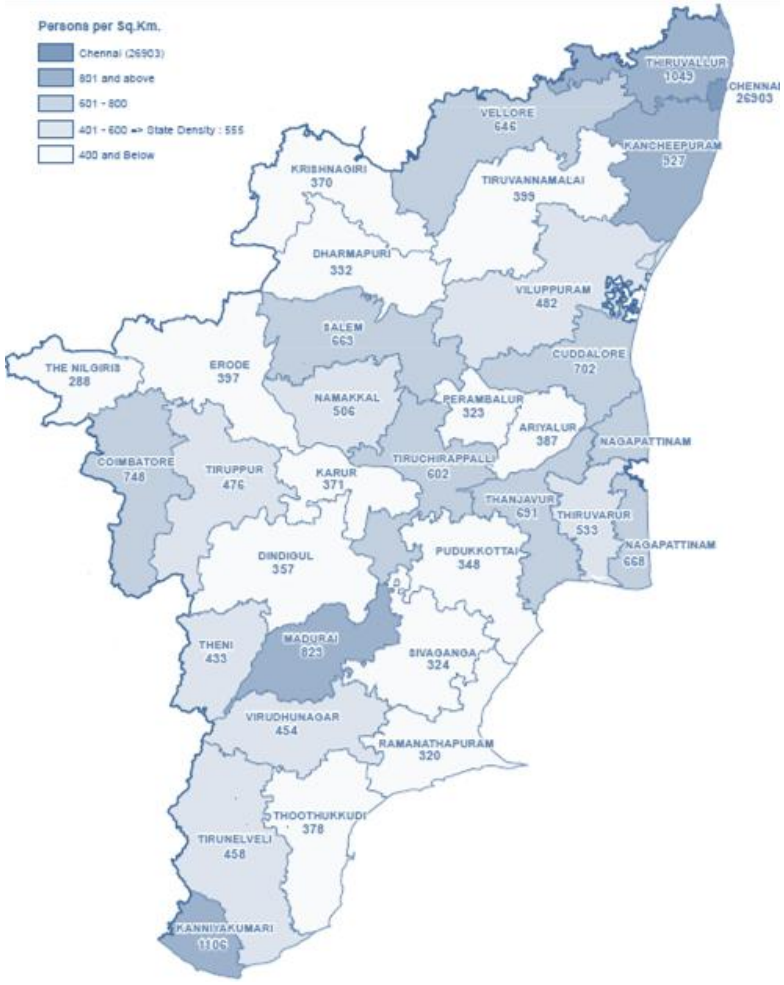
S. No.	District	State to District GDP	Working Age Population	Enrolment in ITIs	Population Density	Per Capita Income	Literacy	Sex Ratio
1	Madurai	H	H	H	H	H	H	M
2	Chennai	H	M	H	H	H	H	M
3	Erode	H	M	L	L	M	M	M
4	Vellore	H	L	H	M	H	H	H
5	Cuddalore	M	H	H	M	M	M	M
6	Nagapattinam	M	M	M	M	M	H	H
7	Kanniyakumari	M	H	M	H	L	H	H
8	Namakkal	M	H	L	M	M	M	M
9	Sivaganga	L	M	M	L	L	H	M
10	Dharmapuri	L	M	L	H	L	L	L
11	The Nilgiris	L	M	L	L	L	H	H
12	Perambalur	L	L	L	L	L	M	H

4 TAMIL NADU

4.1 Demographic Profile

With a geographic area of 1,30,058 square kilometres, Tamil Nadu is the eleventh largest state in India. It is bordered by Kerala in the west, Karnataka in the north-west, Andhra Pradesh in the north and Puducherry in the east. The state has a coastline of 1,076 kilometres along the Bay of Bengal.

Figure 4.1: Tamil Nadu: Population Density



Source: Census 2011

According to the 2011 Census, Tamil Nadu has a population of 7.2 crore. Accounting for 5.96% of the country's population, it is the seventh most populous state. About 9.6% of the population lies in the 0-6 age group. Tamil Nadu has a population density of 555 persons per square kilometre, significantly higher than the national average of 382 persons per square kilometre. Chennai has the highest population density at 26,903 persons per square kilometre, over 24 times the population density of the second most densely populated district, Kanniyakumari.

The decadal rate of growth of population in Tamil Nadu between 2001 and 2011 is 15.6%, which is higher than the corresponding figure for 1991-2001 of 11.7%, possibly due to the increase in inward migration. The birth

rate has seen some stabilization over time and the decadal growth of population has exhibited a downward trend since 1961. Over 48% of the population lives in urban areas.

4.2 Socioeconomic Profile

Tamil Nadu performs better than India on a number of socioeconomic indicators such as sex ratio and literacy.

Table 4-1: Socioeconomic Profile of Tamil Nadu in 2011

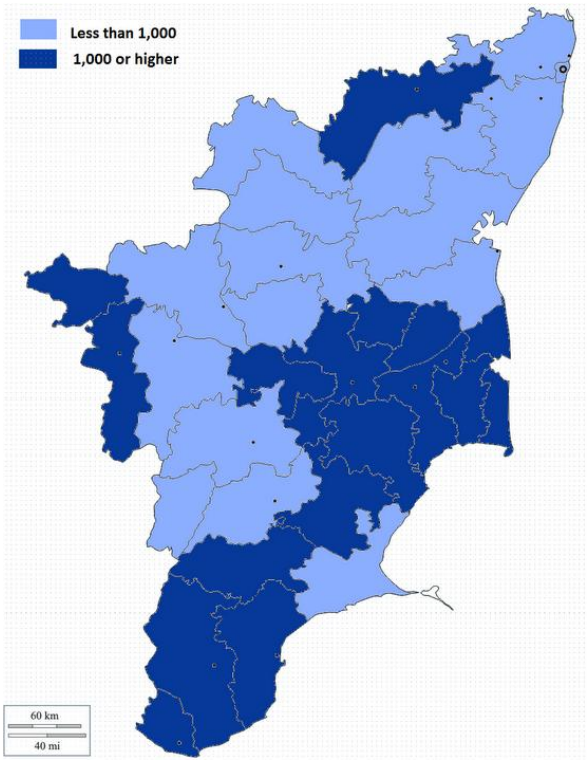
Socioeconomic Indicator	Tamil Nadu	India
Population	7,21,38,958	1,21,01,93,422
Population Density (per sq km)	555	382
Sex Ratio	995	940
Literacy	80.33	74.04
Male Literacy	86.81	82.14
Female Literacy	73.86	65.46

Source: Census 2011

4.2.1 Sex Ratio

According to the Census of India (2011), Tamil Nadu's sex ratio is 995 females per 1,000 males, well above the national average of 940 females per 1,000 males. In 2001, the sex ratio was 987 females per 1,000 males. However, there is wide variation across districts, with Dharmapuri having a sex ratio of 946 while The Nilgiris has a ratio as high as 1,041 females per 1,000 males. 15 of the 32 districts in the state have sex ratios above 1,000. There has been significant variation in the relative performance of the districts between 2001 and 2011. When classified on the basis of the sex ratio, 12 of the 32 districts have shown a change of more than four ranks over the decade.

Figure 4.2: Tamil Nadu Sex Ratio across Districts in 2011

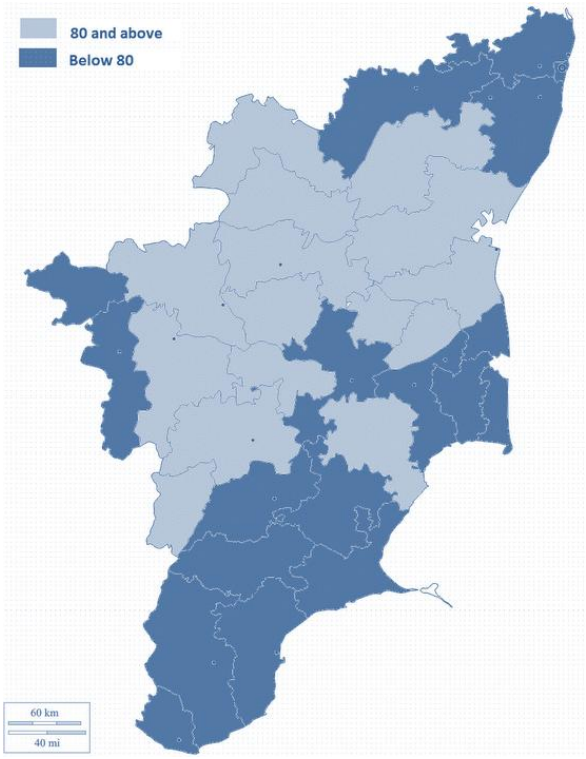


Source: Census (2011)

The child sex ratio (number of female children per male children in the 0-6 age group) is higher than 950 for 18 districts. This ratio has shown a decline for 14 districts since 2001. For Cuddalore and Ariyalur, the decrease in the child sex ratio between 2001 and 2011 has been more than 25 females per 1,000 males.

4.2.2 Literacy

Figure 4.3: Tamil Nadu Literacy across Districts in 2011



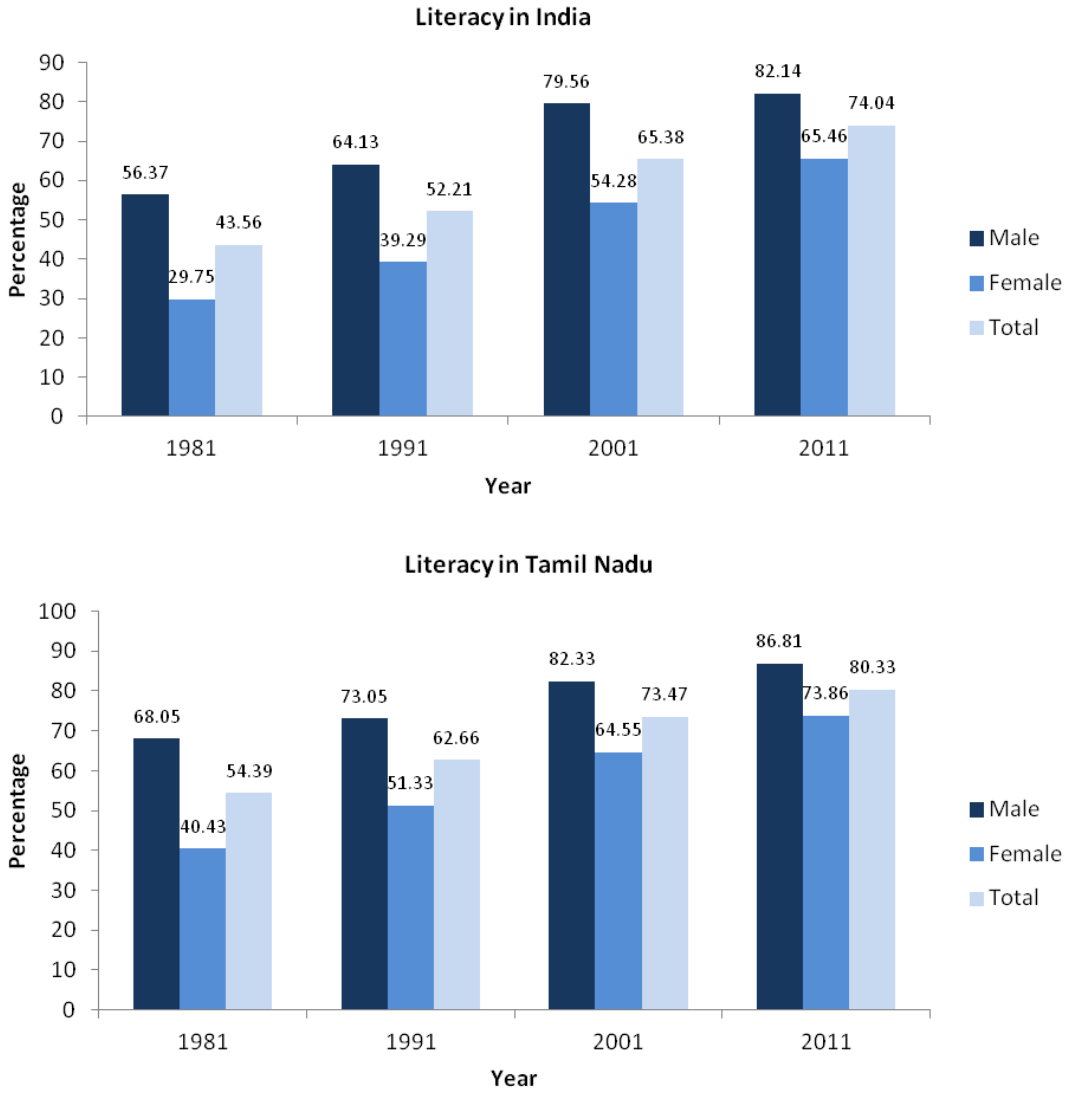
Source: Census (2011)

Significant progress has been made in the field of education with the literacy level showing a marked improvement. The proportion of literates in India in 2011 was 74%. In Tamil Nadu, the literacy rate rose from 73.45% in the 2001 Census to 80.33% in the 2011 Census. In the working age population (15-59 years), 25% have no formal education, and 7% of this population comprises graduates and post graduates.

Historically, the literacy rate in Tamil Nadu has remained above the national average. At 73.86%, female literacy is significantly higher for Tamil Nadu than the country average of 65.46%. With the exception of Dharmapuri, male literacy is above 75% in all the districts. At 92.14%, Kanniyakumari has the highest literacy rate followed by Chennai, Thoothukkudi, The Nilgiris and Kancheepuram.

However, there is a considerable gender gap in literacy across districts. The average gender gap in literacy for Tamil Nadu is nearly 13%. The gap is less than 10% only for five districts: Kanniyakumari, Chennai, Dharmapuri, Madurai and Thoothukkudi. Kanniyakumari has the lowest gender gap in literacy, at slightly above 3%. Perambalur has a variation of almost 20% in literacy across genders.

Figure 4.4: Historical Literacy Rates



Source: Census 2011

4.3 State of Education

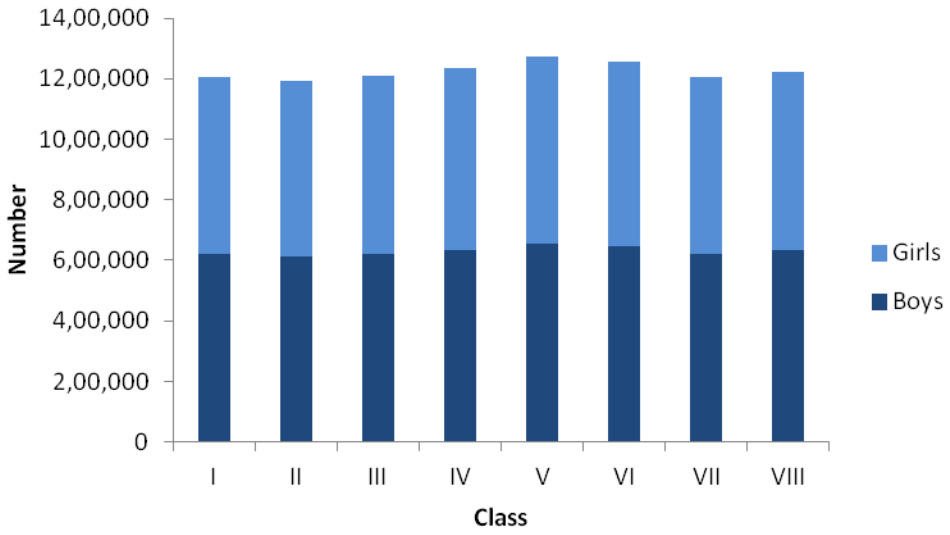
Table 4.2: Education Infrastructure in Tamil Nadu in 2010

Institution	Number	Capacity	Enrolment
Primary Schools	34,871	62,17,720	61,16,793
Middle Schools	9,969	38,58,974	36,80,471
High Schools	5,167	28,40,569	23,08,530
Higher Secondary Schools	5,660	16,39,677	15,03,033
Arts & Science Colleges	633	9,70,009	7,35,407
Polytechnics	351	1,64,575	1,18,340
Engineering Colleges	491	1,95,324	1,62,231
ITIs, ITCs and other Registered Training Institutes	1,747	2,19,494	1,53,646

Source: Sarva Shiksha Abhiyan, Department of Employment and Training, Department of School Education (2011)

The structure of school education in Tamil Nadu comprises four levels – primary (Classes I to V), middle school (Classes (VI to VIII), secondary (IX and X) and higher secondary (XI and XII). 99% of Tamil Nadu's population has access to primary education, and the infrastructure for formal education is relatively well-developed across the state. Primary research suggests a high preference for formal education among the youth as well as their parents due to its association with service sector jobs and higher compensation.

Figure 4.5: Class-wise Enrolment

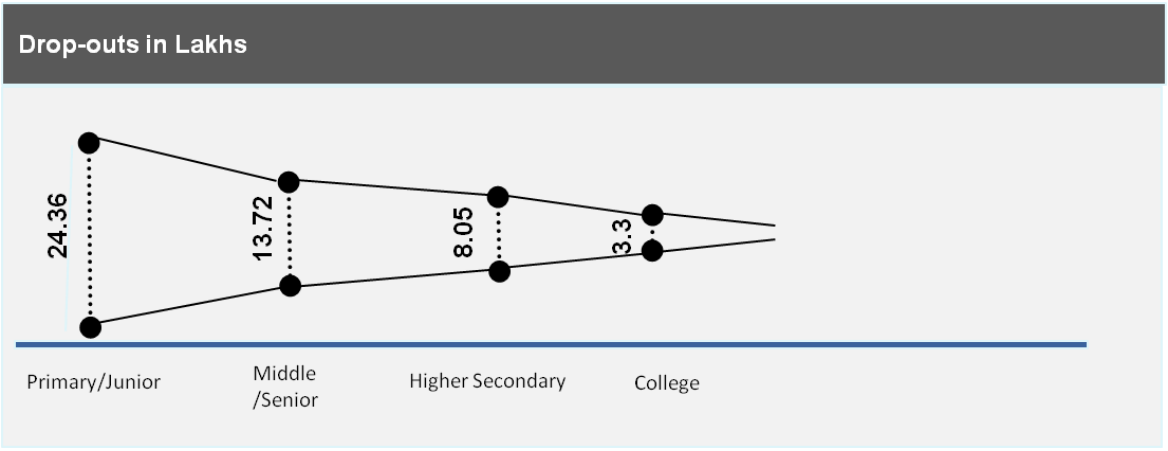


Source: Sarva Shiksha Abhiyan 2011

In primary school, over 48% of the total students enrolled are girls, indicating relatively low socio-economic constraints towards educating girls. The completion rate at the primary level is quite high, over 97%. The completion rates are slightly lower for SCs and STs at 96.84% and 92.08% respectively. The completion rate for

middle school is 93%. However, enrolment and completion rates are much lower for higher secondary school. Limited access and financial constraints often act as deterrents to higher education in the state.

Figure 4.6: Drop-out Rate in Tamil Nadu



Source: Sarva Shiksha Abhiyan, Department of Employment and Training, Department of Higher Education (2011), Athena Research

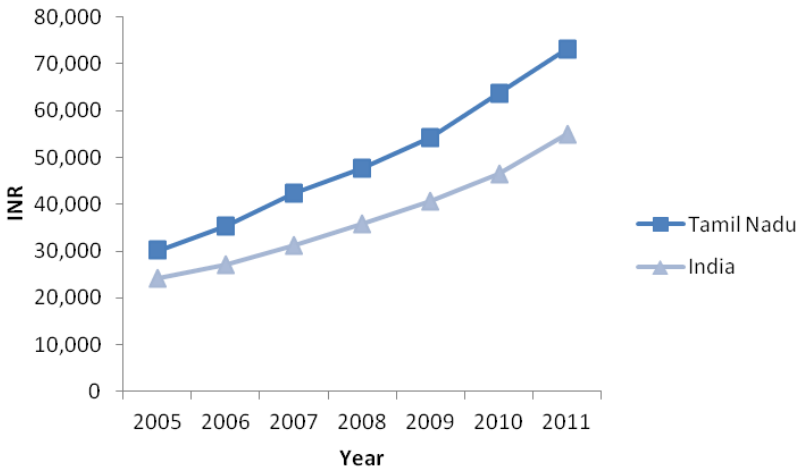
A total of 61 lakh students enter primary school each year. 58 lakh continue to pursue formal education at the middle school level. However, there is a steep drop thereafter, with only 11.8 lakh students entering higher secondary education and 3.7 lakh students enrolling in college.

Relative to the population of each district, the per capita educational infrastructure is higher for less densely populated districts such as Perambalur, Pudukkottai, Ramanathapuram and Sivaganga, while it is low for Kanniyakumari, Thiruvallur, Kancheepuram and Chennai. This may be indicative of the need for greater provision of public goods to ensure access to all sections of the population in districts with lower population densities.

In absolute terms, Vellore and Coimbatore have the highest total number of schools. Coimbatore also has the highest number of teachers among the districts. However, DISE statistics suggest that there are over 3,000 localities without school access in districts such as Coimbatore, Dindigul, Kancheepuram, Krishnagiri, Pudukkottai, Thiruvallur and Tiruvannamalai. Per capita school availability exhibits low negative correlation with the total district area. The distribution of schools across districts is depicted in the figure below.

4.4 Economy

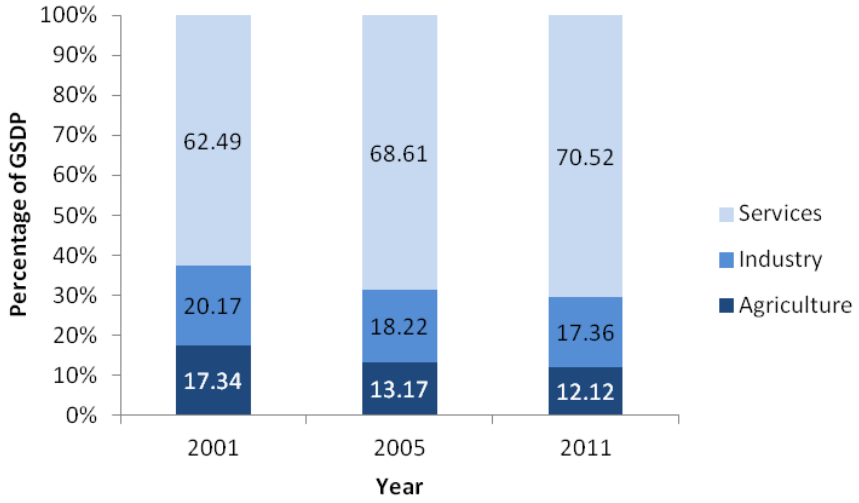
Figure 4.7: Tamil Nadu: Per Capita Income



Source: Press Information Bureau, Government of India (2011)

Tamil Nadu's growth trajectory is similar to the national economy, with the state witnessing robust growth over the past five years. The secondary and tertiary sectors have been the primary drivers of growth. According to Reserve Bank of India (RBI) statistics, Tamil Nadu's NSDP was Rs. 5.69 lakh crore in 2011-12, approximately 7.72% of the India's NDP. The state economy showed robust growth at 12.5% in 2011-12. The tertiary sector had the highest growth rate of 12%, followed by the secondary sector with 7% and agriculture, which grew at 4.2%. Over 60% of the state's income was generated by the tertiary sector, while the secondary sector accounted for 25.8%.

Figure 4.8: Sectoral Composition of GDP in Tamil Nadu



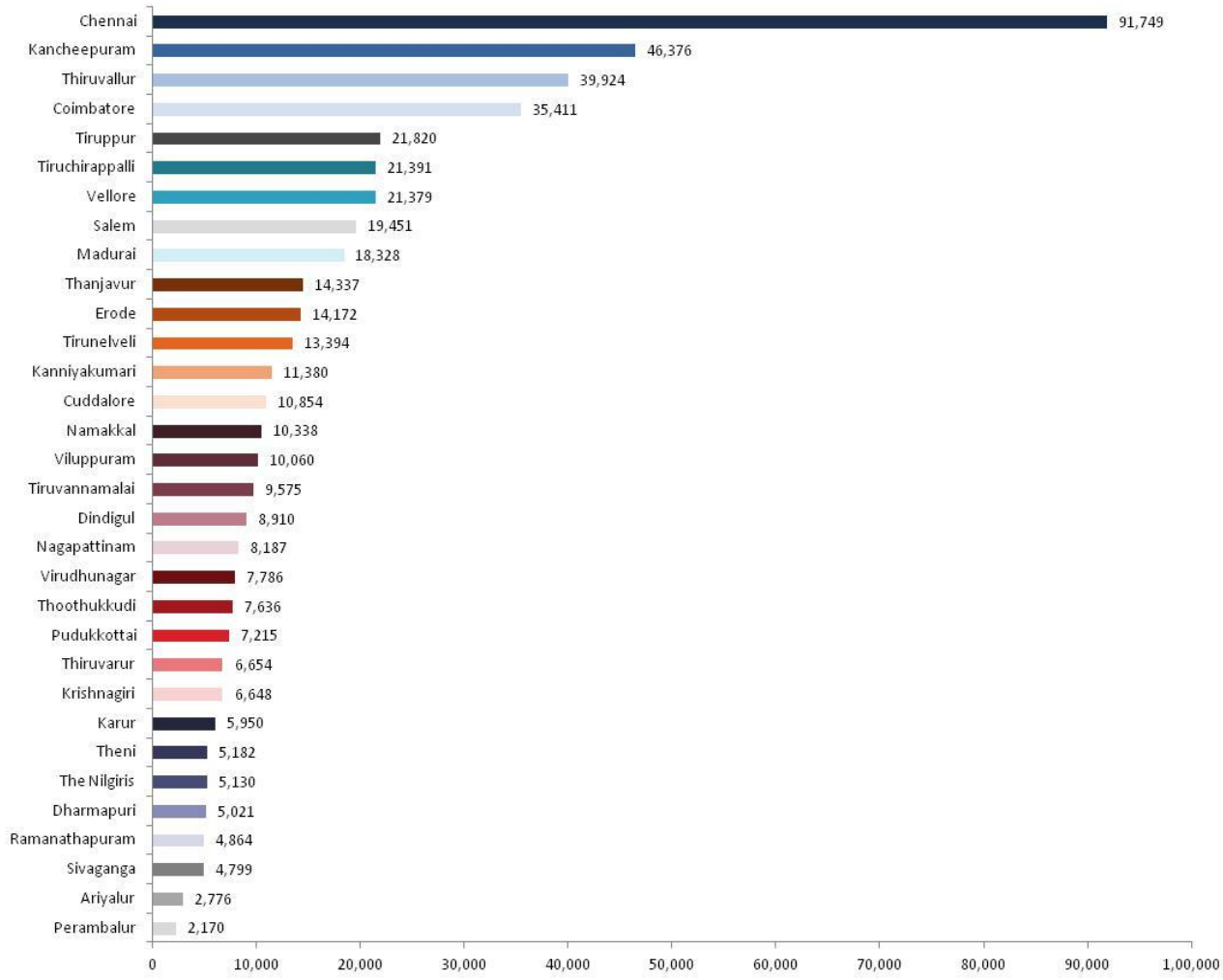
Source: Handbook of Statistics on Indian Economy, Reserve Bank of India & Tamil Nadu Vision 2023 (2011)

Strong economic infrastructure in the form of a well-connected road and rail network along with multiple ports and airports to facilitate multimodal transport have led to Tamil Nadu's growth as an industrial hub. The

development of industrial parks and incentives for MSMEs has also encouraged the growth of industry in the state. The major industries in Tamil Nadu are automobile, engineering goods, textiles, food processing, chemicals, leather, minerals, electronics and software.

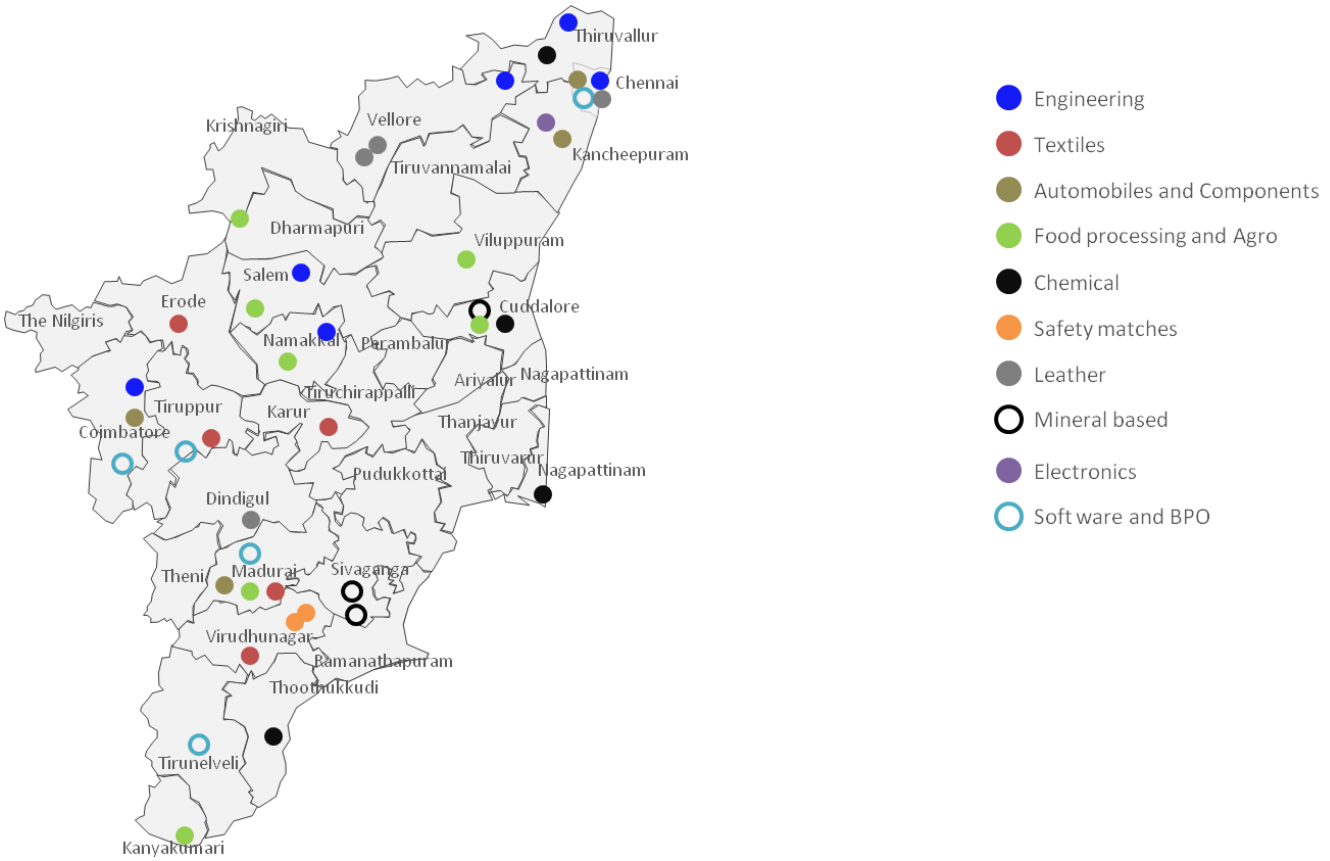
The district-wise split of GDP data shows that Chennai's GDP is far higher than the other districts in the state of Tamil Nadu: nearly six times the state average. The top four districts of the state in terms of GDP are Chennai, Kancheepuram, Thiruvallur and Coimbatore – account for 42.8% of the state's GDP. Ariyalur and Perambalur have the lowest contribution to district GDP.

Figure 4.9: District GDP in INR Crore in 2011



Source: Indicus Analytics Market Skyline of India (2011)

Figure 4.10: Industrial Clusters in Tamil Nadu (2009)



Source: Department of MSME (2009)

Tamil Nadu is India's most urbanized state. A number of industrial clusters have emerged in the state. Sriperumbudur is one of India's largest electronics clusters while Chennai is the largest auto components hub in India. Vellore has a high presence of leather industries. Tiruppur houses a large textile cluster. Heavy industries have emerged in districts such as Coimbatore, Tiruchirappalli and Salem. Agriculture also contributes to the state GDP with Tamil Nadu being a large producer of rice, mango, banana, tapioca and natural rubber. This has driven the growth of the food processing industry, particularly along the Madurai-Dindigul belt. Between 2004-05 and 2011-12, Tamil Nadu's GSDP has grown at a Compounded Annual Growth Rate (CAGR) of 15.3%. Engineering goods and electronic goods are the state's two largest exports; together, they accounted for nearly 50% of all exports in 2011-12.

Engineering: The engineering clusters, primarily concentrated around Chennai, Thirvallur, Vellore, Coimbatore, Thiruchirappalli and Salem, consists of both, heavy engineering such as equipment for the transport and power industries, and light engineering in the form of electronics for IT and healthcare. These clusters have played a key role in diversifying the manufacturing process. The encouragement of small scale industrial units, particularly in Vellore and Dindigul, has led to an expansion in the scope of activities envisaged through sharing common facilities, enabling the development of alternative growth strategies for the industry as a whole.

Textiles: Tiruppur forms the focus of a large textile cluster. The textile sector also has an important presence in sectors such as Chennai and Erode, where readymade garments are manufactured; as well as Kancheepuram and Madurai, which are known for their traditional fabrics and cooperative spinning industries. However, since 2010, the textile industry has grappled with dwindling market demand and power shortages, affecting

productivity and profitability in the sector. Incentives such as the reduction of taxes have been take to help the textile industry regain its global competitiveness.

Automobiles and Components: With a presence in Chennai, Kancheepuram, Coimbatore, Madurai and Sivaganga, the automobile industry is one of the most important industrial subsectors in Tamil Nadu. Maritime connectivity has enhanced the attractiveness of Tamil Nadu as a manufacturing and assembling centre for international players. However, congestion problems at ports, the unavailability of power and increasing human resource costs threaten the competitiveness and sustainability of growth in this sector.

Food Processing: A large number of small players have entered the food processing industry in the Madurai-Dindigul belt, forming an industrial cluster. Krishnagiri, the leading producer of mango pulp, is an emerging cluster. Kancheepuram and Tiruvannamalai have a growing number of rice mills. The development of these clusters has not only provided employment to many, but also provided a ready market for agricultural produce in these districts. With the exception of a few large players, most of the players in this sector are unorganized. SIPCOT initiatives have been successful in mobilising resources and encouraging small enterprises to be formally registered. The Directorate of Agricultural Marketing and Agri-Business is the nodal agency for the food processing industry in the state. Export promotion assistance is also offered to players in this sector.

Chemical: Tamil Nadu has a strong presence in the chemical industry, although the sector has been showing lower levels of growth in recent years. The state is a major exporter of basic chemicals and other chemical products. Chemical industries are clustered in Chennai, Cuddalore, Nagapattinam and Thoothukkudi, with manufacturing facilities for fertilizers, paints, carbon black, pesticides, pharmaceuticals, polymers, caustic soda and soda ash. Greater policy incentives can help revive growth in the sector.

Leather: Dominated by small players, the leather industry clustered around Vellore is one of the most labor-intensive sectors in the state. A large number of women are employed in this sector. Tamil Nadu accounts for a majority of leather tanning capacity in the state. Leather exports from Tamil Nadu account for a major chunk of the country's total leather exports. The non-availability of water, erratic power supply and dwindling human resource availability has raised the cost of production for the industry, eroding its competitive advantage.

Electronics: The electronics industry has shown tremendous growth potential, particularly in the production of semiconductor, electronic hardware and nanotechnology. The electronics cluster has grown in Chennai and Kancheepuram due to the favourable investment climate and access to multimodal transport. The steady market demand for electronic equipment growth and exports has facilitated expansion.

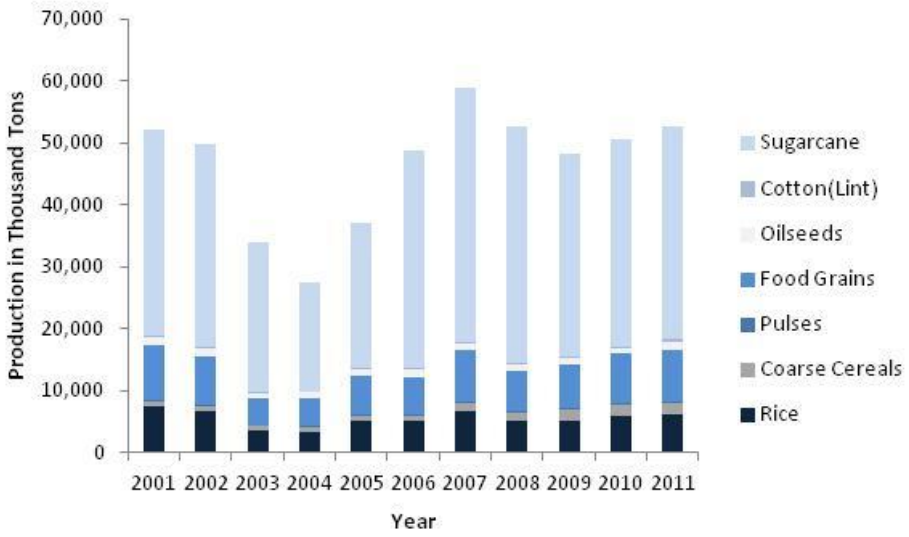
Software and BPO: While the software and BPO sector was originally concentrated around Chennai and urban agglomerations in the region, the sector has begun to establish base in districts such as Coimbatore, Thiruchirappalli, Madurai and Tirunelveli. The state government's favourable industrial policies for the IT sector, ready availability of skilled human resources and strong IT infrastructure have created conducive growth conditions for the software and BPO sector in Tamil Nadu. A number of multinational firms are operating in this space due to the availability of skilled human resources. Over 50% of all software exports from Tamil Nadu are made to USA. Power problems, however, threaten the sustenance of growth in this industry.

4.4.1 Agriculture

While the contribution of agriculture to the state economy has steadily declined over time, agriculture and allied activities continue to provide employment for a majority of the population. The net sown area as a percentage of total area is approximately 38%, lower than the national average of 46%. The districts with the highest net sown area (as a percentage of geographical area) are Thiruvarur, Nagapattinam, Cuddalore, Ariyalur and Perambalur.

Of the total cropped area, 73.6% is under food crops. Tamil Nadu is one of India's largest producers of rice. Of the gross area sown, nearly 33% is under paddy. Millets and pulses, together, account for over 20% of the sown area. Other major crops include sugarcane, rubber, coconut, groundnut, coffee and tea. Tamil Nadu contributes nearly 10% of the country's total sugarcane production.

Figure 4.11: Composition of State Agricultural Output



Source: Handbook of Statistics on Indian Economy, Reserve Bank of India (2011)

The state has a variety of ecological regions with varying climate conditions. Tamil Nadu is divided into seven agro climatic zones: Western, Southern, North Eastern, North-Western, Delta, High Rainfall, and Hilly and Tribal zones.

In order to raise productivity in the agriculture sector, the state has implemented a host of schemes, notably, intensive integrated farming system, farm mechanization, Wasteland Development Program, watershed development, micro irrigation systems for water management, organic farming and bio-fertilizers to improve soil, integrated pest management and the encouragement of precision farming, crop diversification and waste minimization. Under the Tamil Nadu Agro and Agro Processing Policy, 2008, income tax rebates and priority lending from banks are made available to the sector. The state's yield per hectare for crops such as sugarcane, coconut, tapioca and banana is one of the highest in the country.

Variation in rainfall is one of the major challenges faced by the agriculture sector. In 2011, actual rainfall was 10.28% higher than actual rainfall. Medium and minor irrigation schemes have been implemented for augmenting irrigation for agriculture. The net area irrigated constitutes 56.8% of the net sown area in the state. Open wells and government canals are the two largest sources for irrigation in the state. The use of tanks and

tube wells is also increasing. Of the total irrigated area, 52.9% is under paddy, 9.1% under sugarcane and 4.8% under groundnut. [1]

4.4.1.1 Horticulture

Horticulture crops are cultivated in an area of 11.08 lakh hectares with an annual production of 202.64 lakh million tons. The main fruit crops are banana and mango, while the main vegetables are tomato, onion, eggplant, drumstick and tapioca. The state also ranks first in the production of flowers in the country.[2]

Table 4.3: Leading Districts for Fruit Production in Tamil Nadu

Fruit	Main Production Areas
Banana	Thiruchirappalli, Thoothukkudi, Tirunelveli, Pudukkottai, Thanjavur
Mango	Krishnagiri, Vellore, Dindigul, Theni, Dharmapuri, Madurai
Sapota	Tirunelveli, Erode, Karur
Grapes	Theni, Coimbatore
Guava	Madurai, Dindigul, Vellore, Virudhunagar
Aamla	Tirunelveli, Sivaganga, Thoothukkudi, Coimbatore, Dindigul, Erode

Source: Statistical Handbook, Department of Economics and Statistics, Government of Tamil Nadu (2012)

Table 4.4: Leading Districts for Vegetable Production in Tamil Nadu

Vegetable	Main Production Areas
Tapioca	Namakkal, Salem, Dharmapuri
Drumstick	Thoothukkudi, Dindigul, Karur
Tomato	Coimbatore, Dharmapuri, Salem, Krishnagiri
Onion	Perambalur, Thiruchirappalli, Namakkal, Dindigul
Brinjal	Vellore, Kancheepura, Theni, Coimbatore
Cabbage	The Nilgiris, Krishnagiri, Dindigul
Potato	The Nilgiris, Dindigul
Okra	Kancheepuram, Vellore, Dindigul

Source: Statistical Handbook, Department of Economics and Statistics, Government of Tamil Nadu (2012)

About 5% of the total sown area is devoted to spices such as chilli, garlic and tamarind. The average yield per hectare for the state is significantly higher than that of other agricultural states. The improving performance of this sector has given rise to a growing food processing industry in the state.

While Tamil Nadu has immense agricultural and horticultural potential on account of high yields, favourable climatic conditions for growing a variety of crops and expanding irrigation systems, most of the agricultural activity carried out in the state is unorganized.

4.4.1.2 Animal Husbandry

The bovine population state has witnessed a steady decline over the past decade, while the goat and poultry population has risen. The total livestock population in the state is 3.07 crore while the total poultry is estimated

[1] Season and Crop Report: Tamil Nadu, Department of Economics and Statistics (2009-10)
[2] Performance Budget, Agriculture Department, Government of Tamil Nadu (2012-13)

to be 12.81 crore.[3] Tirunelveli, Thoothukkudi, Pudukkottai, Erode and Villuppuram have the highest livestock population while Coimbatore, Namakkal, Vellore and Dharmapuri have the highest poultry population.

The poultry sector has shown impressive growth with the introduction of scientific techniques through new strains, immunization and the California Cage System. Annual egg production is estimated at 1,151 crore, with Namakkal and Erode being the leading producers.

Tamil Nadu was ranked ninth in milk production in the country. Tirunelveli, Salem and Tiruvannamalai are the leading producers of milk in the state. Small and marginal farmers constitute a majority of the milk producers. The Tamil Nadu Co-operative Milk Producers Federation Limited produces milk and milk products under the brand name 'Aavin'. The government has encouraged scientific breeding practices to improve milk yield. In terms of dairy development, the state has 16 union dairies and four federation dairies. The average daily milk collection is 22.35 lakh litres per day.[4]

Tamil Nadu has 138 veterinary hospitals, 1,207 veterinary dispensaries and 22 clinician centres.

4.4.1.3 Fisheries

With a coastline of 1,076 kilometres, 13 coastal districts and 25 coastal blocks, fisheries constitute an important part of economic activity in Tamil Nadu. 591 marine fishing villages produce an estimated 4.24 lakh tons of marine fish, accounting for over 70% of the state's toital fish production. About 1.71 lakh tons of inland fish are also caught each year.[5]

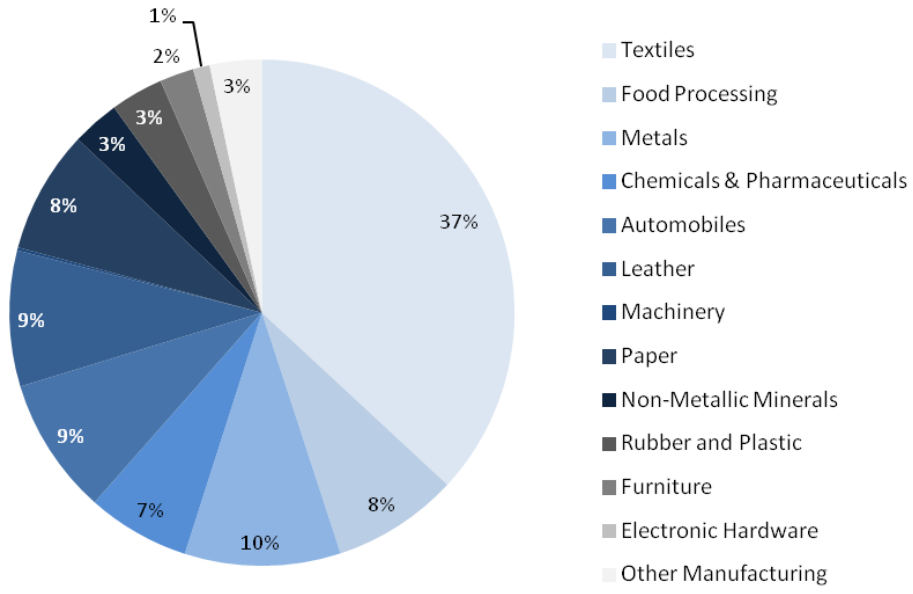
Fishery resources include 1.9 lakh square kilometres of Exclusive Economic Zone (EEZ) and a continental shelf of 41,412 square kilometres. In 2008, the Fisheries Development Mission was implemented in select pockets of Ramanathapuram, Nagapattinam, Thanjavur, Pudukkottai and Thoothukkudi. Ramanathapuram is the largest producer of fish, contributing for over 20% of total fish production in the state, followed by Nagapattinam, Thiruvarur, Thanjavur, Thoothukkudi, Kanniyakumari and Chennai. Together, these six districts account for more than 60% of the state's fish production. A significant portion of the fishing activity is small-scale and unorganized.

[3] 18th Livestock Census 2007, Department of Animal Husbandry and Veterinary Sciences
[4] Statistical Handbook of Tamil Nadu, Department of Economics and Statistics (2011)
[5] Ibid.

4.4.2 Industry

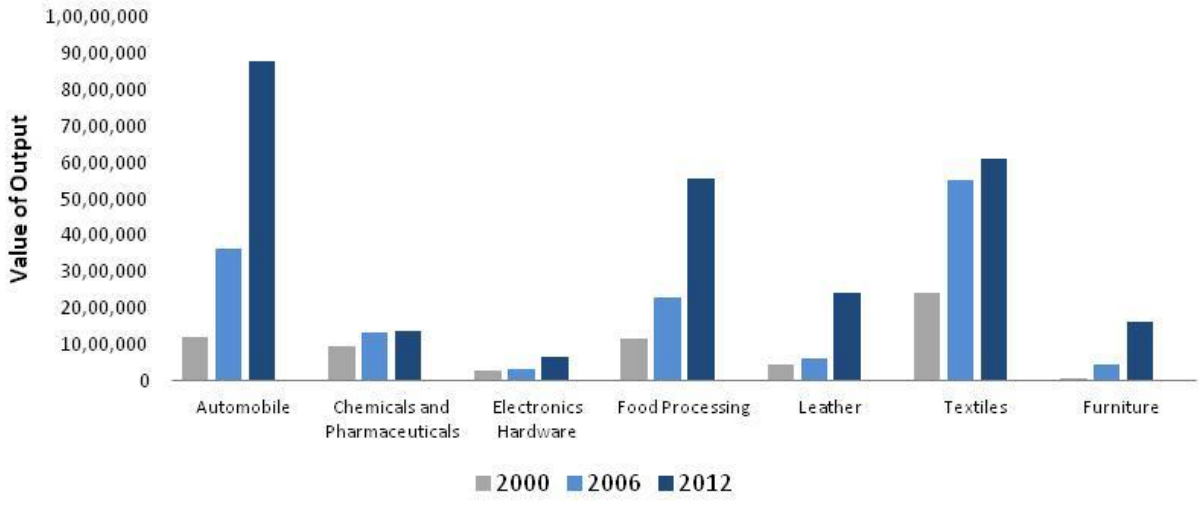
The textile industry is one of the largest employers in the state of Tamil Nadu. Automobile is a prominent manufacturing sector in the state with production clustered around Chennai. Tamil Nadu accounts for over 35% of total auto manufacturing in India. The leather industry, clustered around Vellore, is one of the most labor-intensive manufacturing sectors. The following figure depicts the share of organized manufacturing in different subsectors of the economy.

Figure 4.12: Organized Sector Employment in Manufacturing by Subsector



Source: Annual Survey of Industries, Athena Research (2012)

Figure 4.13: Growth of Output in Manufacturing Subsectors in Tamil Nadu



Source: Annual Survey of Industries, Athena Research (2012)

Sectors such as automobile and electronic hardware have seen phenomenal growth over the past decade, as illustrated by the figure below. The textile industry grew significantly between 2001 and 2006. However, the fall

in export demand led to a sharp decline in industrial growth in 2007. Industrial growth has seen a gradual revival over subsequent years. This section provides a profile of the major industries in Tamil Nadu.

4.4.2.1 Chemicals and Pharmaceuticals

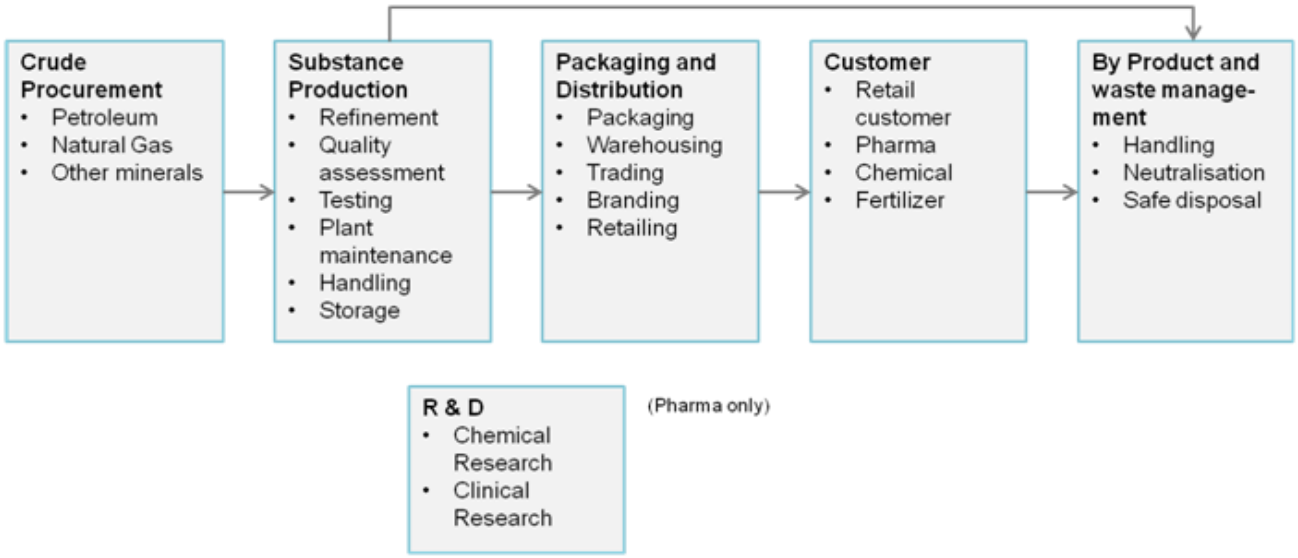
Introduction: The Indian chemical industry is the 6th largest in the world and manufactures more than 70,000 chemicals. It currently contributes 14% of the domestic industrial activity and 3% of the national GDP. The Indian pharmaceutical industry is renowned to be one of the world's largest and most developed industries and is expected to play a key role in shaping the future of the Indian economy. Tamil Nadu has the fourth largest concentration of chemical industries and offers great potential for biotechnology due to its diverse natural resources and human resources.

The major sub sectors in the chemical industries include Petrochemicals, Organic Chemicals, Alkali Chemicals, Inorganic Chemicals, Pesticides, Fertilizers and Dye and Dyestuff. These chemicals are used across various industries as intermediaries including textile, construction, agriculture, automotive, etc. So the overall growth in the manufacturing and agricultural sector is a key growth driver for the chemical industries. The main strength of the Indian pharmaceutical companies lies in generic drug production. The government policy on patents has allowed Indian companies to develop reverse engineering techniques to produce generic drugs. Most of the drugs available in the domestic market are generic. Increased spending on health is the main demand driver for pharmaceuticals sector. The increased government expenditure on improving life expectancy, reducing disease burden and child mortality have contributed to the growth of the pharmaceuticals industry.

Tamil Nadu has manufacturing facilities for fertilizers, paints, carbon black, pesticides, pharmaceuticals, organic and inorganic chemicals. There are three main industrial clusters for chemical and petrochemical production: Manali in Chennai, Cuddalore and Thoothukkudi. The proposed PCPIR in Cuddalore will also boost industrial development. The port in Chennai and Tuticorin provides the exporters in the industry additional advantages. Saint Gobain has established 2 float glass plants in Sriperumpudur, and Asahi, Japan has also established a facility for making automotive glass. Chennai is emerging as the largest glass hub in the country. This is due to excellent transport logistics, including major ports, airports, presence of oil companies and attractive investment incentives.

Value Chain: The value chain in the chemicals and pharmaceuticals industry begins with the procurement of petroleum, natural gas and other minerals. Raw materials are refined, tested and stored. By-products and waste materials need to be handled and disposed. The packaging, warehousing, trading and retailing of products is the next step in the value chain. Retailing is the last component, with components like pharmaceuticals, chemical fertilizers, etc. reaching the retail consumer.

Figure 4.14: Value Chain in the Chemicals and Pharmaceuticals Industry



Source: Athena Research

4.4.2.2 Electronics and Hardware

Introduction: The domestic market for electronic products in India touched $28.2 billion in 2005 and is expected to reach $363 billion by 2015. Personal computers, notebooks and servers constitute bulk of the hardware spends, resulting in impressive volume growth in this segment.

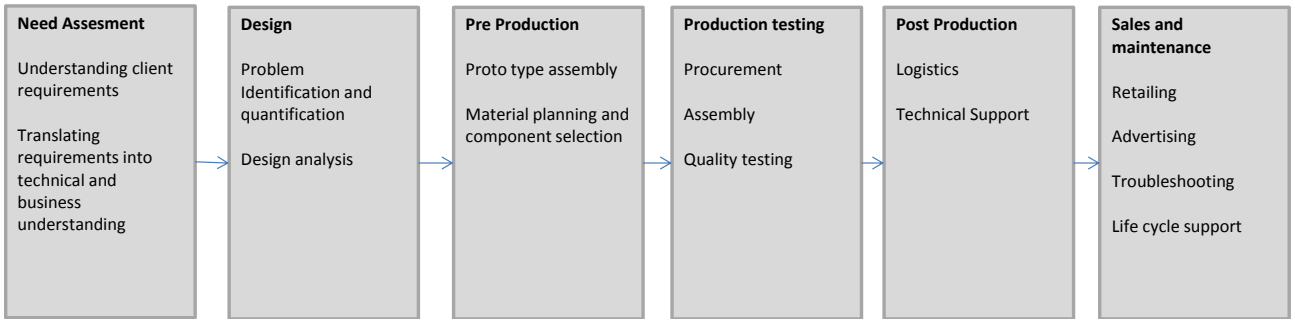
Chennai has emerged as the largest electronic hardware manufacturing and exporting hub in India. Some of the Fortune 500 companies that have set up facilities in Chennai include: Nokia, Motorola, DELL, Samsung, Foxconn, Flextronics and Nokia-Siemens, among more than 30 component suppliers. The Nokia plant in Chennai is reportedly the world's largest mobile handsets manufacturing project, beating China, as the cost of manufacturing is cheaper by over 11% in NPV terms, making Nokia India's largest exporter of electronic hardware. This is due to the ready availability of skilled human resources in the field of automobile engineering. The state also comes with excellent airport and sea port logistics facilitating easy import of components.

The state has taken several steps in facilitating further growth of the industry such as developing an attractive package of incentives depending on the size of investment and employment. Land allotment in favour of the electronic hardware industry in different industrial parks and SEZs has been promoted. The state has raised the level of infrastructure support provided in the form of power, water, connecting roads, drainage, etc. thereby creating a conducive environment for growth.

The electronic hardware industry is present in 26 out of the 32 districts in the state, reporting a growth rate of up to 10%.

Value Chain: The electronic hardware value chain begins with assessment of the needs of the client and procurement of manufacturing inputs. Designing hardware is the next stage. The pre-production stage involves the assembly of a prototype and the selection of materials and components. Production involves assembly of products and quality testing. Post production involves logistics and technical support. Sales and maintenance involves the retailing of electronic hardware, advertising and maintenance involves provision of warranties and life cycle support for the product.

Figure 4.15: Value Chain in the Electronics Hardware Industry



Source: Athena Research

4.4.2.3 Food Processing

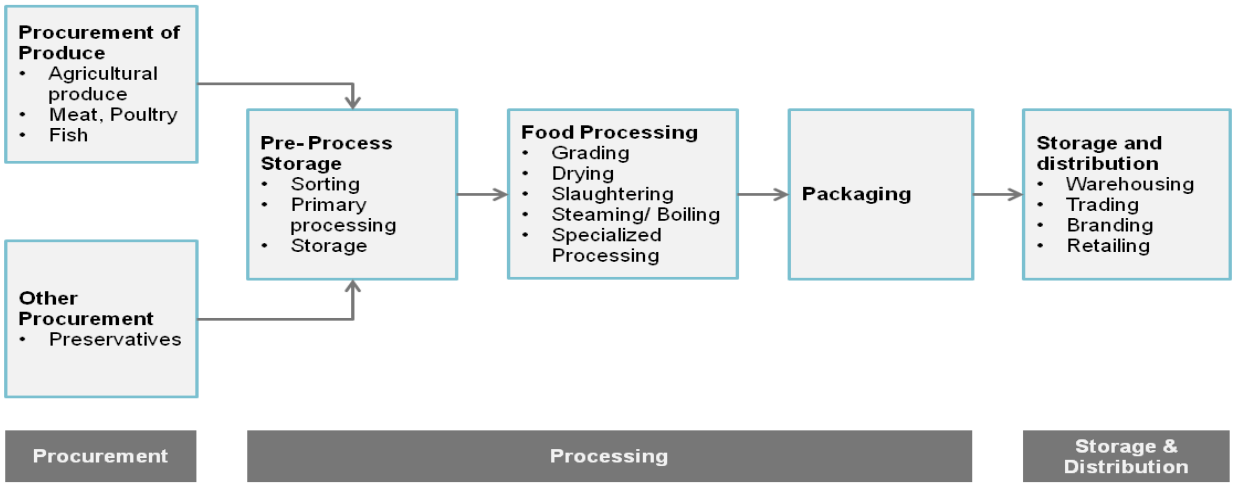
Introduction: Food processing industries are an emergent sector in the state. The key driver for this sector is the increasing income level fuelled by GDP growth and the rising middle class. Tamil Nadu is one of the major exporters of agro and processed food products. Large availability of raw materials, diverse agro climatic conditions and varied soil types offers great potential for the export sector. Changing lifestyle, increasing demand for fresh produce and a growing preference for organic food are the main drivers for export growth. Tamil Nadu is one of the key producers of food products in India with a large amount of arable land and the highest livestock population. This provides a great base for the development of the processed food industry.

Thanjavur is known as the "Rice bowl of Tamil Nadu" and offers great potential for agro processing. Agro food processing clusters are being encouraged in industrial parks and districts like Thoothukudi and Krishnagiri with special attention for value addition in palm products, medicinal plants, seafood and mangoes. An agri export zone has been established in Pudukottai.

The government of Tamil Nadu has initiated various policies as an incentive for the development of the industry. This includes incentives provided under the Agro and Agro Processing Policy 2008 and the Industrial Policy. The policy offers special incentives for investments between INR 1,500 crore and INR 4,000 crore: income tax rebates, excise duty waivers and reductions in customs duties. Food processing has also been declared a priority sector for lending at the central level. The government has planned to set up different industrial parks and SEZs to encourage foreign and domestic investment in the industry. Agro food processing clusters in the industrial zones are being planned. SIPCOT in Dindugul is being promoted as a food park. Government support has been extended to various districts for value addition in meat and seafood (Ramanathapuram), bananas (Tiruchirapalli), mangoes (Krishnagiri), poultry (Namakkal), turmeric (Erode), sago (Salem), seafood (Thoothukudi) and milk products and grapes (Theni).

Value Chain: The value chain in the food processing industry begins with the procurement of produce and related processed components. The next stage is pre processing, where produce is sorted, processed and stored. Food processing is a major part of the industry where raw produce is transformed into value added products. Packaging and processing these final products for storage transportation and retail is followed by the actual retailing of these goods.

Figure 4.16: Value Chain in the Food Processing Industry



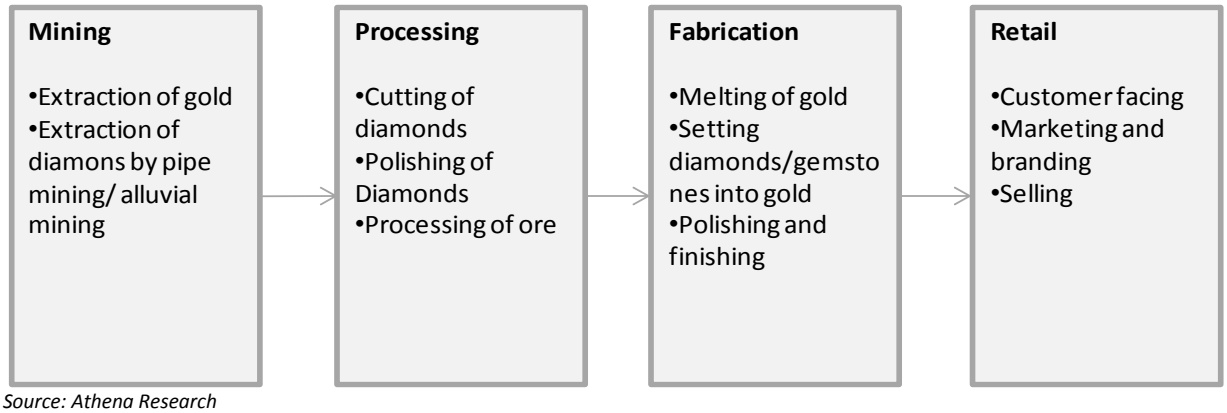
Source: Athena Research

4.4.2.4 Gems and Jewellery

Introduction: India is a major global hub of the gems and jewellery trade. The country is the leading producer of processed diamonds and one of the largest consumers of gold. The major segments in the gem and jewellery industry in India are diamonds and gold. Of the two, diamonds are primarily processed for export purposes while the gold market largely caters to domestic demand. The southern states are the hub of gold processing in India, with Kerala and Tamil Nadu as the leaders. Besides gold and diamonds, there are also pearls, silver and other precious stones.

Value Chain: The value chain in the gems and jewellery industry begins with the mining and extraction of precious metals and gemstones, primarily gold and diamonds. This is followed by the processing of diamonds by cutting and polishing them or refining gold ore. The next stage is fabrication of the processed inputs which involves melting of gold, setting of gem stones, polishing and finishing. The final stage in the value chain is the retailing of gold and diamond jewellery, which involves customer facing marketing and branding.

Figure 4.17: Value Chain in the Gems and Jewellery Industry



Source: Athena Research

4.4.2.5 Leather

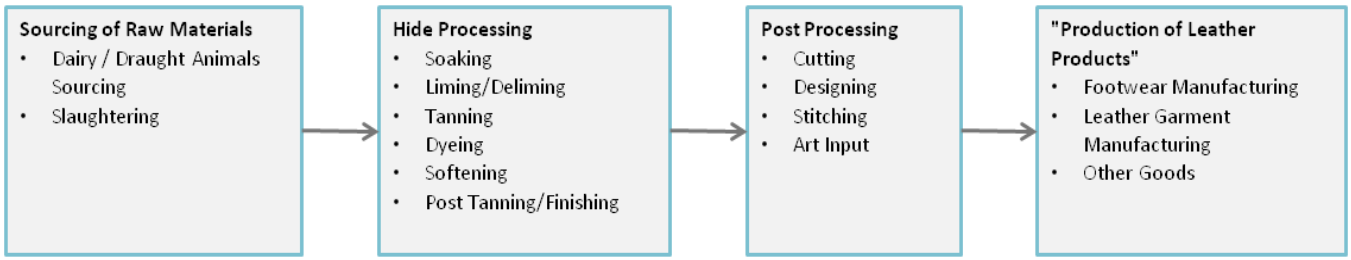
Introduction: Tamil Nadu accounts for 70% of the tanning capacity of India and meets 6% of the global leather requirement. Annual production topped INR 15,000 crore, or 60% of India's total production. About 36% of India's exports worth more than INR 5,300 crore were from Tamil Nadu in 2007-08. Majority of the production is concentrated in Vellore, Erode and Dindigul. Vellore has a large number of tanning and leather industries and is the largest exporter in the state. A leather product SEZ has been set up in the Chennai – Ranipet corridor by SIPCOT. Trichy also houses some of the major leather production centers in the state.

India has a large and growing middle class who have high disposable incomes. As a consequence, the demand for leather products and mostly footwear, has seen an increase which has fuelled the growth of the industry. According to the UNIDO 2009 report, the leather industry cluster of Tamil Nadu has estimated that the industry will grow faster than the national average and has ranked the state as one of the top 10 locations globally. With a high level of installed capacity for tanning, Tamil Nadu's export trend is projected to increase.

The government policies in relation to the leather industry have a strong institutional and policy direction which supports technological upgradation and environmental compliance. Complete de-regulation of the industry, along with 100% FDI through the automatic route have helped infuse modern production processes and management techniques in the sector. Duties on import of raw materials have been removed and many import concessions for imported machinery are offered to manufacturers; simplified import export procedures and lower import tariffs are also available to the leather sector. Leather industrial parks, design centers and research centers have been promoted.

Value Chain: The value chain in the leather industry begins with the sourcing of raw materials like animal hide from slaughter houses and farms. The hides are then processed by tanning into a form ready for post processing. In the post processing stage, leather is stitched, designed and cut into a form suitable for value added production. The final stage of the value chain is the manufacture of value added leather products and retailing. In 1985, Tamil Nadu used to export semi-finished leather due to a lack of access to better technology. Since 1985, however, finished leather goods have formed the backbone of the leather industry. Shoes continue to form the largest finished leather products in terms of sales. However, other products such as fashion gloves, handbags and small leather items are also being manufactured. Tamil Nadu is the leading producer of leather wallets in the country. The contribution of leather and value added leather has changed from 40% and 60% respectively to 20% and 80% respectively.

Figure 4.18: Value Chain in the Leather Industry



Source: Athena Research

4.4.2.6 Textiles

Introduction: The textile industry is one of the most important industries in the state economy in terms of employment and output. Tamil Nadu has the largest cotton textile industry cluster in India and it is emerging as a global sourcing hub for readymade garments. Handloom, power loom, spinning, processing, garment and hosiery are the various sectors of the industry in the state. Coimbatore, Kanchipuram and Erode are important

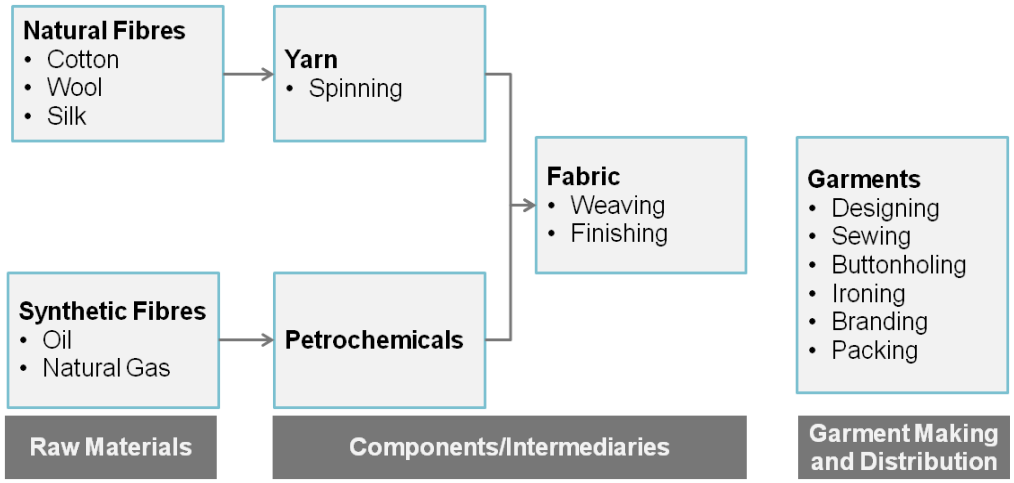
textile hubs in the state. Tiruppur is known as the "Knitting City." Many of the international and domestic brands have already established production bases in these districts. Textile parks in Erode and Tiruppur are equipped with effluent treatment plants. Karur and Salem are the other textile centres in the state.

Demographic, social and economic factors like high disposable incomes, younger demographics and greater participation of women in the work force have contributed to a rise in the domestic demand. The readymade garment sector is one of the largest export segments in textile exports and is expected to grow due to the high degree of global competitive advantage displayed by the industry. In 2007-2008, Tamil Nadu's exports of textiles and garments were 18.3% of the country's total exports. The presence of a large pool of skilled workers, a large engineering base and a good policy environment provides a great opportunity for investment in the industry.

The following State Policy for Textile has provided a great impetus for the development of the sector: De-reservation of readymade garments, hosiery and knitwear from the small-scale industries sectors in end-2000. Technology Mission on Cotton was launched to make quality raw material available at competitive prices. Technology Upgradation Fund Scheme was started to facilitate the modernisation and upgradation of the textiles industry till 2011-12. In addition, 13 Textile Parks are being promoted in the state to upgrade the handloom industry by providing world-class infrastructure facilities to augment export and generate employment. The Technological Mission for Textile industry launched in 2011 by the Indian Government aims to boost the technical know-how on textile production and support market development activities in the industry. A Knitwear Technology Mission is being set up in Tirupur which aims at upgrading the technology and skill level in the knitwear segment in the textile industry. These offer a great deal of potential for the textile industry.

Value Chain: The value chain in the textile industry starts from the procurement and processing of raw materials. Cotton, wool and silk are procured for natural fibres and oil and natural gas are procured for synthetic fibres. Textile mills convert natural fibres into forms ready for weaving and finishing, while petrochemical companies process petroleum products for synthetic fibres. Once the textile material is prepared, it is processed into a final readymade garment, and distributed.

Figure 4.19: Value Chain in the Textiles Industry



Source: Athena Research

4.4.2.7 Auto and Auto Components

Introduction

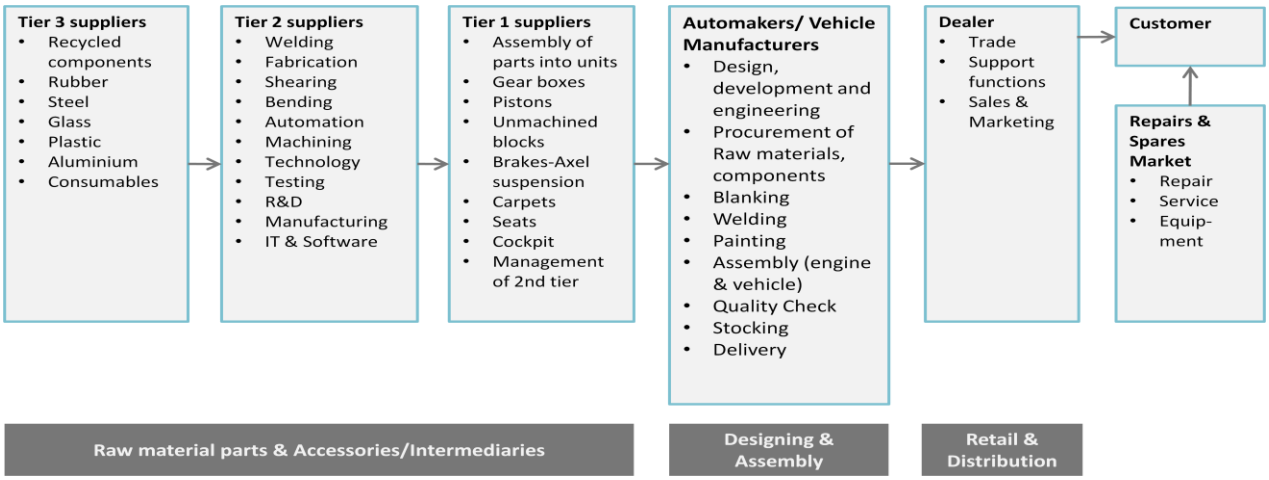
Tamil Nadu is one of the largest manufacturing hubs for the auto and auto components industry in the country. In 1948, Ashok Leyland started the assembly of Austin cars in the state. The Integral Coach factory was established in 1955. In the 1960s, the TVS group established a number of auto components manufacturing plants in the state. Chennai is the largest exporter of automobiles and auto components in India. Companies like Hyundai, Nissan and Ford find Tamil Nadu to be the most cost effective location for establishing their plants. Caterpillar USA, Kometsu and Koebelco, Japan and Doosan, South Korea have established manufacturing plants in Chennai.

The factors contributing to Tamil Nadu's success in attracting large numbers of automobile manufacturers are a favorable policy environment, excellent transport facilities and a comparatively ready availability of skilled human resources. The state government has announced a number of schemes to support the auto industry. This includes the ultra mega policy for integrated automobile projects that offers attractive incentive packages to automobile projects investing more than INR 4000 crore. There is also the super mega policy for investments between INR 1500 to 4000 crore. There are more incentive packages under the Industrial Policy 2007. Two SEZs for engineering products including automobile components have been promoted under the SEZ policy of SIPCOT. Industries can also avail of single window clearance and infrastructure support. Just around 4% of the total output of the industry is contributed by the MSME sector.

Value Chain

The value chain in the auto and auto components industry starts from Tier 3 suppliers of basic components like steel, plastic, aluminum and other consumables. This is supplied to Tier 2 suppliers who process these inputs into fabricated parts and supply them to Tier 1 suppliers who manufacture auto components like gear boxes, pistons, brake axel suspension kits, seats, carpets, etc. These products in turn are supplied to automobile manufacturers who produce a range of vehicles from 2 wheelers to the large trucks. The next step in the value chain is the dealer who retails the final product to the customer. Ongoing services in the form of repairs and customer care are provided at various levels by service entities.

Figure 4.20: Value Chain in the Auto and Auto Components Industry

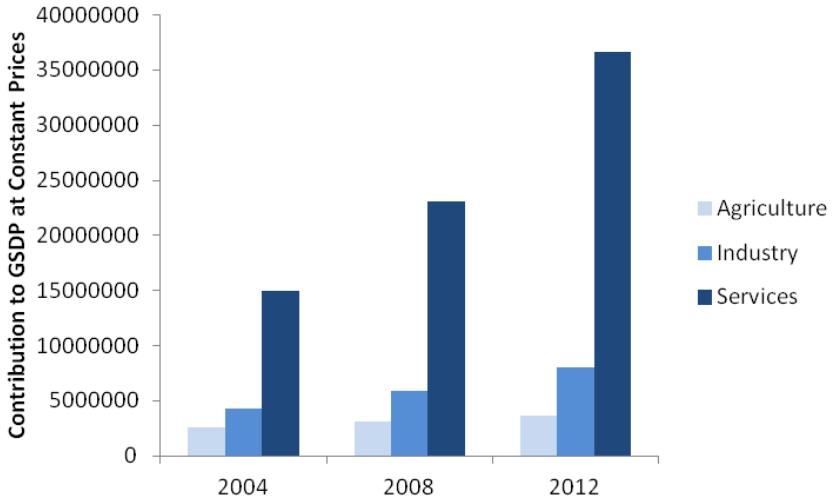


Source: Athena Research

4.4.3 Services

The contribution of the services sector to state GDP has risen steadily over the past few years. The service sector has grown at a compounded annual growth rate of 7.8%. The prominence of the services sector in the state economy is expected to continue to grow over the next decade.

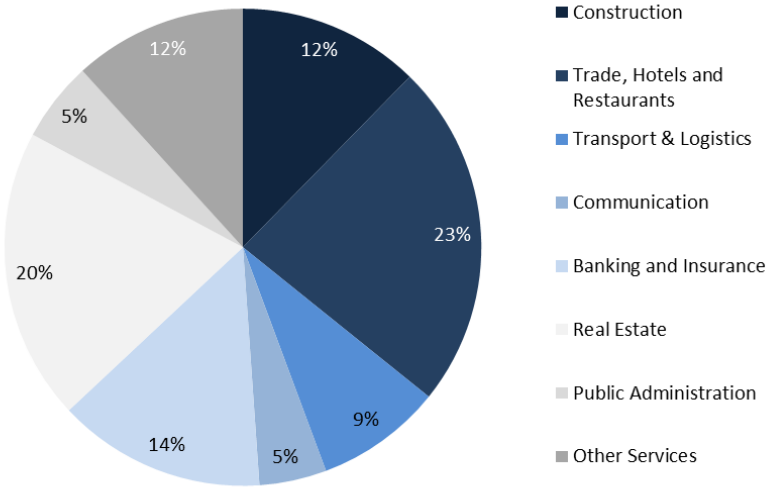
Figure 4.21: Sectoral Growth of GSDP in Tamil Nadu



Source: Department of Economics and Statistics, Tamil Nadu and Athena Research (2012)

Trade, hospitality, real estate, financial services and construction are the largest service subsectors. Emerging sectors such as transportation and logistics have shown growth rates of nearly 10% and are expected to continue to grow as the demand for support services rises with industrial growth.

Figure 4.22: Composition of Service Sector GSDP in Tamil Nadu



Source: Department of Economics and Statistics, Tamil Nadu and Athena Research (2012)

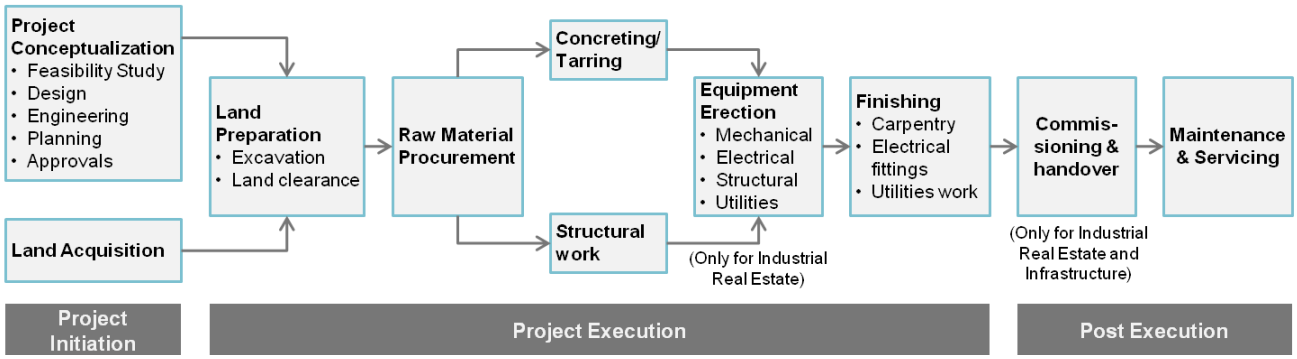
4.4.3.1 Construction and Real Estate

Introduction: The construction and real estate industry includes: construction and real estate, building hardware and construction material and furniture and furnishings. The spending on infrastructure is predicted to increase multifold in the coming years. Projects like Golden Quadrilateral, Chennai Metro Rail project, upgradation of major ports, development of new minor ports, international airport at Sriperumpudur, Biotechnology Park in Mahabalipuram, are in pipeline which requires a great deal of investment in the future. The real estate sector in Tamil Nadu has witnessed tremendous growth in the last few years primarily fuelled by the increasing presence of a number of IT/ITEs companies, leading to increased job creation. The rising population, large scale migration and increasing level of disposable income are factors which will raise the demand for housing in Tamil Nadu. There are several SEZs which have been approved by the government which will also provide a boost to the real estate development scenario in the state. The construction sector has witnessed a high increase in investment because of massive investments in power, port development and industrial parks. During the period January 2000-December 2009, construction activities attracted 13% of the total FDI inflow in the state.

Nagapattinam and Cuddalore have seen port development activities which have a led to a surge in the constructions activities. In addition, the government has proposed to develop a PCPIR region in Cuddalore with an investment of around INR. 16,725 crore. Neyveli Lignite Corporation is the major industry player in Cuddalore which is planning to expand its capacity. Rapid urbanization and a growing population have pushed the demand for housing in Chennai. So Chennai and the nearby districts of Kancheepuram and Tiruvallur, because of their close proximity to the city, have seen lot of real estate development. Concentration of industries in Coimbatore and Madurai adds momentum to the growth of infrastructural development.

Value Chain: The value chain in the construction industry starts with the initiation and design of the project. Important activities at this time include feasibility studies, government approvals, land acquisition and project planning. Land preparation is the next step, involving excavation and land clearance. Raw materials for the construction process are acquired and sent to the next stage in which foundational equipment is erected. Finishing of the structures involves the interior work and utilities. Post commissioning and handover, services like maintenance are provided.

Figure 4.23: Value Chain in the Construction Industry



Source: Athena Research

4.4.3.2 Education

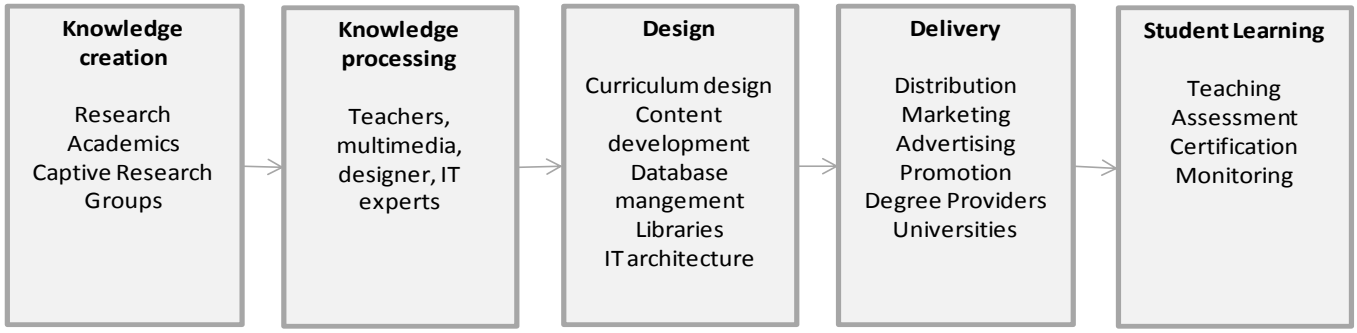
Introduction: Literacy rate in Tamil Nadu has seen an upward trend and is at 80.33 percent as per the 2011 census, one of the highest in India. Of that, male literacy stands at 86.81 percent while female literacy is at 73.86 percent. In 2001, literacy rate in Tamil Nadu stood at 73.45 percent of which male and female literacy rates were 83.28 percent and 64.91 percent, respectively. In actual numbers, total literates in Tamil Nadu stands at 5.2

crore, of which 2.8 crore were males and 2.4 were females. The male literacy rate in urban areas stands at 91%, higher than that in rural areas which is 82%. Female literacy rates in urban areas are 82% as compared to 65% in rural areas. The Net Primary and Upper-Primary rates stand at 98% each and the respective dropout rates are 3.8% and 7.6% as of 2011. The state of higher education is well represented with 476 engineering colleges, 680 ITI colleges of which 69 are government ITIs, and 454 polytechnic institutes.

There are a total of 33,909 primary schools, 8,552 upper primary schools, 4,436 secondary schools and 4,632 higher secondary schools in the state. The rising levels of economic development, urbanisation and competitiveness in the labor market, has increased the demand for education and the need for highly skilled human resources that can take production and profitability to the next level. This has propelled the growth of the booming education sector and Tamil Nadu is an ideal destination for higher education courses such as engineering, as it has a large IT, automobile and electronics sector in the state.

Value Chain: The value chain in the education industry begins with the creation of knowledge via academic research in universities and research groups. Knowledge is processed and presented to the broader community through the medium of journals, media, etc. Generated knowledge is then designed into a form suitable for distribution and storage. The delivery mechanism includes distribution, marketing, advertising, etc. The final product is student learning through courses, assessment, monitoring and certification.

Figure 4.24: Value Chain in the Education Industry



Source: Athena Research

4.4.3.3 Healthcare

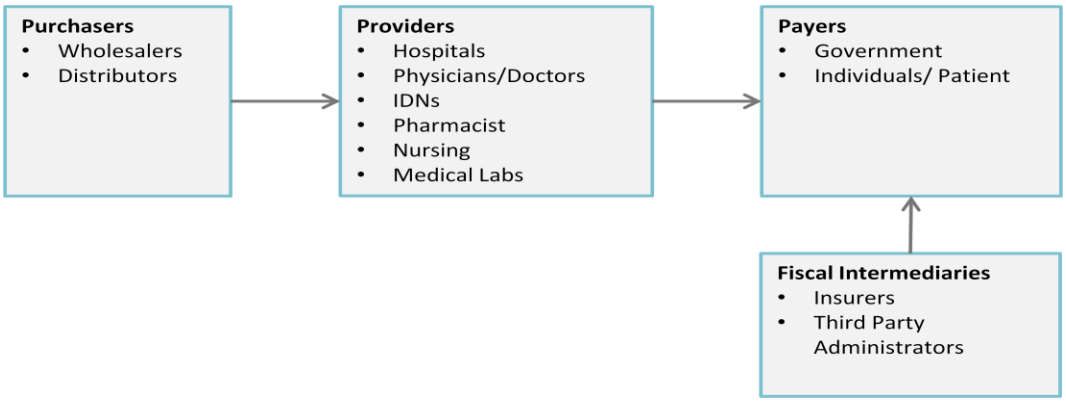
Introduction: Tamil Nadu is the largest and most sophisticated provider of healthcare in the country. Healthcare development first started in Chennai, a city that had a population of 43.4 lakhs in the 2001 census. Apollo Hospital, Chennai was the first corporate hospital to be set up in Tamil Nadu, followed by others like Sankara Nethralaya, Madras Medical Mission, Sri Ramachandra Medical College (SRMC), Chettinad Health City, MV Hospital for Diabetes and Dr Mohan's Diabetes Centre. Other cities like Vellore, Madurai and Coimbatore are also well known medi-cities. The state has become a gateway for patients from neighboring states of Kerala, east and northeast India, and also for foreign nationals. Medical tourism has been gaining prominence rapidly in the state with five per cent of patients coming to Coimbatore and Chennai from other states. A significant proportion of patients come from neighboring countries like Malaysia, Singapore, Maldives, Middle East and Bangladesh. Many patients from the West prefer to visit Chennai for treatment because it is well connected by air. Estimates suggest that around five lakh people from rest of India, apart from 40,000 foreigners, have visited the state for various medical treatments in 2008.

The growth of healthcare in Tamil Nadu has been due to continued policy support. First, the Public Health Directorate has maintained its separate identity and mission since 1922 and has been staffed by a trained cadre of public health managers. The Directorate has offered incentives and career paths in public health, thus

minimizing the national tendency for dominance of public health specialists by medical specialists. The Directorate has retained a separate budget, which has facilitated the planning, staffing and implementation of the full-scope of public health services. Tamil Nadu has a Public Health Act, which assigns responsibilities to different layers of government and its agencies, sets standards of food hygiene, water quality, etc. and mandates regulation and inspection of agencies and establishments, including a broad authority to control any 'nuisance' that could threaten people's health. There is a well-functioning professional public health cadre managing a team of non-medical specialists and lower-grade staff working solely on public health. This cadre has faster promotion avenues than the medical cadre and enjoys considerable administrative responsibility and authority.

Value Chain: The value chain in the healthcare sector starts with the purchasers of medical equipment, either distributors or wholesalers. It then moves to the providers of healthcare, i.e., hospitals, clinics, etc. and associated staff like doctors, nurses, pharmacists, technicians and lab assistants. Insurance companies and government funders finance the healthcare purchases of the general population. In this study, the healthcare sector is taken to be the providers of healthcare since medical equipment manufacturers come under the ambit of manufacturing industries, insurance firms come under the financial sector and intermediaries are not considered.

Figure 4.25: Value Chain in the Healthcare Industry



Source: Athena Research

4.4.3.4 IT/ITES

Introduction: The Indian Information Technology industry has played a vital role in putting India on the global map. India's IT growth in the world is primarily dominated by IT software and services such as Custom Application Development and Maintenance (CADM), System Integration, IT Consulting, Application Management, Infrastructure Management Services, Software Testing, Service Oriented Architecture and Web Services.

ITES which started as a basic data entry task decades ago, is also witnessing an expansion in its scope of services to include increasingly complex processes involving rule-based decision making and even research services requiring informed individual judgment. India is becoming a hot destination for outsourced e-publishing work. The industry is expected to grow at an annual rate of 35%. The mainstay of the segment is the revenues from Customer Interaction Services (CIS) and finance and accounting (F&A) service sub-segments.

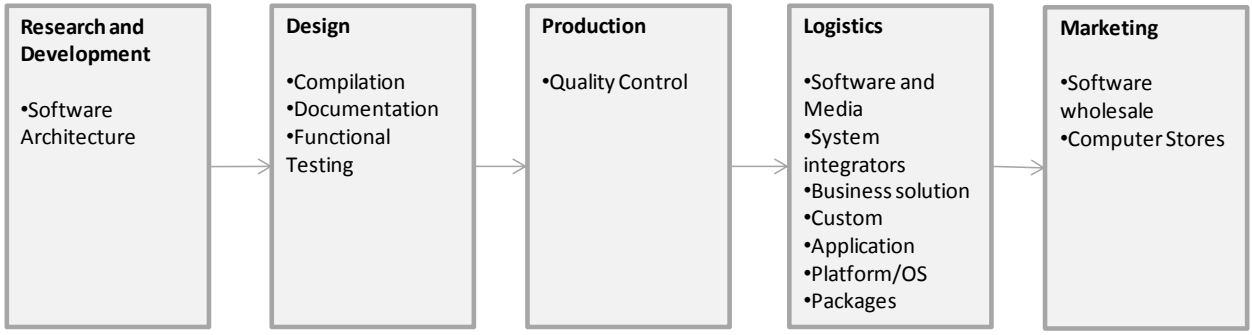
The revenue of the IT sector has gone up from 1.2% of the GDP in FY 1997-98 to an estimated 5.8% in FY 2008-09. Indian IT-BPO sector grew by 12% in FY 2009 to reach US$ 71.7 billion in aggregate revenue. Out of this the software and service segment accounted for US$ 59.6 billion. The Indian IT service market is estimated to

remain the fastest growing in the Asia-Pacific region with a CAGR of 18.6%. Infosys, TCS and Wipro have had growth in their revenues between FY 2008 and 2009 despite the economic slowdown.

Tamil Nadu's IT exports was Rs. 36,680 crores during 2008-09, which is 11% of India's software and services exports. The state recorded the highest growth rate in software exports in India at 29%. There are 1683 IT companies currently operating in Tamil Nadu which employ about 285,000 software professionals. Success of the IT sector in Tamil Nadu is primarily due to the low manpower cost. More than 37% of the engineering graduates from Tamil Nadu specialise in Computer Science or IT or Electronics. The high level of economic development and the growing support infrastructure for businesses in tier 2 & 3 cities such as Coimbatore, Tirunelveli, Madurai, Salem, Trichy, and Hosur are important success factors, which are expected to further enhance Tamil Nadu's competitiveness. Tamil Nadu plays host to a number of large global companies that enjoy high credibility, and the experience of working with such organizations offers rich expertise on a wide variety of platforms.

Value Chain: The value chain in the IT/ITES industry begins with the research and development of software architecture. The next stage is the design stage, which involves compilation, documentation and functional testing. The production stage involves quality testing. Logistics stage involves integration, customization and porting to various software platforms and client systems. The retail stage involves marketing, advertising and retailing in software in wholesale and computer stores.

Figure 4.26: Value Chain in the IT/ITES Industry



Source: Athena Research

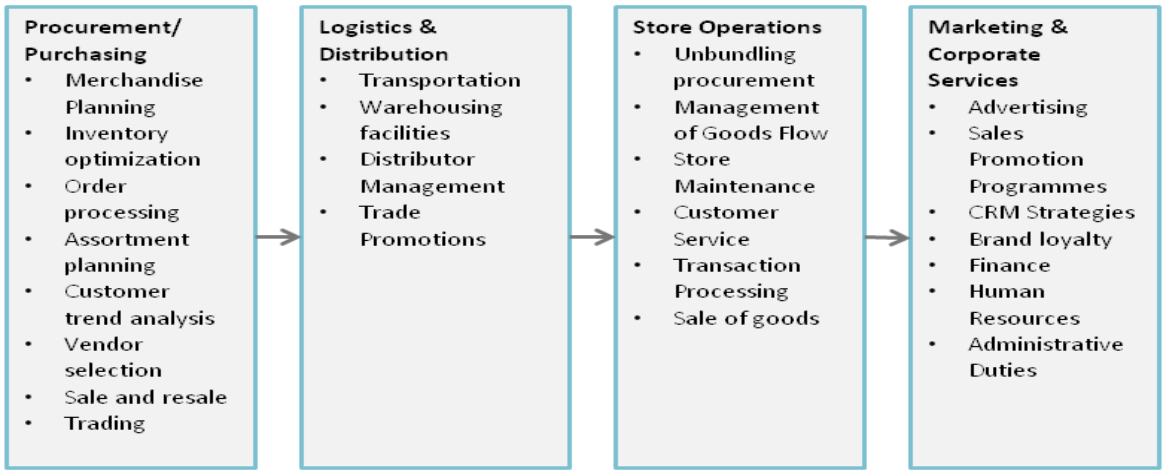
4.4.3.5 Organized Retail

Introduction: There has been a significant increase in the number of visitors, both domestic and foreign, to Tamil Nadu mostly backed by the growth in domestic tourism. The growth in domestic and foreign tourism during 2005-2009 is given below. With rising incomes and increased purchasing power of the middle class, the retail and hospitality industry is poised to grow at a fast pace, contributing to the development of the economy. Strong economic growth, population expansion and high disposable incomes are key factors driving the organized retail sector. Expanding middle and upper level consumer base and growth of tier 2 and tier 3 cities also offers great potential for the retail sector. Madurai, Chennai and Coimbatore are growing cities and have a younger demography of population with greater disposable incomes. These districts have also developed industrial clusters in textile, automobiles and other key sectors. In these districts, greater wholesale/retail trade activities have been registered.

Value Chain: The value chain in the organized retail sector starts with the procurement and purchase of goods. This involves merchandise planning, inventory optimization, order processing, trend analysis, vendor selection and sale and resale. Logistics and distribution involves transportation, warehousing and distribution. Store

operations involve unbundling, maintenance, transaction processing and sales. Ancillary services include marketing, finance, and HR.

Figure 4.27: Value Chain in the Organized Retail Industry



Source: Athena Research

4.4.3.6 Tourism, Travel and Hospitality

Introduction: The tourism and hospitality industry is one of the fastest-growing sectors and offers great potential given the vast diversity in geography, nature and culture of India. Tamil Nadu is one of the top destinations for tourists visiting India. Tamil Nadu has registered an 18.4% growth in foreign visitors and is the second most visited state by foreign visitors. There has been a significant increase in the number of visitors, both domestic and foreign, to Tamil Nadu mostly backed by the growth in domestic tourism. With rising income and increased purchasing power of the middle class, the retail and hospitality industry is poised to grow at a fast pace contributing to the development of the economy.

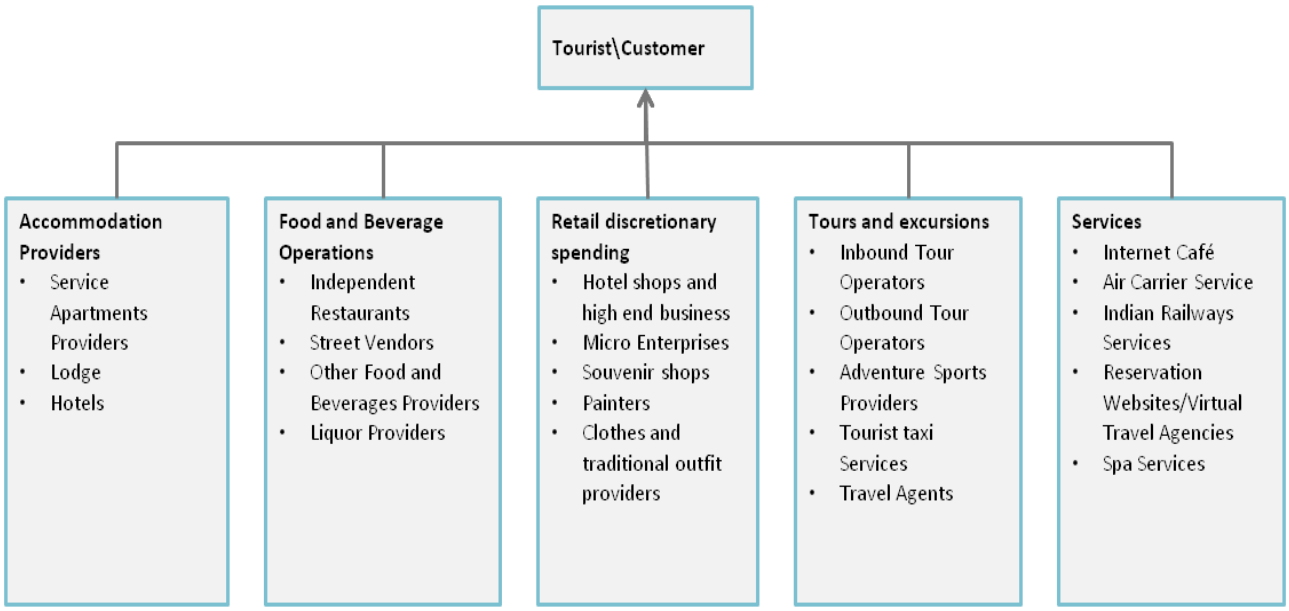
There has been a significant increase in tourism revenue in the state due to increasing number of domestic and foreign tourists. Kanyakumari, Kanchipuram and Dindigul are renowned destinations for pilgrims while the Nilgiris have been attracting tourists from all over the world. These districts have seen greater investment in tourist infrastructure and development. Madurai, Chennai and Coimbatore are growing cities and have younger demography of population with greater disposable incomes. These districts have also developed industrial clusters in tourism, travel and hospitality, automobiles and other key sectors. Wholesale/retail trade activities have also shown growth in these districts.

The state government has recognized the importance of tourism to state revenue and has introduced a number of policies to promote the sector. Lesser known tourist destinations are being actively promoted. Subsidies and incentives are extended to private investors in the hospitality sector. This includes a one-time subsidy and soft loans for the construction of star and heritage hotels. Several human resource development initiatives like the guide training programme and the central government's Hunar Se Rozgar Tak scheme have been implemented in the state. Other initiatives include a tourism protection organization, awareness and promotional campaigns and infrastructure development. A major initiative is the ADB funded development of tourism corridors along the eastern coast and in the southern regions of the state.

Value Chain: The value chain in the tourism and hospitality sector is centered on the provision of multiple services and end to end services for the customer. These services include accommodation services like service

apartments and hotels, food and beverage providers like restaurants, street vendors, liquor, etc., retail stores like souvenir stores, boutiques and stores promoting local products, tours and excursion activities and ancillary services like transport and communication. Hospitality providers might be horizontally integrated and provide a variety of these services together or they might specialize in particular segments, or operate in a contractual relationship with other providers.

Figure 4.28: Value Chain in the Tourism, Travel and Hospitality Industry



Source: Athena Research

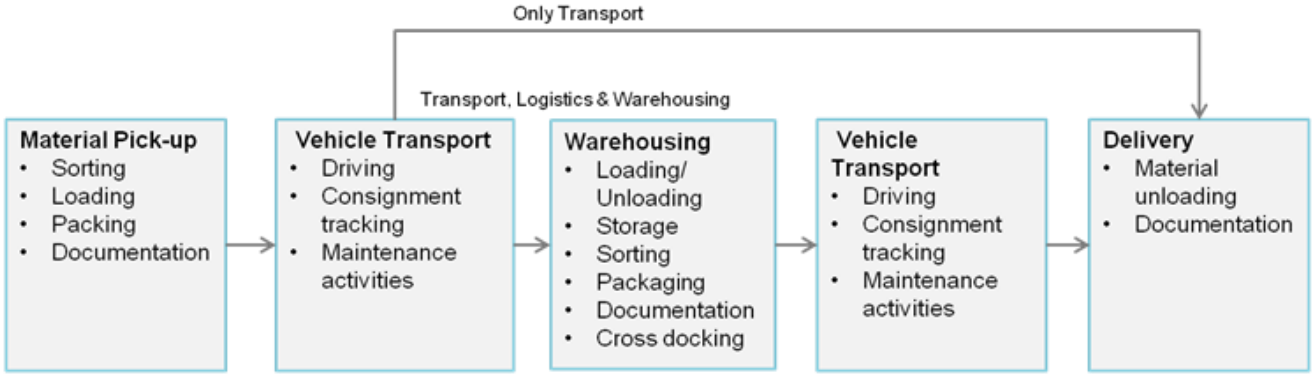
4.4.3.7 Transportation, Storage and Logistics

Introduction: An increase in the organized retail trade will see a push for more logistic services in terms of warehousing and delivery. With considerable increase in international and domestic trade, the requirement for transportation, handling and warehousing is increasing at a fast pace. Recent years have seen the emergence of services offering complete logistic support for the organization. International firms like Federal Express and DHL have entered the Indian market and are changing the nature of services and business practices. The reform in the tax structure and the introduction of the Goods and Service Tax (GST) is likely to remove several institutional bottlenecks facing the transport industry. With this move, logistics firms are likely to gain more traction.

Rising population, a young demography and increased disposable incomes have created a favourable eco-system for organized retail trade in Chennai, thereby creating greater demand for investment in transport and logistics. The other push for this demand comes from the growth of industries. Coimbatore, Salem and Erode are the main industrial hubs in the state with a large number of textile industries. Madurai-Tuticorin is being developed as an investment corridor. So there is a greater push for transport and logistical services.

Value Chain: The value chain in the transportation, storage and logistics industry begins with the pickup of materials to be transported. This includes sorting, loading, packing and documentation. Next is the vehicle transportation of goods, which involves allied services like maintenance and tracking. Transportation may terminate directly when delivery is made to the end user or go through intermediate phases. This includes warehousing, where goods are unloaded, sorted, packed, documented and stored. The final phase is transportation for end usage.

Figure 4.29: Value Chain in the Transport and Logistics Industry



Source: Athena Research

4.4.3.8 Unorganized Sector

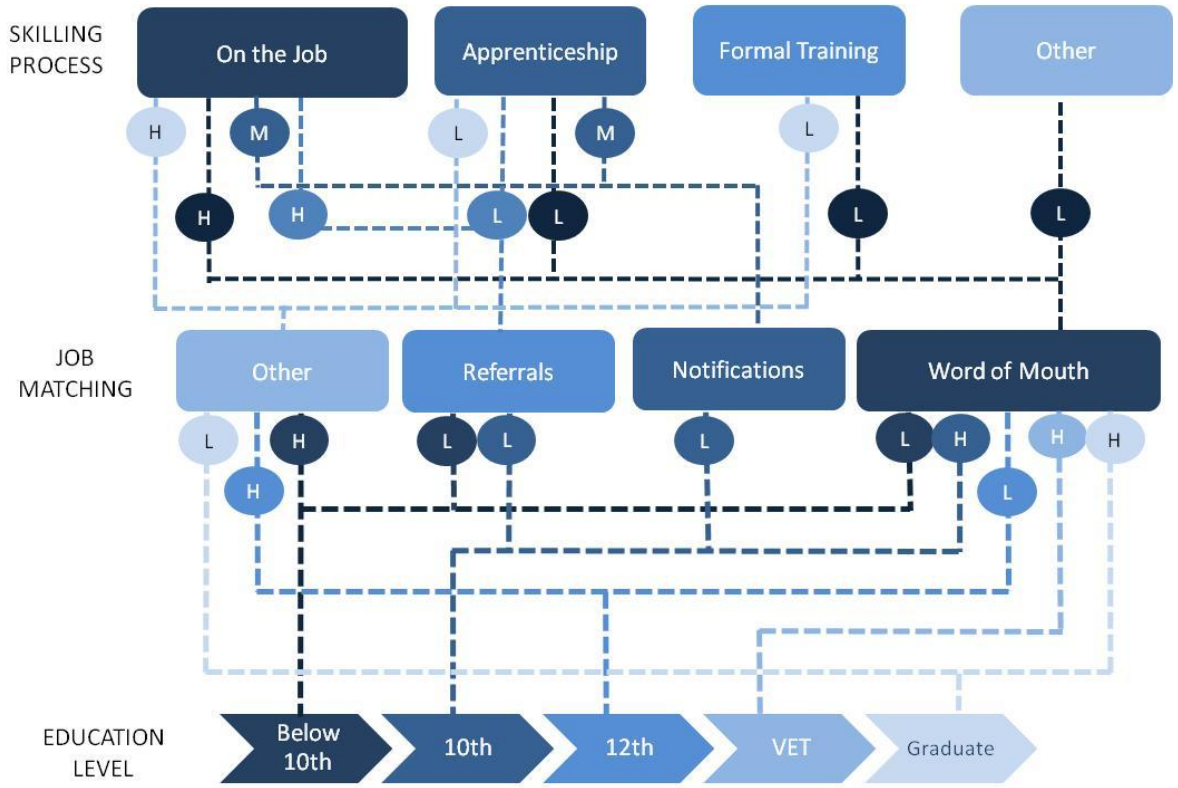
Introduction: A majority of the service sector in sectors such as retail, transport, construction, hospitality and tourism in Tamil Nadu is unorganized. Approximately 35% of the manufacturing sector is unregistered. There are few incentives for unorganized players to register themselves, which has led to the proliferation of this sector. Unorganized players have a degree of flexibility in their operations. However, workers employed in this sector are constrained by a number of factors. The transient nature of employment, the lack of employee welfare coverage and the absence of benchmarking for wages poses significant problems. There is an increasing propensity towards unorganized employment in the form of contract labor in the formal sectors. According to NSSO estimates, Tamil Nadu accounts for 9.2% of the total number of unorganized enterprises in the country and 7% of the enterprises in the service sector.

Due to its size and dispersion, the unorganized sector is neither understood, nor properly documented. Less than one-third of the workers in this sector are formally skilled. Skills in the unorganized sector are largely acquired on the job. Sometimes, the skills are acquired through family professions. Skills are also imparted informally when a skilled worker is paired with an unskilled worker on the job. The absence of career progression corresponding to an increase in skill level acts as a disincentive to the acquisition of skills: workers in this sector often work in the same capacity from the beginning of their careers until retirement.

Skilling Tree

Based on the findings of the unorganized survey, the following skilling tree maps the correspondence among education level, job matching process and form of skill acquisition for the unorganized sector. H indicates a high proportion, M indicates a moderate proportion and L indicates a low proportion of the sample in the source group.

Figure 4.30: Skill Acquisition and Job Matching Tree



Source: Athena Research

Field surveys reveal that a majority (59%) of unorganized sector workers with an education level below Class 10 found employment through other channels, such as working with friends or relatives or directly requesting employment. This is indicative of the absence of a peer group for school drop outs, which makes it difficult for them to find jobs through conventional channels. Those who had passed the 10th grade relied on word of mouth (67%) and notifications (22%) for finding jobs. However, there is no clear correlation between the educational attainment of the workers and the level of formality of the job matching process in the unorganized sector. Of those who had passed the 12th grade, 33% relied on word of mouth for finding jobs. A majority of vocationally educated respondents and graduates also relied on word of mouth, indicating strong localized information channels.

The information sources for those who drop out before completing the 10th grade are often limited to their immediate family. Dropping out is often the result of financial circumstances. Low awareness also limits the understanding of the expected future benefit from staying in school in the form of improved employment opportunities and wages. The absence of a peer group for drop outs (since many of their friends remain in school) causes the job search process to be longer because shared information about job opportunities is unavailable. This is reflected in the high percentage of school drop outs using other public sources of information to find jobs in the unorganized sector.

On the other hand, those searching for employment after completing the 10th grade appear to benefit from the externalities of a common job search with their peers, finding more opportunities through word of mouth. For those who passed the 12th grade, a significant proportion of the peer group moves into higher education, fragmenting their information channels and reducing reliance on word of mouth. Vocationally educated workers

and graduates were often able to find jobs through word of mouth within a month of beginning the search. Other forms of job matching were associated with longer job searches. Therefore, a common job search with a large, relatively homogenous peer group shortens the job matching process for unorganized sector workers.

Of those who found jobs through word of mouth, 77% were skilled on the job. Of the rest, 74% were also skilled on the job, indicating that the form of skill acquisition remains informal in the unorganized sector, irrespective of the job matching process. Information sources affect the length of the job search but not the method of skill acquisition.

Notifications are often used to hire skills that are difficult for the employer to find through his own network. Those who find jobs through referrals are less likely to be formally trained compared to those who find employment by responding to notifications. Hence, a higher level of formal skill acquisition is associated with a more formal job matching process. Informal hiring practices may, therefore, act as a disincentive to formal skill training.

More than half of the respondents were self employed, owning small establishments employing a few workers. Most of them terminate their education early and acquire the requisite skills through an extended period of on the job or self learning. Those with lower educational qualifications tend to seek security in self employment rather than organized sector employment. This suggests the lack of cyclical up-skilling opportunities for those who enter the work force at a lower education level compared to those who enter it with higher qualifications. The lack of formal skilling at both the management and employee level in the unorganized sector also suggests that the sector is unlikely to be a demand driver for skilling. There is no indication of upward mobility within the sector through skilling. Therefore, the unorganized sector may be viewed as a net supplier of candidates who wish to enter the formal labor market.

5 HUMAN RESOURCE REQUIREMENTS

Currently, the workforce in the selected sectors is estimated to be 2.56 crore. By 2017, this number is expected to rise to 3.47 crore and by 2022, to 4.32 crore workers in the chosen focus sectors. By 2017, there will be an estimated 2.57 crore unskilled workers, 1.18 crore semi-skilled workers and nearly 90 lakh skilled workers. In 2022, the workforce is expected to comprise over 3 crore unskilled workers, 1.57 crore semi-skilled workers and 1.15 crore skilled workers.

Construction, tourism, travel & hospitality and unorganized services are expected to show very high growth in human resource requirements over the next decade. Employment in agriculture is expected to contract during the same time period. The following table highlights the sectors with the highest incremental demand by time period.

Table 5-1: Sectors with Greatest Incremental Human Resource Requirement by Skill Level and Time Period

Skill Level/ Period	2012-2017	2017-2022
Unskilled	Construction, Textiles, Tourism & Travel, Organized Retail	Construction, Textiles, Tourism & Travel, Organized Retail
Semi skilled	Tourism & Travel, Construction, Automobile, Chemicals & Pharmaceuticals	Tourism & Travel, Construction, BFSI, Media & Entertainment
Skilled	Tourism & Travel, IT & ITES, BFSI, Chemicals & Pharmaceuticals	Tourism & Travel, IT& ITES, BFSI, Organized Retail

Source: Athena Research

Chennai, Kancheepuram and Thiruvallur form an industrial hub at the north-east of the state, and are expected to account for over 24% of the incremental skilled human resource requirement in the state of Tamil Nadu. However, with the increasing industrialization of other districts such as Coimbatore, Erode, Kanniyakumari, Madurai, Tiruchirappalli and Salem, the human resource requirement across the state is expected to grow significantly over the next decade.

Table 5-2: Districts with Greatest Incremental Human Resource Requirement by Skill Level and Time Period

Skill Level/ Period	2012-2017	2017-2022
Unskilled	Chennai, Kancheepuram, Thiruvallur, Coimbatore, Kanniyakumari, Madurai, Vellore,	Chennai, Kancheepuram, Thiruvallur, Vellore, Coimbatore, Salem, Tirunelveli
Semi skilled	Chennai, Kancheepuram, Thiruvallur, Vellore, Coimbatore, Madurai, Salem	Chennai, Kancheepuram, Thiruvallur, Madurai, Vellore, Coimbatore, Salem
Skilled	Chennai, Kancheepuram, Thiruvallur, Coimbatore, Madurai, Tiruchirappalli, Vellore	Chennai, Kancheepuram, Thiruvallur, Coimbatore, Madurai, Tiruchirappalli, Dindigul

Source: Athena Research

Table 5-3: Incremental Human Resource Requirement by Skill Level and Industry for 2017 & 2022 (in 000s)

INCREMENTAL HUMAN RESOURCE REQUIREMENT in 000s	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-1,051	-25	-191	**-1,267**	-920	-22	-168	**-1,110**
Automobile	49	62	22	**133**	82	109	39	**230**
Chemicals and Pharmaceuticals	41	54	81	**176**	36	54	80	**170**
Electronics Hardware	1	2	6	**10**	2	4	10	**16**
Food Processing	59	5	13	**77**	82	8	19	**108**
Furniture	10	0	1	**11**	15	1	1	**16**
Gems & Jewellery	6	2	1	**9**	9	3	2	**14**
Handlooms & Handicrafts	-21	-1	0	**-22**	-19	-1	0	**-21**
Leather	39	16	12	**67**	55	23	18	**97**
Textiles	206	39	45	**290**	294	59	67	**419**
BFSI	4	45	123	**172**	5	65	177	**246**
Construction	771	148	73	**992**	1,703	319	154	**2,176**
Education	1	6	64	**71**	2	7	77	**85**
Healthcare	9	35	60	**103**	8	34	58	**101**
IT and ITES	0	12	162	**174**	0	16	218	**235**
Media & Entertainment	8	32	63	**103**	12	57	111	**181**
Organized Retail	97	21	67	**185**	167	38	119	**323**
Real Estate	4	9	41	**53**	4	13	58	**76**
Tourism & Travel	102	367	327	**797**	159	633	565	**1,357**
Transportation & Logistics	67	17	11	**95**	73	19	13	**105**
Unorganized (excluding Agriculture and Construction)	1,316	664	917	**2,897**	1,545	1,002	1,189	**3,736**

Source: Athena Research

Tamil Nadu being a traditional automotive hub on account of its strategic location and multi-modal transport facilities is expected to have a growing requirement for skilled human resources in this sector in and around Chennai. The Tamil Nadu Petroleum, Chemical and Petrochemical Investment Region, which is to be developed along the Cuddalore-Nagapattinam stretch is expected to drive the requirement for human resources in the chemicals and pharmaceuticals sector. Strong construction growth is expected with increasing industrialization and economic development across the state. The textile industry is staging a recovery following the sharp decline in demand in 2007-08, and is expected to grow. The human resource requirement in the agriculture sector is expected to fall sharply, as alternate employment opportunities become available. Service sectors such as tourism and travel, organized retail, media and entertainment, transport and logistics and IT and ITES will continue to drive the growth of human resource requirements in the economy, as the need for support services for industrial growth steadily rises.

Districts such as Dindigul and Krishnagiri will benefit from the promotion of the food processing industry. Textiles will drive the human resource requirement for districts such as Coimbatore, Tiruppur and Erode. Chennai, Kancheepuram and Thiruvallur will have the highest human resource requirement over the next decade with rapid industrialization and economic growth.

Table 5-4: Incremental Human Resource Requirement by Skill Level and District for 2017 & 2022 (in 000s)

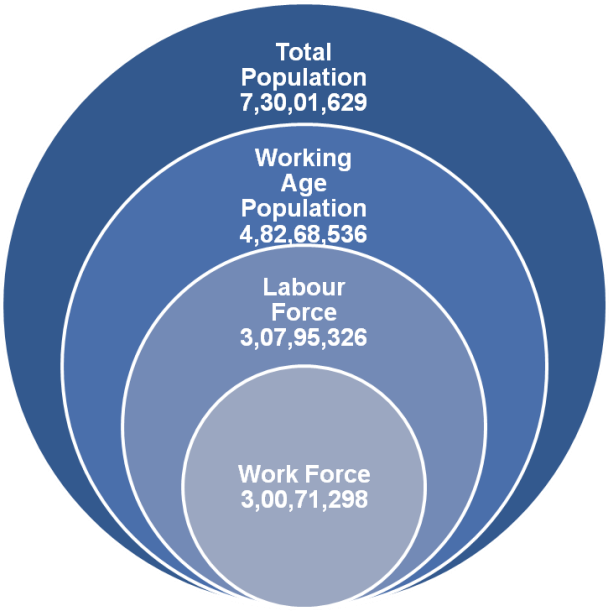
INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Ariyalur	-1	8	8	**13**	5	12	12	**27**
Chennai	196	170	270	**620**	287	273	391	**936**
Coimbatore	139	72	106	**312**	223	116	151	**485**
Cuddalore	14	39	44	**248**	57	62	67	**330**
Dharmapuri	24	22	24	**70**	58	37	37	**131**
Dindigul	48	45	50	**142**	95	74	77	**245**
Erode	61	40	56	**152**	113	63	80	**252**
Kancheepuram	152	122	168	**417**	257	196	242	**671**
Kanniyakumari	111	62	68	**238**	202	107	105	**410**
Karur	22	17	22	**60**	44	27	31	**102**
Krishnagiri	45	27	31	**102**	90	45	45	**179**
Madurai	95	76	96	**258**	168	124	144	**427**
Nagapattinam	-11	32	29	**67**	24	55	50	**144**
Namakkal	34	26	32	**91**	70	42	46	**158**
Perambalur	-10	6	4	**0**	-4	9	7	**13**
Pudukkottai	20	20	23	**62**	51	32	34	**117**
Ramanathapuram	7	34	33	**73**	34	57	54	**144**
Salem	81	61	77	**213**	158	99	113	**364**
Sivaganga	20	17	20	**56**	46	28	30	**103**
Thanjavur	16	50	55	**120**	55	82	86	**223**
The Nilgiris	33	40	42	**114**	49	67	66	**181**
Theni	17	14	19	**49**	29	22	26	**77**
Thiruvallur	147	105	130	**351**	243	166	185	**564**
Thiruvarur	-35	13	9	**-14**	-14	21	18	**25**
Thoothukkudi	37	42	48	**122**	78	69	73	**216**
Tiruchirappalli	74	63	80	**214**	137	104	120	**359**
Tirunelveli	84	52	68	**196**	149	84	98	**323**
Tiruppur	90	44	64	**197**	149	68	91	**308**
Tiruvannamalai	16	43	42	**101**	66	72	68	**206**
Vellore	117	70	90	**268**	210	112	129	**443**
Viluppuram	18	38	40	**97**	74	62	62	**198**
Virudhunagar	60	38	50	**117**	109	56	67	**202**
TOTAL	**1,718**	**1,511**	**1,896**	**5,125**	**3,313**	**2,440**	**2,807**	**8,560**

Source: Athena Research

6 HUMAN RESOURCE AVAILABILITY

Population growth is expected to be moderate over the next decade on account of stabilizing birth rates in the state. Of the current work force, it is estimated that over 76% lie in the unskilled category. 18.4% are estimated to be skilled and slightly over 5% lie in the semi skilled category.

Figure 6.1: Human Resource Availability in 2012



Source: Census 2011, NSSO (2009-10), Athena Research

The table below displays the districts with highest incremental human resource availability at different skill levels.

Table 6-1: Districts with Highest Incremental Human Resource Availability by Type

Skill Level/ Period	2012-2017	2017-2022
Unskilled	Kancheepuram, Thiruvallur, Viluppuram, Tiruppur, Salem	Kancheepuram, Thiruvallur, Viluppuram, Tiruppur, Salem
Semi skilled	Chennai, Kancheepuram, Coimbatore, Tiruchirappalli, Tirunelveli	Tiruchirappalli, Kancheepuram, Chennai, Coimbatore, Pudukkottai
Skilled	Coimbatore, Madurai, Kancheepuram, Vellore, Chennai	Coimbatore, Kancheepuram, Chennai, Madurai, Tiruchirappalli

Source: Athena Research

Table 6-2: Incremental Human Resource Availability by Skill Level and District for the Periods 2012-2017 and 2017-2022 (in 000s)

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Ariyalur	11	2	5	**19**	14	1	5	**20**
Chennai	181	17	61	**259**	208	15	79	**301**
Coimbatore	108	13	87	**208**	124	14	95	**234**
Cuddalore	75	8	27	**111**	84	8	30	**123**
Dharmapuri	59	9	17	**85**	57	11	27	**96**
Dindigul	42	7	33	**83**	63	8	21	**91**
Erode	90	7	39	**135**	143	8	1	**152**
Kancheepuram	280	13	108	**401**	237	16	211	**464**
Kanniyakumari	42	10	12	**64**	45	11	14	**71**
Karur	30	2	18	**50**	34	2	20	**56**
Krishnagiri	80	3	23	**107**	90	3	27	**120**
Madurai	97	9	61	**167**	111	9	67	**187**
Nagapattinam	26	5	10	**42**	29	5	10	**45**
Namakkal	44	10	26	**81**	52	12	26	**90**
Perambalur	17	4	4	**25**	18	4	6	**28**
Pudukkottai	34	11	10	**54**	37	14	9	**60**
Ramanathapuram	33	4	15	**52**	39	2	16	**58**
Salem	101	12	52	**164**	119	12	52	**183**
Sivaganga	39	7	20	**66**	46	7	22	**74**
Thanjavur	12	6	43	**62**	32	8	28	**67**
The Nilgiris	-15	2	2	**-11**	-18	1	4	**-13**
Theni	36	5	11	**52**	39	4	15	**58**
Thiruvallur	253	11	76	**340**	279	13	100	**391**
Thiruvarur	20	5	8	**33**	18	5	13	**36**
Thoothukkudi	31	6	19	**57**	24	5	33	**62**
Tiruchirappalli	31	13	58	**102**	56	16	41	**113**
Tirunelveli	63	12	47	**121**	90	13	31	**134**
Tiruppur	98	12	37	**148**	110	12	44	**167**
Tiruvannamalai	69	8	21	**98**	77	10	22	**109**
Vellore	67	12	78	**157**	114	13	47	**174**
Viluppuram	78	5	23	**106**	87	5	18	**111**
Virudhunagar	44	7	15	**66**	46	9	18	**72**
TOTAL	**2,179**	**258**	**1,065**	**3,502**	**2,503**	**278**	**1,152**	**3,934**

Source: Athena Research

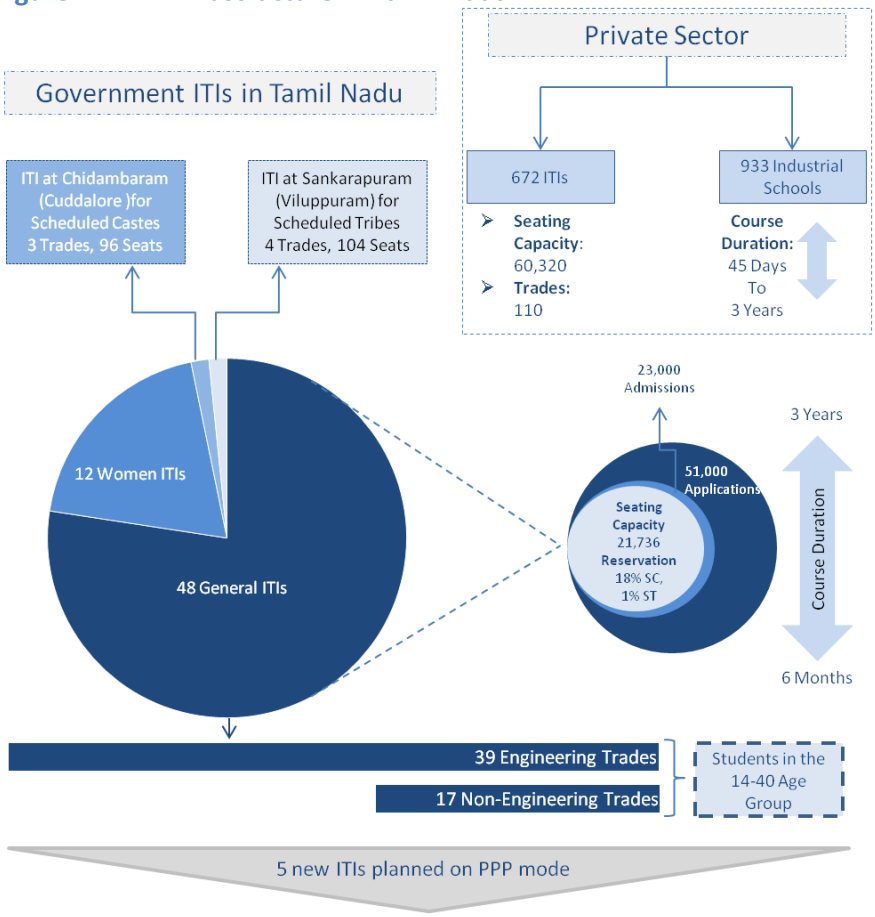
7 SUPPORT

This section examines the framework and mechanisms through which skilling initiatives in Tamil Nadu are implemented. Key aspects of the framework include the infrastructure available to implement skilling initiatives and government schemes by various departments. Skilling policies can be divided into those executed by:

- The Department of Employment and Training under the umbrella of the Tamil Nadu Skill Development Mission
- Other departments independently of the DET
- The central government, or extra national bodies

7.1 Vocational Training Infrastructure

Figure 7.1: ITI Infrastructure in Tamil Nadu



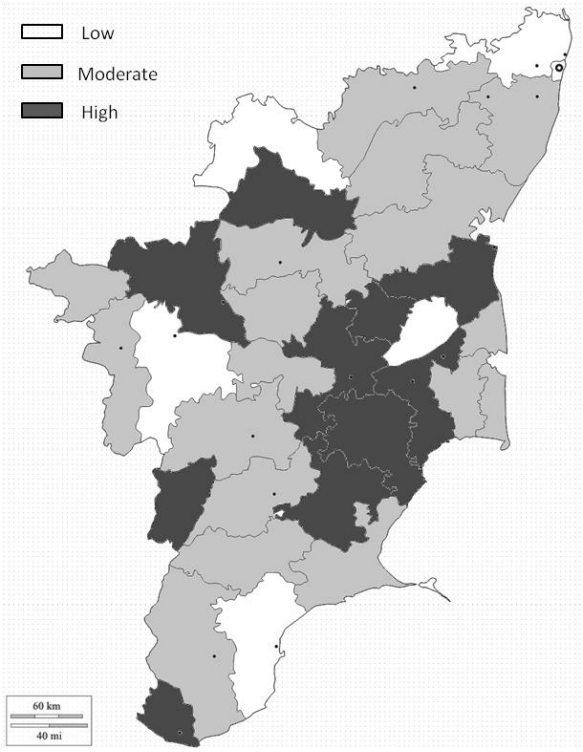
Source: Government of Tamil Nadu (2010), Athena Research

Tamil Nadu has a strong infrastructure for vocational education across districts compared to other Indian states. There are 62 government ITIs, of which 12 are exclusively for women, one is for Scheduled Castes and one is for Scheduled Tribes. The government ITIs offer 39 engineering trades and 17 non-engineering trades to students in the 14-40 age group. The total seating capacity at government ITIs is 21,736. There is an 18% reservation in seats for Scheduled Castes and 1% for Scheduled Tribes. 51,000 applications are received each year for courses

varying in duration from six months to three years. Primary research suggests a strong preference for engineering trades among the students.

A large number of private players operate in the vocational education space in Tamil Nadu. There are 672 ITCs with a seating capacity of 60,320 across 110 trades. There are also 930 industrial schools offering courses varying between 45 days and two years in duration. Additionally, there are 118 community colleges offering courses across different discliplines under the ambit of Indira Gandhi National Open University (IGNOU).

Figure 7.2: Per Capita Availability of Vocational Training Infrastructure in Tamil Nadu



Source: Government of Tamil Nadu (2011)

A number of private players have entered the skill development space in Tamil Nadu, particularly in the IT sector. Datamatics was one of the earliest players to enter this space in the 1990s. Other large skill training providers include NIIT, Aptech, CSC, Brilliant and Datapro. Although the centres are spread across the state, the primary focus of such institutes continues to be in Chennai due to the high requirement for skilled human resources in the IT sector. Training providers such as Veta have focused on English speaking skills, for which there has been tremendous demand. The capacity creation in the skill development space by private players has responded to the youth preference for service sector jobs and the corresponding growth in human resource requirement in sectors such as IT, BPO and BFSI. Specialized skill development programs for sectors such as basic medical services, transcription, KPO, airlines and hospitality emerged in response to growth in employment opportunities in these industries in the early 2000s. However, since the private sector includes a large number of small private players who are a part of the unorganized sector, the exact size of the skill development industry is unknown.

Among the NSDC partners, LAURUS has set up nine centres in seven districts offering courses in trades such as electrician, welding, draughtsmen, mechanic, food production, air conditioning and basic computers. Edubridge has set up centres in backward districts such as Dharmapuri, Tiruvannamalai and Thiruvarur with a focus on service sectors such as retail, BPO, BFSI and sales and marketing. LAQSH, which has set up one centre in

Chennai, also focuses on the BPO, KPO, retail and hospitality sectors and on soft skills. Empower seeks to meet the requirement for IT and software professionals in Chennai and Kancheepuram. ISDC has set up the Chennai IL & FS Skills School where it offers a certificate program for BPO, electrician, welding, debt recovery and sewing machine operator; and Palladam Multi Skill School in Tiruppur offers courses in animation, welding, BPO, civil supervisor, CNC operator, English, fitter and garment engineering, among others. TalentSprint, with two centres in Chennai and one in Virudhunagar provides courses for the BFSI and IT industries. Providers, with centres in Chennai and Sivaganga, offers courses in IT, ITES and hardware. TMI in Chennai seeks to bridge the skill gap for BFSI and sales. B-ABLE has a centre in Nagapattinam for training business correspondents and IIJT has set up one centre at Tiruchirappalli.

The distribution of vocational training (VT) centres across districts based on government statistics is depicted in the figure below. In per capita terms, the availability of training infrastructure is relatively high in districts such as Cuddalore, Dharmapuri, Erode, Kanniyakumari, Perambalur, Pudukkottai, Sivaganga, Thanjavur, Theni and Tiruchirappalli; while it is low for districts such as Ariyalur, Krishnagiri, Thiruvallur, Thoothukkudi and Tiruppur.

7.1.1 Existing Training Schemes

State level skill development initiatives are implemented through the Training Wing of the Department of Employment and Training (DET), which coordinates the efforts of Industrial Training Institutes and Advanced Training Institutes in the skill development space. It is also responsible for collecting data and monitoring Industrial Training Centres and industrial schools. Hence, the DET acts as the nodal agency for all government-led skill development efforts in the state.

The state is divided into five regions: Chennai, Coimbatore, Madurai, Tiruchirappalli and Tirunelveli headed by Regional Joint Directors who supervise the Training activities in both government ITIs and private ITIs. There are 62 government ITIs functioning across the state, each with student strength ranging from 100 to 1000. ITIs are headed by Principals in the cadre of Training Officer/Assistant Director/Deputy Director depending upon the trainee strength.

The Tamil Nadu Skill Development Mission (TNSDM) was instituted to create employment opportunities for unemployed youth in a time bound manner. The steering committee is headed by the Principal Secretary and the Director of Employment and Training acts as the state project director. The Additional State Project Director oversees the operations of the mission under four units – the procurement unit, the finance unit, the institutional development and training unit and the monitoring and evaluation unit. In 2011-12, TNSDM was allocated Rs. 2020.8 lakh for activities such as setting up a world class training institute, developing e-content, creating smart cards for skilled candidates, advanced faculty development institute, conferences and promotion, state skill registry and reimbursement of training costs for 15,000 youth.

The Tamil Nadu Skill Development Mission is envisaged to enter into partnerships with industries to identify skill gaps and design course material for Modular Employable Skills (MES) courses. Under the approach to the 12th Plan for Tamil Nadu, a Faculty Development Institute under Public Private Partnership (PPP) is planned in order to meet the shortage of quality trainers in the state. TNSDM will also create the Tamil Nadu State Skill Registry to collect and monitor skill data. A world class training institute is proposed to be set up under PPP as a Centre of Excellence to train students in specialized skills in areas such as aircraft maintenance, manufacturing, shipping and servicing with international certification.

Major Existing Training Initiatives

- Craftsmen Training Scheme
- Apprenticeship Training Scheme
- Industrial Schools

- Skill Development Initiative-Modular Employable Skills
- Centres of Excellence
- Upgradation of Govt ITIs under Public Private Partnership (PPP) mode
- Skill Initiatives of TNSDM

Craftsman Training Scheme
- Focus on less privileged sectors of society - Aims to ensure steady flow of human resources with close industry interaction - Stipends for trainees range from Rs.100/- to Rs.175/- a month; poorer students are given two sets of uniforms, a pair of shoes, free training, and a free bus pass - Award schemes for instructors, and refresher training programs are organized for instructors at central training institutes and advanced training institutes
Apprenticeship Training Scheme
- Trainees sponsored as apprentices to industrial establishments for 6 months – 2 years - Over 110 trades represented at 1868 industrial establishments - 11,628 apprentices currently in training - Stipends range from Rs. 1490/- to Rs. 2220/-
Examinations
- All India trade test - 31,831 trainees appeared to earn National Apprenticeship Certificate - Wireman helper competency examination is held once in three years - Eligibility requires trainees to be of 21 years of age, with 5 years of experience - So far 4586 candidates appeared, 2521 were successful
Skilling Initiatives
- Total outlay of Rs. 1.20 crore - Plans for a vocational training institute for high technology aircraft manufacture and maintenance for DGCA in consultation with the CII - E-Learning initiatives for 10 trades identified by industrial partners - Smart cards are issued to trainees - Associated faculty development institute is also being planned in consultation with the CII - Curriculum changes emphasizing soft skills have been proposed for implementation in arts and science colleges in association with CII and NASSCOM
Modular Employment Skills
- The emphasis of this scheme is on short term skill programmes - Trainees are given minimum skills required for employability - 100% funding by the central government in terms of remunerating training institutions for their costs - Training is free for any trainee who has passed 5th std
Development of Centres of Excellence
- This policy was announced in 2005-06. Initially, five ITIs were upgraded to centres of excellence at a cost of Rs. 1.6

crore per centre - Since 2006-07, the World Bank has funded this project, at a total outlay of 3.5 crore per centre - 17 ITIs are currently under upgradation - Of a total outlay of Rs. 49.49 crore, Rs.41.08 crore has been spent
Upgradation of ITIs under Public Private Partnerships
- 32 ITIs are under upgradation in partnership with private players - Total outlay of 80 crores - Emphasis is on industry partnership

7.2 Policy Initiatives in Skill Development by State Government Departments

A number of schemes have been undertaken by various departments of the state government to increase opportunities for skill development, thereby enhancing employability for different target groups. In this section, these schemes have been described based on their sector focus.

7.2.1.1 Welfare Schemes

Tribal Welfare: Centres for skill development have been set up at Ooty and Sankarapuram. Programmes include textiles, leather, hospitality, health, soft skills and language. 25,000 candidates are trained each year. Free training is provided along with a monthly stipend. 50% of the candidates are assured employment. The total outlay for the programmes by Tamil Nadu Adi Dravidar Housing Development Corporation (TAHDCO) is Rs. 25 crore.

Differently Abled Persons: A number of schemes are in effect in 12 districts, including Chennai. Skill development for differently abled persons is provided by Non-Governmental Organizations (NGOs) in the remaining districts. The total outlay for the scheme is Rs. 3,344.43 lakh. The courses vary in duration between three months amd two years in fields such as medical technology, electronics, computers, teacher training, book binding, teacher training, chalk training, weaving. Trainee strength varies from 10 to 456 across programmes.

Women and Child Welfare: The Women and Child Welfare Department has set up teacher training institutes, where 40 candidates are drawn from government homes for two-year courses. The total outlay of the scheme is Rs. 9.23 lakh. 25 tailor training centres have been set up in 19 districts for 500 trainees. Centres have been set up at Salem, Namakkal and Tiruvannamalai focusing exclusively on tribal women. Vocational education is also provided to 120 children from government homes under the *Jan Shikshan Sansthan* in courses such as tailoring, computers and beautician. Smaller schemes train children from government homes in batches of 10 children in bakeries run by the Chennai Mission. Additionally, the Rajiv Gandhi National Insitute of Youth Development at Sriperumpudur trains 113 youth, at a total cost of Rs. 0.73 lakh. The Department of Employment and Training set up the Community Polytechnic Scheme, which has 21 trainees in trades such as wire bag manufacture and knitting. Children/women discharged from government homes are provided vocational education and training in services and repair at a total cost outlay of Rs. 17.76 lakh.

7.2.1.2 Primary Sector

Agriculture: Several farmer training centres have been set up with courses on integrated pest and nutrient management, agro processing and marketing. Seed training programmes with a total outlay of Rs. 57.25 lakh have trained 43,970 people. The National Food Processing Mission is building infrastructure for courses in food processing, and is launching a food processing training centre and entrepreneurship development programme.

Animal Husbandry: Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) has set up skill development programmes and training programmes under the Directorate of Distance Education.

Fisheries: Rs. 50 lakh has been invested in providing maritime education for youth, in batches of 100 students. The Fisheries Institute of Technology and Training has trained 3,002 candidates in fishing and maritime education. A Tamil Nadu Fisheries University has been proposed for imparting such training to a larger section of the population.

Forests: The Tamil Nadu Forest Academy in Comibatore and the Tamil Nadu Forestry College at Vaigai Dam offers 18-month training programs for rangers, six-month programs for foresters and a one-month course for forest watchers. Special courses with a duration of 1-10 days are also offered. Combat training for guards is provided at total outlay of Rs. 2.10 lakh.

7.2.1.3 Secondary Sector

Khadi, Handloom and Cottage Industries: Courses for manufacturing brass and copper articles at Nachirakoil, Swamimalai and Thanjavur with duration of three years, two years and one year, respectively, are offered. The total outlay for this scheme is Rs. 20 lakh. Additionally, training for palm product manufacturing is provided by the Indian Institute of Handloom Technology in Salem through three-year diplomas for 77 students. The students are paid monthly and annual stipends during the course of the program.

Department of Micro, Small and Medium Enterprises: The Government Technical Training Centre provides courses varying in duration from one to three years. Students are trained in batches of 80. The Institute of Ceramic Technology at Vridhachalam offers a 3.5 year diploma for batches of 60 students. The Government Scientific Glass Training Centre offers a two-year certificate course. The Entrepreneur Development Institute is currently implementing central schemes like Prime Minister's Employment Generation Programme (PMEGP) and Unemployed Youth Employment Generation Programme (UYEGP) to train 49,347 students. Rs. 4 crore has been allocated for the development of a new complex at Guindy in Chennai.

Cooperatives: 20 Cooperative Management Institutes have been set up under the Tamil Nadu Cooperative Union for training 1,241 students. Three cooperative ITIs have been set up at Dharmapuri, Virudhnagar and Thanjavur, and one cooperative polytechnic at Tiruchurappalli. There are two Institutes of Cooperative Management at Chennai and Madurai supported by the National Council for Cooperative Training.

7.2.1.4 Tertiary Sector

Education: 30 district institutes of education and training have been set up under the State Council for Education, Research and Training (SCERT). In addition, nine government teacher training institutes, 43 aided institutes and 680 self-financed, two year courses with an intake of 49,000 are available for education training. A high skill training centre has been set up at Salem with the Tamil Nadu State Council for Higher Education (TANSCHE) offering schemes for teacher training for higher education.

Information Technology: The ICT Academy has been set up in PPP model by the Tamil Nadu government and the Confederation of Indian Industry.

Tourism: The Anna Institute of Management offers a Guide Training Programme, where 264 candidates have been trained. Capacity building programmes with the Institute of Hotel Management (IHM), Chennai and Tiruchirappalli, for the hospitality and logistics sectors, are also offerd. The central government's Hunar se Rozgar Tak Scheme focuses on the hospitality sector, and has trained 3,337 candidates.

Transport: The Institute of Road Management has set up a heavy vehicle driver training centre in Gummidipoondi and light vehicle driver training centres at Taramani, Chennai and Tiruchirappalli. 19 district headquarters have heavy motor vehicle driving schools. The Madras Flying Club has flight and aircraft maintenance training with an outlay of Rs. 7.52 lakh.

Health: Continuing health education programs are provided at several centres to implement central schemes such as the Reproductive and Child Health (RCH) Program and the National Rural Health Mission (NRHM). Training programmes are also provided under the Directorate of Public Health through eight training centres and 10 rural health training centres with a total outlay of Rs. 24.9 crore.

Administration: Training and upskilling of government employees, from state to panchayat level, is also undertaken at Chennai.

7.2.1.5 Rural Development

One State and five Regional Institutes of Rural Development focus on training administrative staff involved in implementing state and central rural development policies. There are 15 training programmes with each institute having an outlay of Rs. 10 lakh, and a total outlay of Rs. 23.75 crore has been proposed to strengthen the infrastructure.

The Youth Skill Training programme with its emphasis on minorities and backward classes has an 80% placement record and offers a monthly stipend of Rs. 4000. A skill voucher scheme has been instituted for 25,000 youth with a total outlay of Rs. 20 crore.

Enterprise Development Training and the Pudhu Vazhu Project, which is supported by the World Bank, emphasise on skill and entrepreneurship development. The total project outlay is Rs. 3,888.15 lakh. 1,70,063 people have been trained and 1,43,709 have been employed through these schemes.

The Tsunami Rehabilitation programme provides courses varying in duration from three months to one year and assures employment to youth in affected areas.

7.3 Other Prominent Skill Development Initiatives

7.3.1 Pudhu Vaazhvu

The PudhuVaazvhu Project was set up in 2005 with the assistance of the World Bank and started operating officially in August 2006. Primarily a poverty alleviation project, the day to day operations are coordinated and administered by the Rural Development and Panchayat Raj department of the government of Tamil Nadu. The project was initially commissioned to be implemented over a six year period, from 2006-2012; however, owing to the success of the project and the increased scope for project implementation, additional funding has been acquired through the World Bank and the project has been extended till 2014. The project currently covers 4170 Village Panchayats across 26 districts of Tamil Nadu.

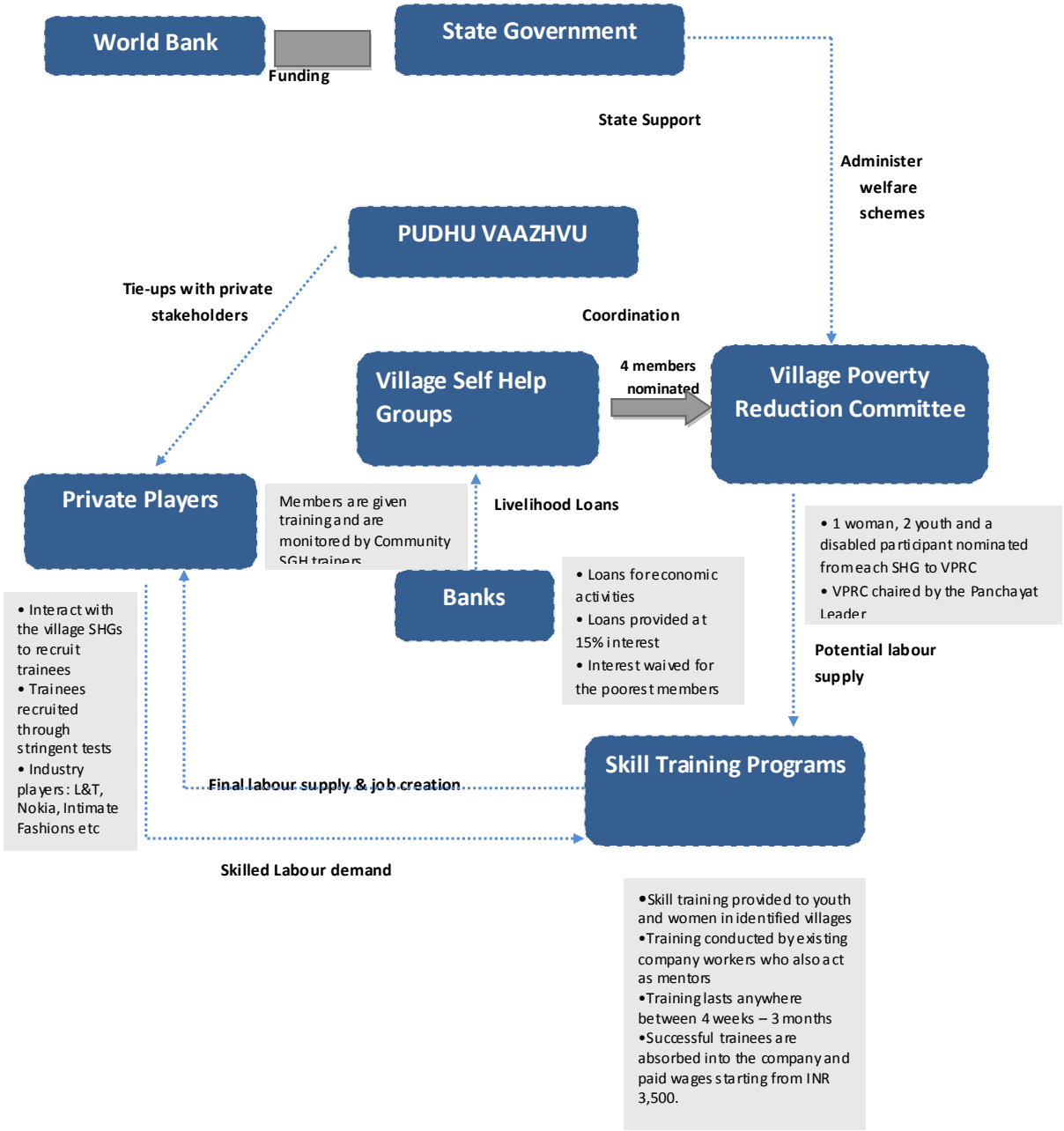
One of the significant features of the PudhuVaazvhu Project is its ability to reach the target population effectively, with virtually no leakages in the system. The unique project design was centered on the concept of a Village Poverty Reduction Committee (VPRC) which ensures that the benefits accrue to the intended recipients - this has been crucial for the success of the program.

7.3.1.1 Project design

The project has been designed to ensure minimum external intervention or involvement of third parties. The project is funded (in major) by the World Bank and in part by the Government of Tamil Nadu and through community contributions. Of the total INR 1,667.1 crore, the World Bank contributes about 80%, while the government of Tamil Nadu contributes 15.3%, and the remaining 4.7% is contributed by the community participants.

Operationally, too, the project involves limited external support. Backward districts and the poorest villages are identified by the state government officials, upon which, Self Help Groups (SHG) comprising 10-15 members each, are formed by the villagers themselves. The SHGs are initiated into the process by external SHG trainers identified by the Pudhu Vaazvhu team. The SHG trainers also provide them with adequate guidance and monitor their activities during the initial period. Further, SHGs receive financial support in the form of bank loans to start new enterprises and expand their existing economic operations. Loans are typically handed out for dairy and other household industrial operations and have high interest rates. The high interest rates coupled with the added social pressure from the group ensures that the loans are repaid in full, including interest. Various activities and monetary transactions of the SHGs are monitored by one female member elected by the Self Help Group participants. This SHG leader is assisted by two youth participants and one disabled participant from the SHG; these four participants are nominated to the Village Poverty Reduction Committee (VPRC). The VPRC is composed of four such participants from each SHG in the village and is chaired by the Panchayat leader. The VPRC in turn, is in charge of overseeing the operations of all the SHGs and coordinating with the PudhuVaazvhu team to ensure that all the programs are being implemented uniformly across the villages.

Figure 7.3: Stakeholder Model for the PudhuVaazvhu Project



Source: Athena Research

The VPRC functions as an important and effective intermediary for the State Government – welfare schemes in the state are channeled through the VPRCs. The VPRC creates awareness among the villagers about existing welfare schemes and ensures that the benefits accrue to the intended recipients.

7.3.1.2 Skill training initiatives

In order to ensure that the villagers across different districts of the state are employable, the PudhuVaazvhu Project collaborated with various private players to provide focused short term skill training programs. The first partner for the skill training initiative designed by the PudhuVaazvhu coordinators was Larsen & Toubro. The

VPRCs disseminate information about skill training programs conducted by private players, upon which interested youth participants are tested by the company officials. Those who pass the test are recruited for training. The training program is typically a short term, intensive course with the course duration varying between four weeks and three months. Participants who complete the training program are absorbed by the company and are provided employment. On account of the intensive nature of training and the various fringe benefits provided by the company, most of the recruits tend to stay with the company for at least a year before looking for better job opportunities.

The youth skill training program has evolved and expanded over the years to include training in various trades across different sections of the village population. As of 31st March 2012, 1,70,063 candidates were trained across the state by PudhuVaazvhu and various industry players.

Table 7-1: Skilling by Pudhu Vaazvhu in 2012

Skilling Course	Number Trained	Number Placed	Conversion Percentage	Salary Range (per month INR)
Cell Phone Production	4876	4468	91.6	4000-9000
Computer Skills	17,351	12,322	71.02	3000-8000
Construction Skills	7625	6741	88.41	6000-12000
Garment Making	38,533	33,724	87.52	3500-6000
Industrial Mechanism	9085	7537	82.96	5000-7000
Leather Products	5329	4238	79.53	3500-6000
Light & Heavy Vehicle Operation	59,440	50,757	85.39	4000-12000
Medical Application	6932	5011	72.29	3500-6000
Other Training	20,982	18,911	90.13	3500-6000
Total	**1,70,063**	**1,43,709**	**84.5**	

Source: Annual Action Plan for 2012-2013 on Skills and Placements, TN State Rural Livelihoods Mission & Athena Research

The success of these skill training programs is evident in the fact that the conversion rate from training to placement is quite high – 84.5% of trainees are placed in various positions across several reputed companies. Cell phone production training provided by big players such as Nokia, Motorola and Samsung has the highest trainee to employee conversion rate at 91.6%, which may be explained by the more targeted trainee selection process practiced by these companies. Computer skills training provided by IL&FS on the other hand has the lowest conversion rate; it is possible that trainees do not possess specific technical skills along with computer skills, which may reduce their employability. While computer skills are a prerequisite for employment in many companies, possessing computer skills alone may not be enough to acquire jobs. Overall, however, the skills training programs administered seem to be fairly successful and create sustainable linkages between the job providers and seekers within the labor market.

7.3.2 National Institute of Technical Teachers Training and Research, Chennai

Set up as an autonomous institute by the Ministry of Human Resource Development (MHRD), Government of India (GOI) in 1964, the mandate of the National Institute of Technical Teachers Training and Research is to improve the quality of the Technical and Vocational Education and Training (TVET) system in south India by training polytechnic teachers in education, planning, management, curriculum development and research. Similar bodies have been set up in Bhopal, Chandigarh and Kolkata. These institutes offer training courses for teachers, design curricula, offer need-based human resource development programs, offer consultancy services to industry, promote research and collaborate with national and international institutes interested in TVET.

NITTTR Chennai imparts training to the teachers in both engineering and polytechnic colleges across the country. It also updates and redesigns the curriculum for state government-run polytechnic institutes once every

four years. Recently, it has also started designing a specific training the trainer module for skill development in five focus sectors – automobiles, textiles, electronics, healthcare and leather products in collaboration with NSDC and industry partners. The program curriculum for these courses has been submitted and is currently under review by the concerned agencies. Government ITIs and polytechnic colleges are supposed to have their trainers certified by institutes like the NITTTR.

7.3.2.1 Skill Development Initiatives

Most of the programs currently offered by NITTTR are short-term courses for teachers in polytechnic and engineering colleges, as not many students are interested in enrolling in one-year diploma programs. With the exception of the finishing school program, most of the courses are targeted at teachers in government institutes. Recently, however, the training program services have been extended to include private college teachers too. Sometimes, requests from specific industry committees or companies are received for conducting training programs to train their trainers. Admissions are fairly well-distributed across all the courses since they have been developed in response to demand for training.

Pedagogical and Technical Training

There are two types of mainstream short-term courses for existing teachers in engineering and polytechnic colleges: pedagogical training and technical training. The pedagogical training course trains teachers in delivery methods for their course material. While arts and science colleges have several teacher training programs, there are no such programs for teachers in engineering and polytechnic colleges. This course attempts to bridge this gap to the extent possible through wide-reaching programs.

In an effort to meet the high demand for such training, NITTTR has also started disseminating web-based lectures for this program, wherein the lectures held in Chennai are transmitted to five or six other polytechnic colleges across the state simultaneously via video conference. Teachers within a 50 kilometre radius of these polytechnic colleges attend the web-based lectures at these institutes. The training program lasts for 14 days and each batch has about 300 participants.

The second type of program is more technical and is related to updating the trainers about the latest industrial and technological developments.

Special Training for Principals

NITTTR also provides special training for the principals of these engineering colleges and polytechnics in areas such as infrastructure management, regulatory practices and course design. The purpose of such training is to help them manage their own institutions.

Finishing School

The one-month finishing school program is targeted at students who aspire to be teachers. In the first two weeks, they are trained in different pedagogical approaches. In the last two weeks, they make industrial visits and are taught to operate the latest equipment available in order to familiarize them with the current industrial scenario.

The students are also taught by the NITTTR's industry partners such as Everonn, Wipro and National Instruments. Courses are offered in three fields – civil engineering, mechanical engineering and electrical engineering. The program is targeted at people who aspire to be teachers. This program provides a starting point for entering the teaching industry.

Overseas Teachers' Training Program

The overseas teachers' training program provides training to teachers from other countries – mostly Asian. Students undergo a three month training program in sustainable development and millennium development goals related to education. Each year, about 30 participants from 42 different countries enroll in this program. The courses offered are based on demand and utility for the participants.

7.3.2.2 Operational Model

NITTRs across the country fall under the mandate of the HRD ministry, government of India. It has been accorded the status of a Nationally Important Institute in the field of training the teachers. Each institute is headed by a director. There are 10 departments headed by a professor, along with two associate professors and two assistants. There are also extension centres in Bangalore, Cochin and Kerala to coordinate the administration of these courses in their respective states. About 120 people work as support staff for the institute.

7.3.2.3 Infrastructure

NITTTR has smart classrooms, video production facilities, exclusive multimedia labs and training kits, that help the trainers to further understand and absorb new technical and pedagogical information. The Virtual NITTTR allows students to access lecture material and revisit old lectures.

7.3.2.4 Curriculum Design

On the pedagogical front, the curriculum for the trainers is designed on the basis of interactions with current teachers, experts in the teaching field and teaching methods applied in other countries. These are regularly updated so that the trainers are in a position to provide the best possible training.

On the technical front, industry partners are consulted about the latest developments in their field and demand drivers. In particular, information about the current knowledge gaps is sought so that it can be incorporated into the courses to ensure that these gaps are bridged.

7.3.2.5 Accreditation

The trainers who complete NITTTR programs are provided certifications by the institute, which are recognized by the AICTE since NITTTR is a government initiative. This certification is not equivalent to a formal education degree since the programs are taught for a short duration. But the AICTE recognition ensures that these certificates are valid and enables these trainers to be credibly certified in their areas of expertise.

7.3.2.6 Retraining

NITTTR attempts to ensure that the courses are constantly updated, particularly in advanced disciplines. Often the trainers feel the need to update themselves, in order to be at par with new industrial developments.

NITTTR practices a micro training program. After completing a course, certified teachers have the option of returning to the institute to hone their teaching skills and technical expertise further through re-tests and re-training procedures. This approach is widely practiced, especially by trainers in more technologically advanced fields such as nanotechnology and GIS.

7.3.2.7 Placements

NITTTR does not have a formal placement cell, because most of the programs have participants who are already employed as teachers. For programs involving lengthy interactions with industry experts, the students often manage to secure jobs with these companies as training providers.

7.3.2.8 Industry Focus

Earlier, the programs were ad-hoc and were guided by current industry requirements. With the formation of the National Skill Development Mission, however, NITTTR has reoriented its focus to five major growth sectors: automobiles, electronics, textiles, leather products and healthcare.

The highest requirement for trainers is expected in three sectors – automobiles, textiles and electronic products, where constant innovation requires regular up-skilling of workers. Trainers are required for effectively imparting advanced skill programs to their students. Training urban migrants can help channel the excess inflow of migrants productively.

7.3.2.9 Financial Model

Each course, including the travel and accommodation arrangements, costs the institute about INR 1 lakh. However, the institute is entirely funded by the government. Each NITTTR receives INR 6-10 crore annually from the HRD Ministry to carry out various operations associated with training classes. Approximately 30% of this budget is used to pay out salaries, 30% is used for creating new infrastructure capacities, 25% is used for financing the costs of conducting training classes and the remaining 15% is channeled to set up new initiatives such as online web classes and portals.

As a nationally important institute, NITTTR needs to create centres of excellence to carry out its training programs. A lot of the costs are directed towards creating a modern, well equipped infrastructure facility wherein the participants can gain as much useful, practical information as possible. Because of the high costs associated with creating such infrastructural capacities, it has now been proposed that the institute partner with various companies on a 50:50 basis to create centres of excellence which can be accessed by both NITTTR and the contributing company to train candidates.

8 YOUTH ASPIRATIONS

8.1 Findings

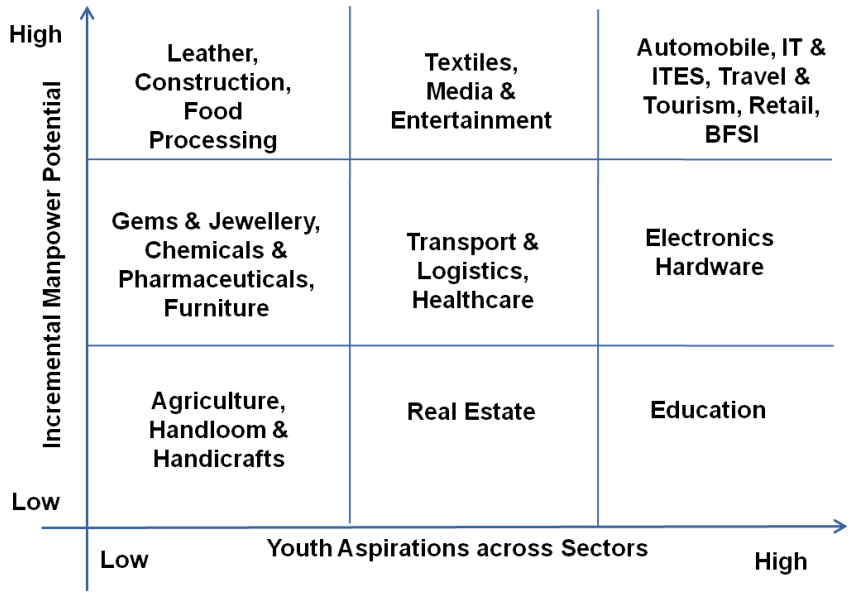
8.1.1 Sector Inclinations

A number of interesting trends emerged from the youth aspiration study conducted as a part of the skill gap assessment for Tamil Nadu.

There is a strong preference for service sector industries such as IT, ITES, BFSI, hospitality and retail, due to the better work environment compared to factories and manufacturing sector jobs. The low dignity associated with blue collar jobs acts as a deterrent to vocational education. There was a also a strong interest in growing sectors such as automobile and electronic hardware, but the respondents aspired for middle manager jobs as opposed to shop floor work, even if they were training for such jobs. There is a strong inclination towards textiles, education and healthcare among women. However, there is very low interest in traditional, labor-intensive industries such as leather. None of the respondents were interested in pursuing agriculture or handicrafts.

Based on the estimated human resource requirements and the results of the youth aspiration study, the sector skill gaps have been identified in the table below. While youth aspirations and infrastructure creation for skill development are correlated, there are gaps between industry requirements and youth aspirations that need to be bridged through the creation of skill infrastructure and targeted student mobilization activities such as awareness campaigns and student interactions in sectors such as leather, construction and food processing.

Figure 8.1: Youth Aspirations by Sector



Source: Athena Research

Table 8-1: Mismatch in Youth Aspirations and Industry Requirements

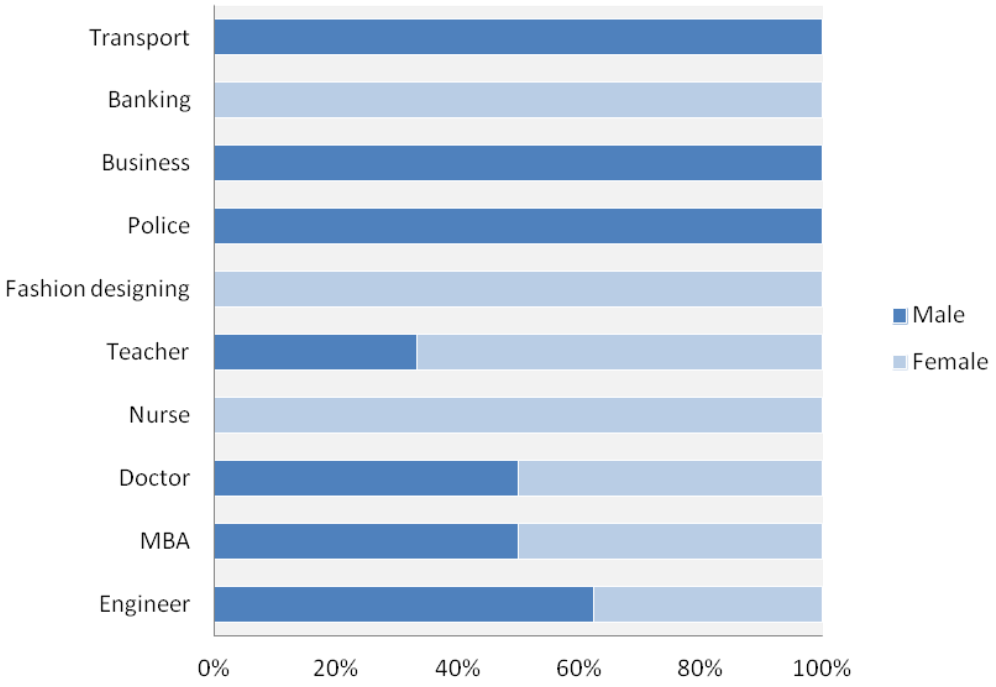
Youth Aspirations	*Infrastructure Availability*	*Industry Demand*
Engineering	***Engineering***	***Engineering Goods***
IT, ITES	***IT, ITES***	***IT, ITES***
Automobile	***Automobile***	***Automobile***
Electronics Hardware	***Electrical***	***Electronics Hardware***
Retail	***Retail***	***Retail***
Hospitality		***Hospitality***
Transport		***Transport***
BFSI		
	Textiles	***Textiles***
		Leather
		Construction
		Food Processing
GAPS: Leather, Construction, Food Processing		

Source: Athena Research

Similarly, there is a gap in the level at which the youth aspire to enter the profession. The youth aspiration study revealed an aversion for blue collar jobs and a strong preference for white collar jobs, while industry human resource requirement is expected to grow at the semi-skilled level.

There are significant differences in career aspirations across educational levels (vocationally or formally educated), employment status (employed or unemployed) and genders (male or female) that emerged during the FGDs which have been detailed in the following section.

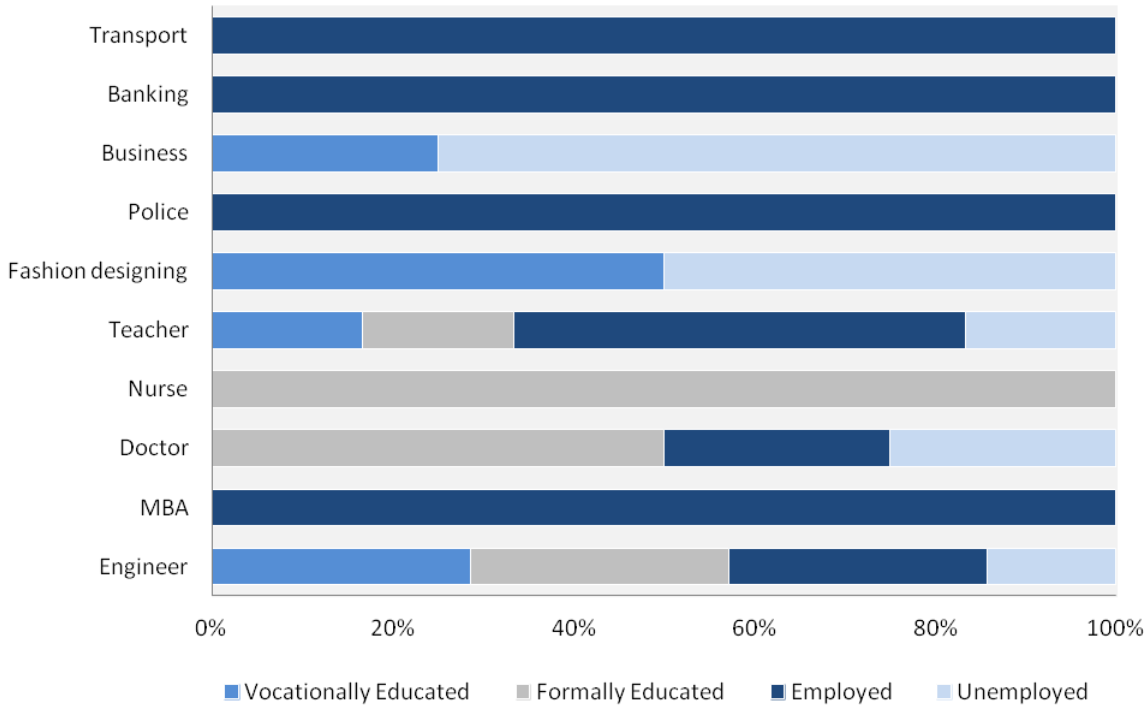
Figure 8.2: Career Aspirations by Gender



Source: Athena Research

Women displayed a preference for careers that allowed some level of flexibility in work conditions and timings, permitting them to balance personal and professional lives. A number of the women expressed an interest in professions such as nursing, garment making or banking services. Their career choices were also influenced by their low willingness to migrate to other parts of the state and their inclination towards social services. Men, on the other hand, preferred occupations that involved travel and were willing to migrate to other districts for work, provided they were compensated for the increased cost of living associated with living away from home. Popular occupational choices among the male respondents included transport and logistics services. They also displayed an inclination for professions traditionally associated with a high degree of prestige and independence, such as engineering jobs and owning independent businesses.

Figure 8.3: Career Aspirations by Gender



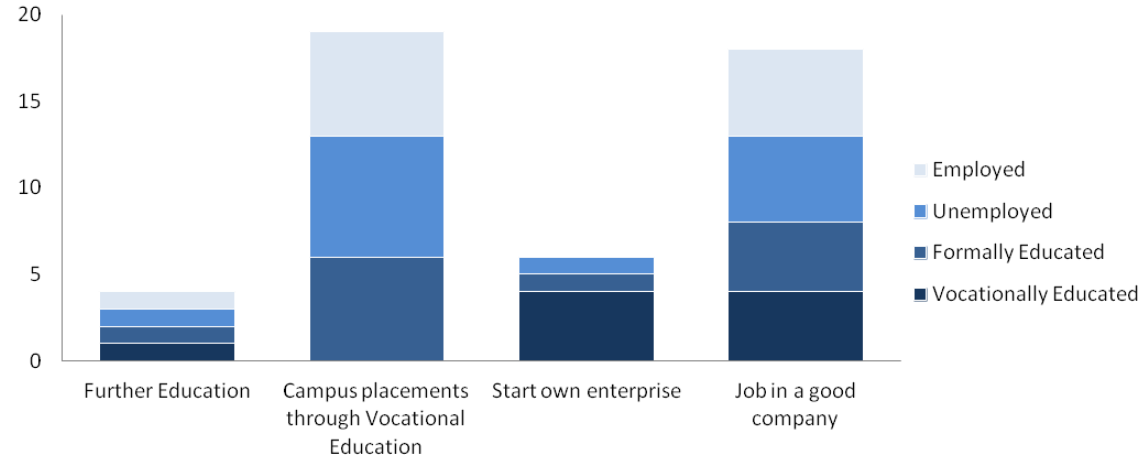
Source: Athena Research

Engineering, teaching and joining the police force seemed to be equally popular across all four cohort groups – vocationally educated, formally educated, employed and unemployed – while professions such as nursing and banking found limited appeal. Those who were unemployed preferred to work towards an MBA degree and start their own enterprises, suggesting increasing interest in entrepreneurship in order to be less reliant on the job market and job providers.

8.1.2 Career Plans

The career choices were strongly influenced by expected salaries, particularly for the male respondents and unemployed respondents. Males expected higher salaries for the occupations chosen, the average monthly salary expectation from their first jobs among men was 1.25 times higher than the average salary expected by women who participated in the FGDs across rural as well as urban areas.

Figure 8.4: Career Plans by Cohort



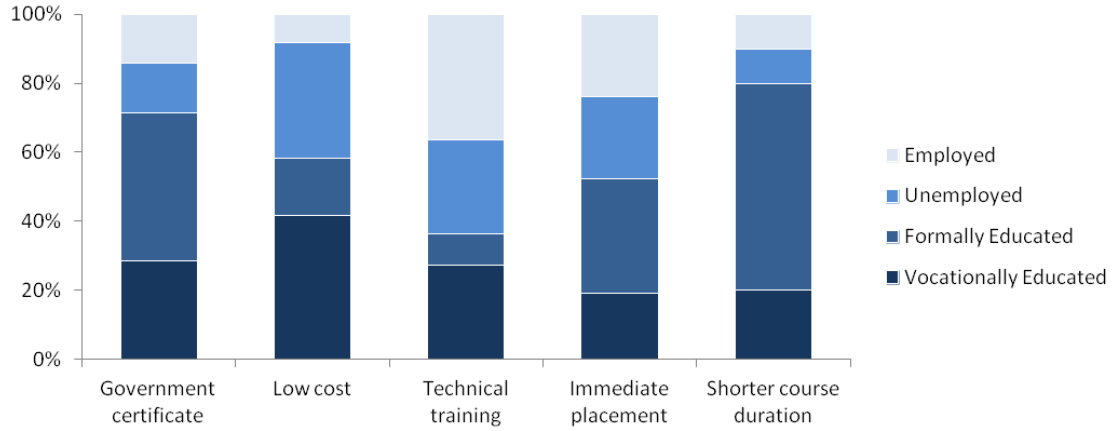
Source: Athena Research

Additionally, interesting trends were also observed across the four groups with respect to career planning methods. Although each cohort group expressed a desire to obtain prestigious jobs with good companies, those who were vocationally educated displayed the strongest inclination to set up their own businesses. A large proportion of the respondents in the vocationally educated and the unemployed groups recognized the benefits of vocational education in the form of increased employment opportunities, lower opportunity cost due to shorter course duration and lower cost of education. However, those who were formally educated displayed a strong preference for formal education. Some of those enrolled in vocational educated also saw their courses as a means to obtain admission into an engineering college, indicating the mismatch in the intended purpose of the course and youth perceptions of benefits. Insufficient linkages and informational asymmetries between formal education and employment opportunities were acknowledged.

8.1.3 Assessment of Skill Development Infrastructure

There is greater credibility and prestige associated with a government certificate from an ITI as compared to private vocational education, highlighting the need for formal accreditation systems to prevent unscrupulous players from exploiting the students. In the absence of adequate information and signalling mechanisms to judge the quality of training provided by private skill development institutes, there appears to be some trepidation associated with enrolling in private vocational courses. The lack of regulation and information has also prevented vocational education from gaining acceptance as a viable alternative to formal education, despite an understanding of the benefits associated with skill development in the form of employment opportunities.

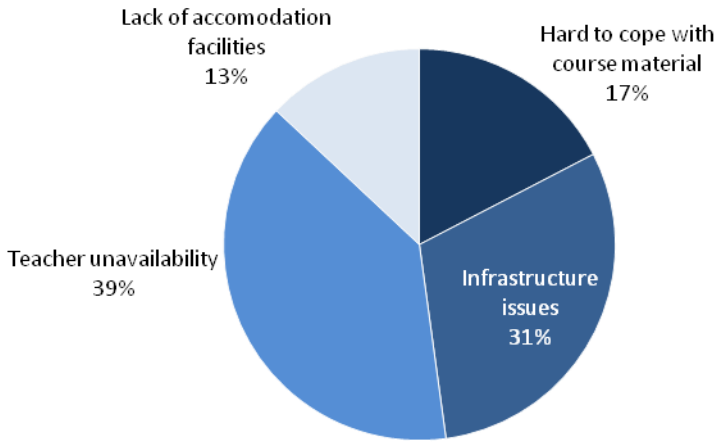
Figure 8.5: Perceptions of the Benefits of Vocational Education



Source: Athena Research

The vocationally educated group described problems with the existing training infrastructure in the state. One of the most important problems cited by the respondents was the non-availability of teachers. Students were unable to prepare for examinations in the absence of proper instruction. The non-availability of uniforms, updated machines and tools and safety gear was the also a frequently cited problem. The outdated equipment used for practical lessons often rendered their knowledge redundant when recruited for apprenticeships, as they were required to learn how to operate equipment afresh on the factory shop floor. Some of the students enrolled in vocational education also expressed their inability to cope with the course material for vocational education, highlighting the existing quality gap between basic education and the technical training curriculum. Incentives such as stipends, uniforms and laptops appear to have been successful in attracting students to ITIs. However, the impact of such schemes on dropout rates or completion rates is unclear.

Figure 8.6:Problems Identified with Existing Vocational Education Infrastructure



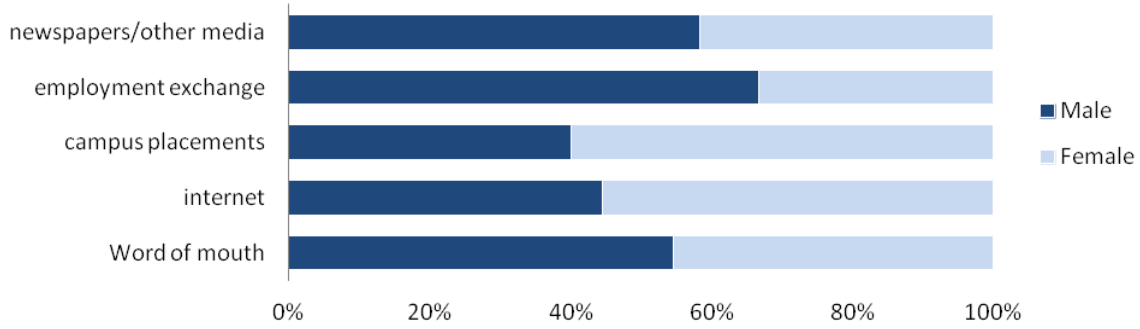
Source: Athena Research

Student mobilization continues to be a challenge for private as well as government skill training providers. The sections of the youth population that displayed the highest level of interest in skill development are the

vocationally educated, the unemployed and those employed at low skill jobs. In order to position skill development as a means for upward mobility in jobs, these groups must be targeted by effectively tapping existing information networks. Word of mouth is the most popular channel for information about education opportunities, followed by newspapers and other media.

Information about jobs is usually sought through campus placements and the media. The internet is slowly gaining popularity as a mode of information, particularly in urban areas. In rural areas, however, the lack of access to the internet restricts the possibility of large-scale information dissemination through an online platform.

Figure 8.7: Preferred Information Channels for Jobs by Gender

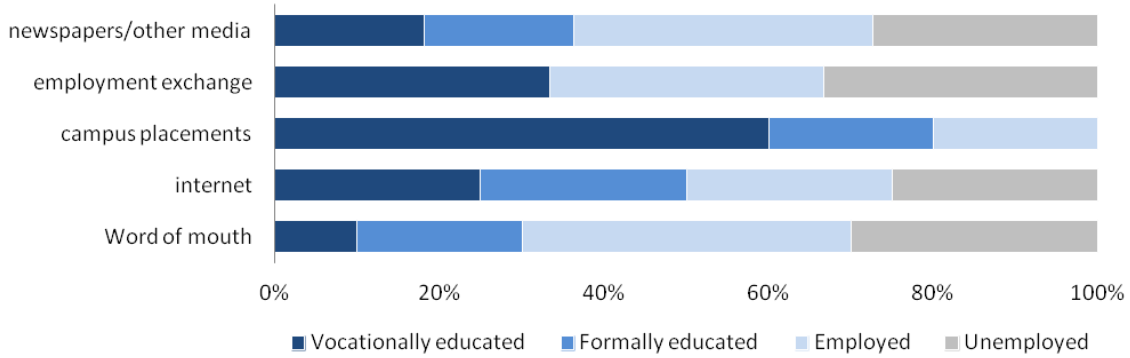


Source: Athena Research

Employment exchanges and word of mouth appear to be used by a relatively larger proportion of the men while women appear to prefer more passive information sources such as the internet and campus placements.

Across the four groups, a large segment of the vocationally educated group relies on campus placements for information on job opportunities. Those who are unemployed are most likely to use employment exchanges to garner information on job openings. The formally educated group does not use employment exchanges, favouring the media and the internet for such information. The high reliance on word of mouth for information indicates the influence of local level information networks, the lack of alternate sources of reliable information and the informality of hiring processes.

Figure 8.8:Preferred Information Channels for Jobs by Gender

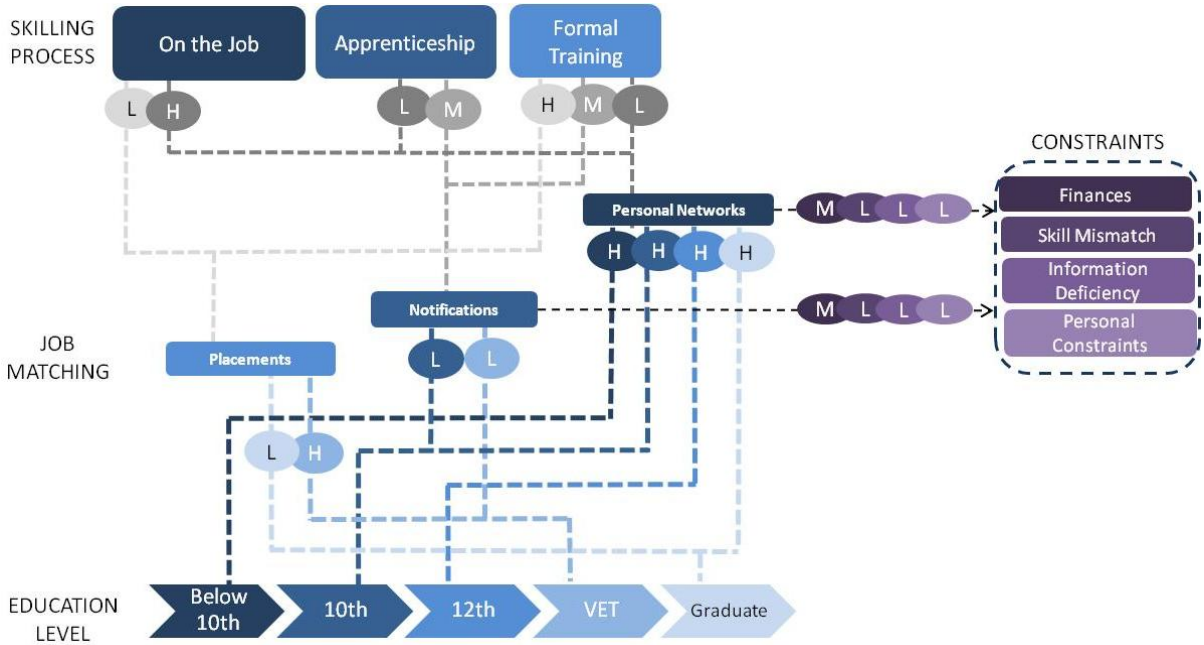


Source: Athena Research

8.2 Skilling Tree

The following diagram illustrates the matching and skilling process as reported by the employed and unemployed groups. H indicates a high proportion, M indicates a moderate proportion and L indicates a low proportion of the respondents.

Figure 8.9:Skill Acquisition Tree and Skilling Constraints



Source: Athena Research

Those in the employed group who had completed the 10th grade usually used personal networks and word of mouth to search for employment. Of those who had passed the 10th grade, 83% used personal networks while 17% used notifications and advertisements. The vocationally educated and the employed groups primarily (93%) used placements provided by their institutions, while the remaining 7% used notifications and advertisements. Employed, graduates were almost evenly split between placements (45%) and personal networks (55%).

The skilling process for those who used personal networks was split between on the job training (55%), apprenticeships (28%) and formal training (17%). Those who found employment through notifications were split evenly between apprenticeships and formal training programs. Those who found employment through placements were mainly trained via formal training programmes (84%), while 16% were trained on the job.

Of the unemployed group, 73% used personal networks while the remaining 23% used notifications and advertisements. Nearly half of those who used personal networks cited financial constraints in pursuing future skilling. 10% mentioned a mismatch between their current skills and the jobs they came across, 28% reported a dearth of information and the remaining 18% reported personal constraints. 40% of those who used notifications and advertisements reported financial constraints, 28% mentioned skill mismatches with available jobs, 20% reported a lack of information and the remaining 12% cited personal constraints.

The availability of employment opportunities is not an impediment to skilling, but the general socioeconomic climate affecting the respondents is a major obstacle to further skill acquisition. Among those who pass the 10th grade, personal networks and the externalities of a common job search are likely to account for the high proportion of those who find employment through word of mouth. The trend is repeated for those who pass the 12th grade. The vocationally educated and employed groups almost entirely relied on placements, and the nature of their information channels is unclear. However, placements do not fully employ the pool of candidates, since a small proportion of the vocationally educated respondents used personal networks. Among graduates, less than half were able to find employment through campus placements.

Many of those employed at in low skill jobs like shop assistants, helpers and construction workers frequently switch jobs at the same skill level. Despite being in the workforce for five years or more, the up-skilling opportunities available to these such workers have been negligible.

The vocationally educated group was usually engaged in technical employment, with a few in service sector jobs like teaching and health care. A large number of graduates are employed in technical and service sector jobs, but also have a significant proportion of professions like teaching, book keeping and stitching that vocational education caters to, hinting at the rising possibility of a skill mismatch with the level of education.

Table 8-2: Constraints by Education Level for the Unemployed

Education Level/Constraint	Finances	Personal Constraints	Information Deficiency	Skill Mismatch
Below 10th	0.71	0.29	-	-
10th	0.50	0.17	0.25	0.08
12th	0.38	0.13	0.38	0.13
VET	0.43	-	0.43	0.14
Graduate	0.13	0.13	0.27	0.47

Source: Athena Research

The table above notes the percentage of all unemployed respondents with a certain education level who reported a specific constraint. It can be seen that the percentage of those who report financial difficulties steadily decreases as the education level increases (vocationally educated respondents were a mix of 10^{th} and 12^{th} grade pass outs). Personal constraints also show a similar downward trend after accounting for the linkage between finances and family matters. Information deficiency is highest for the vocationally educated group and those who had passed the 12^{th} grade. This may be related to the specific nature of their courses and their reliance on the VET provider for such information. Those seeking employment after the 12^{th} grade likely face a similar problem, since a majority of their cohort moves into higher education and the focus of higher secondary education is on preparation for further studies, as opposed to employment. Skill mismatch as a constraint is seen to be rising steadily with the level of education, indicating the need for incorporating industry-relevant skills in formal education.

9 SKILL GAP

9.1 QUANTITATIVE SKILL GAPS

Table 9-1: Skill Gap for Tamil Nadu for 2012-17 and 2017-22 by District and Skill Level (in 000s)

SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Ariyalur	-13	5	3	**-6**	-9	10	7	**6**
Chennai	15	153	210	**361**	79	258	312	**634**
Coimbatore	31	60	19	**104**	99	102	56	**251**
Cuddalore	-61	30	17	**137**	-27	53	37	**207**
Dharmapuri	-36	14	7	**-15**	0	26	10	**36**
Dindigul	5	38	17	**59**	32	66	56	**154**
Erode	-29	33	17	**17**	-30	55	79	**100**
Kancheepuram	-128	109	60	**16**	20	180	31	**207**
Kanniyakumari	69	53	56	**174**	156	96	91	**340**
Karur	-8	15	4	**10**	10	25	11	**47**
Krishnagiri	-35	24	7	**-5**	1	41	18	**60**
Madurai	-1	67	35	**92**	57	115	77	**240**
Nagapattinam	-38	28	19	**26**	-6	49	39	**99**
Namakkal	-10	16	5	**11**	18	29	20	**68**
Perambalur	-27	2	1	**-25**	-21	4	2	**-15**
Pudukkottai	-14	9	13	**8**	14	19	25	**57**
Ramanathapuram	-26	30	18	**21**	-6	55	38	**86**
Salem	-20	49	26	**48**	40	86	61	**181**
Sivaganga	-20	11	0	**-10**	0	21	9	**29**
Thanjavur	3	43	12	**58**	24	74	58	**155**
The Nilgiris	48	38	40	**125**	67	66	62	**195**
Theni	-19	9	7	**-4**	-10	17	11	**18**
Thiruvallur	-106	94	53	**11**	-36	154	85	**173**
Thiruvarur	-55	8	1	**-46**	-32	16	5	**-11**
Thoothukkudi	5	36	28	**65**	54	64	40	**154**
Tiruchirappalli	42	50	22	**112**	81	88	79	**246**
Tirunelveli	21	40	22	**75**	59	70	67	**189**
Tiruppur	-9	31	27	**49**	39	56	47	**142**
Tiruvannamalai	-54	35	22	**3**	-11	62	46	**97**
Vellore	50	58	12	**111**	96	99	82	**269**
Viluppuram	-60	33	17	**-9**	-13	57	43	**87**
Virudhunagar	17	31	36	**51**	64	48	49	**129**
TOTAL	**-461**	**1,253**	**831**	**1,623**	**810**	**2,162**	**1,655**	**4,626**

Source: Athena Research

The highest skill gaps are expected to arise in the most rapidly industrializing districts such as Chennai, Kancheepuram, Thiruvallur and Tiruchirappalli. Less developed districts such as Cuddalore and Dindigul are also expected to witness skill gaps on account of large investments (in chemicals and food processing, respectively) that are expected in the districts over the next few years.

At the state level, the skill gap is expected to rise significantly between 2017 and 2022. Stable birth rates, outward migration of skilled human resources and inward migration of unskilled human resources is likely to cause a mismatch in the human resource requirements and the human resource availability, particularly at the semi skilled level. This projection also matches primary research findings which suggest a low inclination on the part of the youth to enrol in vocational education when compared to formal education.

Table 9-2: Skill Gap for Tamil Nadu for 2012-17 and 2017-22 by Skill Level (in 000s)

SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	1,718	1,511	1,896	**5,125**	3,313	2,440	2,807	**8,560**
Incremental Human Resource Availability	2,179	258	1,065	**3,502**	2,503	278	1,152	**3,934**
Skill Gap	**-461**	**1,253**	**831**	**1,623**	**810**	**2,162**	**1,655**	**4,626**

9.2 QUALITATIVE SKILL GAPS

In spite of relatively strong higher education infrastructure in the state, there are significant skill gaps in the state are qualitative in nature. The rapid capacity expansion has led to a huge variance in the quality of institutes and therefore, the human resource availability. Primary research suggests that a relatively low percentage of semi skilled and skilled graduates are employable. For engineers, the ratio is as low as one in 200. This often leads to students working in industries that are unrelated to their educational qualifications, highlighting the inherent inefficiencies in the skilling and job matching process prevalent within the state.

The following section highlights the qualitative skill gaps experienced in different industrial sub sectors within the state.

9.2.1 Automobile

The highest shortage is in semi skilled workers, particularly welders. Salaries for this class of workers are close to those for white collar jobs. More managers and supervisors will be required, though the highest requirement will be for semi skilled workers. The scope for technological change in the industry is low, and necessary skills are acquired on the job. Government apprenticeship training programs are welcome. However, the vacancies often go unfilled, especially in smaller firms. Human resource costs and labor unrest are major issues. Though the last major strike was over 15 years ago, some unrest continues. There is a need to change labor policies. Wages have risen six fold in the past eight years. Since 70% of the auto industry is not Indian, this erodes India's cost advantage. All new employees have to be trained by the company. Attrition is a major concern due to portability of acquired skills, and workers often leave for minor wage increments. Middle management too lack

necessary skills to guide workers. Skill training should begin in school, with trades like welding, CNC programming and pressing. Education needs to be oriented towards industry and students should have knowledge of machining as a whole.

Table 4.28: Skill Levels and Skill Gaps in the Auto and Auto Components Industry

Function	Hierarchy	Skills Required	Skill Gap
Manufacturing / Operations	Shop Head Supervisor Operator/Workman	Ability to understand the implications of defective parts/assemblies and how these link to increased warranty costs for the OEM Ability to meet quality requirements of the OEM / Tier I supplier	Personnel at smaller companies are unable to maintain quality of output and hence customer companies have to depute their own personnel to ensure that the right quality of product is made available
Design and Development / Product Development and Industrial Engineering / Technical Services	Project Leader Module Heads Junior Design Personnel	Minimal design abilities to convert OEM designs into manufacturable in-house designs Ability to understand testing specifications and conduct the basic tests needed accordingly Ability to design processes given an OEM design, keeping the required quality specifications in mind and reducing rejections to the minimum level possible	Inadequate ability to understand OEM design specifications Inadequate knowledge of materials used in auto components
Tool Room	Senior Tool Room Personnel Junior Tool Room Personnel	Ability to manufacture on-off parts using multiple basic machines – for example, for manufacturing a failed machine part Knowledge of gauges and the ability to manufacture and calibrate basic gauges	Inadequate understanding of advanced engineering drawings for critical gauges, etc.
Sales and Marketing	Senior Service Personnel Junior Service Personnel	Ability to maintain good working relations with large Tier I suppliers / OEMs (Tier I suppliers / OEMs) Ability to understand exact technical requirements of customers Ability to ensure that customer expectations (Tier I suppliers / OEM's) in terms	Inadequate ability to understand exact technical requirements of customers Inadequate ability to ensure timely delivery

		of timely delivery are met	
Service	Senior Service Personnel Junior Service Personnel	Ability to interact with Tier I suppliers / OEMs to understand the performance of their particular component in terms of quality, rejection rate, etc. Ability to effectively provide feedback to the design and manufacturing personnel about their components' performance and the changes required in design / production processes	Inadequate ability to understand the criticality of the role played by their component in the overall system design

Source: NSDC Sector Reports, Primary Research

9.2.2 Chemicals and Pharmaceuticals

The level of capital substitution and technological changes in the industry is high. There is significant over staffing, especially at the shop floor level. The industry is niche, and does not face a shortage of human resources. Skills of work shop workers are very low. Graduates from ITIs and polytechnics are poorly equipped to deal with modern machinery. A lack of familiarity with quality testing machinery was cited, which is particularly significant for the chemicals and pharmaceuticals industry. Government should focus on stricter norms for ITI graduates and strengthen basic skilling. Incentives should be provided for companies to start their own apprenticeship programmes.

Table 9-3: Skill Levels and Skill Gaps in the Chemicals and Pharmaceuticals Industry

Function	Hierarchy	Skills Required	Skill Gap
Production	Manager Supervisor Operator/ Helpers Workmen Technician (Lab)	Ability to manage safety and regulatory aspects of the chemical products produced by the company Ability to ensure compliance to chemical regulatory requirements and guidelines Ability to coordinate with other functions such as research, procurement, etc. for existing products and ensure production and quality targets as per the production plan Ability to ensure quality standards Ability to oversee development, review and improvement of standard operating procedures Ability to track and record process information and production data Ability to stringently comply with safety measures with respect to operations, equipments, environment, etc. and ensure that the safety measures are stringently followed	Inadequate understanding of maintenance and repair activities Inadequate exposure to current tools, technology, and processes Inadequate domain knowledge Inadequate knowledge of safety procedures Poor people management and planning skills Inadequate computer knowledge required for this level Inadequate practical orientation and exposure to machines Inadequate self motivation to enhance and update skills

		Ability to operate machinery ITC skills	
Sales & Marketing	Senior sales representative Account manager Junior sales representative	Ability to determine customer requirements and expectations Detailed technical knowledge Ability to coordinate with production personnel Ability to monitor competition Ability to assist the research team in the introduction of new products Ability to develop & maintain relationships with existing and potential customers Ability to ensure that the company's products are set well into the customers' processes and then handover the process to the customer Ability to resolve customer complaints	Inadequate commercial sense Inadequate personnel management skills Inadequate selling and negotiation skills Inadequate orientation towards attaining detailed product knowledge Inadequate ability to execute the end-to-end selling process Inadequate negotiation abilities

Source: NSDC Sector Reports, Primary Research

9.2.3 Electronics Hardware

Electronic units generally require a large amount of semi-skilled and skilled human resources due to high technology utilization in the industry. Technology usage is widespread, if not complex. Greatest shortages were felt in skilled and middle management segment. A strong preference for ITI graduates was expressed, as they were willing to perform operational duties. Communication and management skills were also lacking. There is a need for multi skilled workers. Prospects for drastic technological change in the sector are high, and there is a great need for up-skilling of workers. There are few government initiatives to up skill workers in the sector.

Table 9-4: Skill Levels and Skill Gaps in the Electronics Hardware Industry

Function	Hierarchy	Skills	Skill Gap
Procurement	Purchase Manager Purchase executive	Domain knowledge Awareness of the latest trends in the market and ability to anticipate their impact on procurement Negotiation and communication skills	Lack of adequate knowledge to source from international destinations Awareness of the latest price trends and sourcing destinations is limited to the domestic market In-depth knowledge of the various types of cotton and quality parameters
Maintenance	Maintenance manager Maintenance operators	Domain knowledge Ensure availability of the spare parts and knowledge of current machine tools Communication skills to understand the maintenance requirements of various machines	Awareness of maintenance requirements of various machines is limited Inadequate knowledge of current machinery

		Planning and staff management Routine and time bound	
Production	Chief Technical Officer Project Lead Design Engineer Helper level	Problem solving skills Good communication Staff management Technical competence Process improvement skills - waste control, finding solutions to maintenance and engineering related problems	Inadequate cross-functional knowledge Inadequate practical knowledge Awareness of modern production methods and machines is limited Lack of man-management skills Awareness of modern spinning machines is limited Knowledge/skill confined to single or few machines Lack of knowledge of compliance to quality Inadequate ability to multitask
Design	Project Lead Design Engineer	Knowledge about the latest technology and industry trends Domain knowledge Networking skills Communication skills Knowledge of applicable quality standards Management skills	Lack of understanding of latest technologies in product prototyping and inability to upgrade technical knowledge Theoretical concepts of Electronics/Embedded Software weak Insufficient exposure to practical training Testing and validation skills are not in line with industry requirements Lack of problem solving attitude, innovation and creativity Lack of ability to communicate effectively with concept development team Insufficient project management and integration skills
Quality	Supervisor Executive	Operational knowledge Punctuality and discipline Ability to comply with quality norms, requirements of the yarn across various production stages Domain knowledge	Inadequate ability to translate buyer requirements to quality parameters Lack of knowledge of cause-effect relationships for various defects Inadequate understanding of quality parameters
Sales	Manager Executive	Detailed product knowledge Good negotiation skills Good communication skills to interact with the team as well as with important clients Knowledge of English is important for interaction with international clients	Negotiation and communication skills

	Awareness of competitor actions and ability to provide feedback to the management Understanding of customer requirements	

Source: NSDC Sector Reports, Primary Research

9.2.4 Food Processing

Food processing is an emergent industry and the skills required for it are not readily available. The majority of unskilled workers are migrants who have to be trained in the basics. The level of technological change in the industry is also high, which implies that they have to constantly keep pace with evolving international tastes and standards. The industry is set to grow rapidly in the state, but key infrastructure like power, cold storage and transportation remain concerns. The primary requirement in the sector is to have close collaboration between industry and training providers to provide workers with updated skills.

Table 9-5: Skill Levels and Skill Gaps in the Food Processing Industry

Function	Hierarchy	Skills Required	Skill Gap
Production	Producer of milk Helper /Operator	Understanding the basic quality requirements and ways to maintain hygienic conditions Undertaking measures on minimizing wastage Knowledge of operating milk processing machines	Inadequate education about latest techniques for minimizing wastage Inadequate knowledge about handling machines Poor knowledge of operating in a hygienic environment
Procurement		Networking skills to maintain good relationship with producers/village cooperatives Ability to undertake demand forecasts and maintain appropriate procurement levels Understanding safety measures Ability to maintain proper documentation and coordinate operations with the shipping/logistic providers IT skills Knowledge of commodity markets	Inadequate ability to forecast demand Inadequate communication skills
Testing/Quality check		Understanding of correct sampling methods Adequate knowledge of the Food Act, and accepted product specifications Adequate knowledge on conducting tests, recording results, and reporting	Poor knowledge of accepted product specifications

Operations	Supervisor Operator/ Packer	Ability to motivate workmen Excellent communication skills Domain knowledge Basic reading and writing skills to understand the standard operating procedure	Inadequate written/verbal communication skills Inadequate documentation skills
Sales and Marketing Division		Regular correspondence with customers Very good communication skills Ability to track competition and trends in the market and devise new customer engagement strategies	Inadequate professional communication skills, especially at the entry level

Source: NSDC Studies, Primary Research

9.2.5 Gems & Jewellery

The gems and jewellery industry faced the greatest skill gaps in the retail segment of the value chain. Since jewellery is an experiential product, customer interaction is an important part of the business. Shortages were also reported at the work shop level. Workers are called karigars and are sourced from different parts of the country. They are generally part of a long family tradition of working with gems and jewellery, and are skilled under a senior karigar. In recent times, newer generations are unwilling to take up the family profession. There are also very few institutes that cater specifically to the gems and jewellery sector. Skill shortages in management and ITI graduates were also cited. Partnerships between industry and the government to promote the sector were the suggested mode for skilling.

Table 9-6: Skill Levels and Skill Gaps in the Gems and Jewellery Industry

Function	Hierarchy	Skills Required	Skill Gap
Procurement	Purchase Manager Purchase executive	Domain knowledge Awareness of the latest trends in the market and ability to anticipate their impact on procurement Negotiation and communication skills	Lack of adequate knowledge to source from international destinations Awareness of the latest price trends and sourcing destinations is limited to the domestic market In-depth knowledge of the various types of gems and quality parameters
Design	Across levels	Ability to meet customer specifications Ability to understand current market trends, changing tastes and preferences Highly creative	Inability to create widely accepted designs Inability to cater to particular segments of the market
Manufacturing	Model makers/ molders/ Workmen	Understanding of engineering concepts Ability to create the final product exactly as per the specifications. Ability to use mould making machines and other machinery Domain Knowledge - Understanding of metallurgy, technical knowledge pertaining to the manufacturing process Understanding of safety requirements	Lack of formal training Inadequate understanding of safety measures and requirements Poor knowledge of metallurgical properties and manufacturing process including use of machines and equipment

Export/Retail	Manager/ Front Line Manager/ Sales Executives	In depth product knowledge Ability to understand emerging trends in jewellery, HR management, Customer management Time management Process management Communication skills and selling skills Supply chain and inventory management	Inability to work in a highly commercial set up Lack of product knowledge Lack of understanding of customer behavior and poor customer relations skills

Source: NSDC Sector Reports, Primary Research

9.2.6 Leather

The leather industry is the largest employer of human resources per unit capital invested; it is a very labor intensive sector. The vast majority of workers are women, which makes it one of the most socially sensitive sectors. A major concern cited by industry was the great shortage of shop floor workers. Absenteeism and attrition were also mentioned. Most workers in the sector have been in it for many years, and are soon set to retire. The next generation of potential workers has little to no interest in the industry. There is also an aversion to shop floor, semi-skilled work, since people prefer unskilled jobs instead. The industry does not typically hire diploma graduates and relies on continuous training to maintain the skills of its work force. Since the scope for technological change in the sector is low, skills once learnt are perennially useful. The major hurdle to hiring human resources is that the demographic that most shop floor workers come from are not accustomed to working in factory conditions and prefer unskilled, home based work. Motivational campaigns and negotiations have to be included in the hiring process and maintained throughout the working period. The shortage of shop floor workers is so severe that it is cited as a reason for the slowing growth of this sector. Some shortage of middle management and an ready availability of skilled human resources were also some of the reasons.

Table 9-7: Skill Levels and Skill Gaps in the Leather Industry

Function	Hierarchy	Skills Required	Skill Gap
Procurement	Purchase Manager Purchase executive	Domain knowledge Awareness of the latest trends in the market and ability to anticipate their impact on procurement Negotiation and communication skills	Lack of adequate knowledge to source from international destinations Awareness of the latest price trends and sourcing destinations is limited to the domestic market
Manufacturing/ Production	Technicians/ Supervisor Semi-skilled Workers/Machine Operators Unskilled Workers	Ability to oversee the entire production process Domain knowledge – manufacturing process Ability to operate machines In depth knowledge of manufacturing process Ability to operate various kinds of machinery- splitting machine, press machine, polishing machine Familiarity with processes such as curing,	Poor management skills Inability to maintain good working conditions Lack of formal training – insufficient knowledge about use of machines, including maintenance

		soaking and buffing Loading and unloading of materials without damaging the same	
Sales	Manager Executive	Detailed product knowledge Good negotiation skills Good communication skills to interact with the team as well as with important clients Knowledge of English is important in the case of international clients Awareness of competitor actions and provide feedback to the management Understanding of customer requirements	Negotiation and communication skills Inadequate knowledge of international market

Source: NSDC Sector Reports, Primary Research

9.2.7 Textiles

Textile units generally require a large amount of semi-skilled and skilled human resources due to high technology utilization in the industry. Technology usage is widespread, if not complex. Greatest shortages were felt in skilled human resources and middle management. A strong preference for ITI graduates was expressed, as they were willing to perform operational duties. Communication and management skills were also lacking. There is a need for multi skilled workers. It takes up to two years to train a textile worker, and the skills acquired are not fungible. The prospects for drastic technological change in the sector are low, and there is a great need for up-skilling of workers. There are few government initiatives to upskill workers in the sector.

Table 9-8: Skill Levels and Skill Gaps in the Textiles Industry

Function	Hierarchy	Skills Required	Skill Gap
Procurement	Purchase Manager Purchase Executive	Domain knowledge Awareness of the latest trends in the market and ability to anticipate their impact on procurement Negotiation and communication skills	Lack of adequate knowledge to source from international destinations Awareness of the latest price trends and sourcing destinations is limited to the domestic market In-depth knowledge of the various types of fabrics and quality parameters Insufficient knowledge of various types of cotton defects and other quality parameters
Maintenance	Maintenance Manager Maintenance Operators	Domain knowledge Ensure availability of the spare parts and knowledge of current machine tools Communication skills to understand the maintenance requirements of various machines Planning and staff management	Awareness of maintenance requirements of various machines is limited Inadequate knowledge of current machinery Fitters (Maintenance operator) from ITIs have limited knowledge of maintenance of textile machinery due to non specific training

Function	Hierarchy	Skills Required	Skill Gap
Production	Supervisor Operator	Problem solving skills Good communication Staff management Technical competence Process improvement skills - waste control, finding solutions to maintenance and engineering related problems	Inadequate cross-functional knowledge Inadequate practical knowledge Awareness of modern production methods and machines is limited Lack of man-management skills Awareness of modern spinning machines is limited Knowledge/skill confined to single or few machines Lack of knowledge of compliance to quality Inadequate ability to multitask
Quality	Supervisor Executive	Operational knowledge Punctuality and discipline Ability to comply with quality norms, requirements of types of yarn to be used across various production stages Domain knowledge	Inadequate ability to translate buyer requirements to quality parameters Lack of knowledge of cause-effect relationships for various defects Inadequate understanding of quality parameters
Sales	Manager Executive	Detailed product knowledge Good negotiation skills Good communication skills to interact with the team as well as with the important clients Knowledge of English is important in the case of international clients Awareness of competitor actions and provide feedback to the management Understand customer requirements	Negotiation and communication skills

Source: NSDC Sector Reports, Primary Research

9.2.8 Construction

The construction sector faces a severe shortage of unskilled and semi-skilled workers. Most human resources lack basic skills and the ability to operate machinery. ITI and polytechnic graduates lack the skills required for the industry. Hiring is done mainly via contractors and labor unrest is a persistent problem. The availability of human resources with important skills like welding, bending and machine operations is low. Industry generally trains workers for a few months in order to be able to utilize them. It is necessary to impart basic skills and employability at the school level.

Table 9-9: Skill Levels and Skill Gaps in the Construction industry

Function	Hierarchy	Skills Required	Skill Gap
Manufacturing/ Operations	Shop / plant-in-charge Supervisor Workman/ Operator	Domain Knowledge Ability to meet production and cost targets Ensure compliance to environmental requirements Ability to maintain inventory records and ensure optimum inventory levels in the plant. Up to date with market trends Day to day management- overseeing operations, regular maintenance of equipment Ability to manage and use machinery	Inadequate ability to lead expansion initiatives Inadequate ability to keep track of international trends Inadequate ability to coordinate between departments / functions Inadequate technical knowledge Unwillingness to adapt and use new technologies Inadequate orientation towards safety /environmental protection
Development	Engineer/ Junior design engineer	Developing means for energy conservation and thus reducing energy costs Ability to bring about innovations in production methods so as to optimize production costs Maintaining quality standards across all products Ability to undertake technical and market evaluations Ability to maintain statistical records and documentation Ability to perform comprehensive laboratory tests and field sampling	Inadequate ability to identify diverse energy conservation means and thus help reduce energy costs Inadequate ability to optimize production processes so as to optimize costs

Source: NSDC Studies, Primary Research

9.2.9 Education

The primary shortage of skills in the education sector is at the skilled level. There is a lack of employability and understanding of the education sector. Skills are acquired over a long period of time and attrition is a concern. Efforts of the government are uncoordinated and inefficient. Ministries of school education, higher education and technical education should coordinate their initiatives with each other. There is a need for standardization and recognition of skills. Data collection must be made mandatory and standards are to be made uniform across different education levels.

Table 9-10: Skill Levels and Skill Gaps in the Education industry

Function	Hierarchy	Skills	Skill Gap
Administration	Principal Head of Department	Ability to handle the required legal aspects related to the institution - complaints, audits, reviews	Inadequate administrative skills

		Ability to formulate strategic plans for capacity addition, branding and marketing Ability to coordinate with the external authorities / government officials and liaison with them. Performance monitoring and assessment Liaison with industry, parents and other stakeholders in the education industry Ability to understand social responsibilities and maintain safety and health standards	Poor motivation Lack of strategic thinking Lack of coordination and outreach
Delivery/Assessment/Knowledge Creation	Tenured Professor/ Teacher Assistant Professor/ Teacher Associate Professor/ Teacher	Strong domain knowledge Knowledge of education practices Empathetic to students Strong communication skills to understand student needs and convey subject matter	Weak domain knowledge Lack of communication skills
Post Assessment	Placement Officers	Understand requirement of students and demand from industry Coordinate with industry players to track their requirements Strategic marketing and branding	Weak understanding of student needs Poor coordination with industry

Source: NSDC Studies, Primary Research

9.2.10 Health

The healthcare sector is facing a shortage of efficient and qualified people to provide administrative support. Most recruitment for posts other than doctors is through institutes affiliated to a health care provider. The major skill gaps are in the mid and low level support functions. Major problems in terms of attitude and soft skills are encountered. The lack of patience and willingness to adapt and learn is cited as a major constraint. There is also a need to remain calm and compassionate under stress. There were no labor issues reported in the private sector, and what little unrest there is, is in the government owned hospitals. Industry sponsored certificates are not recognized under government schemes, which results in a lack of mobility for students enrolling in private healthcare institutes. The government should recognize these certifications. Industry bodies like Indian Medical Association, Chamber of Commerce and CII can contribute by organizing workshops on best practices in HR in the healthcare sector.

Table 9-11: Skill Levels and Skill Gaps in the Healthcare Industry

Function	Hierarchy	Skills Required	Skill Gap
Doctors	HOD/Superintendent Consultant Specialist Resident Intern	Ability to plan healthcare delivery Ability to coordinate across departments ITC skills Ability to address administrative and legal requirements of patients Ability to participate in / follow hospital initiatives / regulatory requirements Awareness of standard operating procedures for the hospitals	Insufficient ability to manage personnel working across different specialties Inadequate ability to use computers and access hospital information systems (especially in the context of increasing IT usage) Inadequate orientation towards emergency management and disaster management
Nursing and Support Staff	Head Nurse Ward Superintendent Staff Nurse Attendant	Ability to report ward incidents and prepare weekly/monthly reports Maintenance of the medicines/equipments in the ward and indenting for required equipments/medicines Ability to use IT systems/undertake documentation/paperwork for admission and discharge of patients from the ward / private room Ability to address queries posed by patients /their relatives Ability to effectively converse with international clientele Ability to collect samples for laboratory tests Maintenance of various documents pertaining to patient treatment and discharge Ability to properly segregate and manage biomedical waste	Inadequate staff management skills Inadequate communication skills especially when dealing with international clientele Inadequate exposure to technology and thus inadequate hands-on experience of operating machines Inadequate knowledge of basic languages needed to converse with multiple sets of patients Inadequate ability to handle equipment and instruments appropriately Inadequate biomedical waste management and inadequate knowledge of proper segregation of waste
Technicians	Technical Supervisor Technician Technical Assistant	Ability to guide technicians and technical assistants Ability to be up-to-date about technological advancements Preparation of various reports as required by statistics department, Health department, NRHM and any other agency Maintenance and codification of records Maintenance of special records such as MLC, death, certain diseases, etc. Physical	Inadequate statistical knowledge Lack of staff management skills Need to keep up with technological advancements Inadequate domain knowledge Inadequate ability of equipment maintenance management Inadequate ability to adhere

	maintenance of records Ability to plan and purchase reagents and other necessary test accessories Proper usage, cleaning and maintenance of the vials/bottles/equipments used for diagnosis and tests Recording of test results and preparation of reports	to hospital procedures

Source: NSDC Studies, Primary Research

9.2.11 Information Technology

No shortage of human resources was reported by the IT/ITES industry. A majority of the labor force consists of undergraduates and there is a need for more post graduates. Curriculum is too theoretical and students do not have employable skills. Subject knowledge and creativity is lacking. Practical applicability of skills and career planning are cited by industry as necessary initiatives.

Table 9-12: Skill Levels and Skill Gaps in the IT/ITES Industry

Function	Hierarchy	Skills Required	Skill Gap
Delivery	Software Engineer Project Leads Module Leads Team Leads	Analytical skills Programming skills, proficiency in at least one language/platform (Java or Net framework) Adequate communication skills Domain knowledge Understanding of business Ability to understand customer needs Ability to lead and work with a team Quality Management	Inadequate soft skills Inadequate knowledge of corporate culture –reporting, compliance, and protocols Lack of sufficient domain knowledge Poor domain knowledge Inadequate communication skills Lack of specialization
Pre Sales	Business/ Group Heads Business Analysts	Adequate client management skills Ability to plan, set business targets, chart out recruitment and staffing Negotiating skills Basic understanding of software engineering concepts Ability to capture learning from one project/process and apply the same in other projects Ability to make pre-sales pitches/presentations	Inability to take up higher levels of responsibility Lack of negotiation skills Insufficient ability to understand customer requirements Poor market specific knowledge Poor communication and presentation skills Lack of problem solving skills
Product Development	Product Developers and Analysts Executives (Voice based) Executives (non-voice)	Deep industry knowledge In-depth domain knowledge Ability to incorporate the required degree of 'flexibility' in design Ability to maintain product specific documentation Knowledge and ability to track changing market regulations	Insufficient knowledge of market regulations and other areas specific to the product Lack of awareness of company policies relating to information security Inadequate communication skills

		impacting the product Ability to handle enquiries IT Skills Basic process knowledge and ability to provide technical support Ability to meet deadlines Adequate communication skills Active listening skills Customer relations Analytical skills Basic domain knowledge	Lack of aptitude for multi-skilling Poor customer relations skills Inadequate domain knowledge
Sales	Manager Executive	Detailed product knowledge Good negotiation skills Good communication skills to interact with the team as well as with the important clients Knowledge of English is important when interacting with international clients Awareness of competitor actions and ability to provide feedback to the management Understanding of customer requirements	Negotiation and communication skills

Source: NSDC Studies, Primary Research

9.2.12 Retail

Retail is an emergent sector in the state and it is not as well developed as in some other major states of the country. Due to this, there is expectation mismatch in the labor pool. There is low dignity of labor associated with retail jobs. People training for the retail industry expect managerial jobs. Industry cited the need to educate people on the growth and prospects of the retail sector to create employability. Retail is a very hands on field, so skills are necessarily imparted in the course of work. Apprenticeships and internships should become the primary form of training for employment in the retail sector.

Table 9-13: Skill Levels and Skill Gaps in the Organized Retail Industry

Function	Hierarchy	Skills Required	Skill Gap
Purchase	Purchase Manager Purchase Executive	Domain knowledge Awareness of the latest trends in the market and ability to anticipate their impact on procurement Negotiation and communication skills	Lack of adequate knowledge to source from international destinations Awareness of the latest price trends and sourcing destinations is limited to the domestic market
Management	Store Manager/ Department Manager	Domain responsibilities-day to day management, maintaining inventory, procurement, etc. Sufficient IT skills Marketing - ability to devise and execute sales promotion programmes, in-store advertising Understanding of customer behavior	Inadequate knowledge of maintaining logistics, in-store marketing and merchandising Lack of human resource management skills Inability to adapt to the changing

		Training sales personnel Understanding of local market conditions Detailed product knowledge Maintaining customer relations Negotiation skills	customer/market trends

Function	Hierarchy	Skills Required	Skill Gap
Financials	Transaction Processing Associate/ Billing Associate	Strong IT skills –handling bar code reading machines, credit and debit card transactions, minor software problems Basic accounting skills Knowledge of offers underway in the store and its implications on billing	Inadequate knowledge of processing transactions and managing cash Inadequate IT skills
Sales	Customer Service Representative /Sales Associate/ Sales Person	Marketing skills- Knowledge of current sales promotion schemes and ensuring communication of the same to customers Up to date with store policies Keeping track of inventory Detailed product knowledge Knowledge of competing stores/brands Customer relations and understanding customer requirements Ability to guide the customers to the relevant sections of the store Ability to watch out for security risks and thefts, and subsequent handling of such situations Ability to cross sell - this is specifically important where the product line spans different categories Effective communication skills Maintaining a good code of conduct at all times	Inadequate product knowledge Lack of marketing skills Inadequate communication skills and interpersonal skills
Merchandising	Merchandising Manager/ Sr. Merchandising Manager	Ability to design store layouts, visual displays in store windows and on the sales floor. Understanding and knowledge of current market trends - ability to ensure that items in high demand get more share of the shelf space Knowledge of products and customer behaviour Good communication and interpersonal skills IT skills- data analysis, reporting	Lack of merchandising skills and inability to handle large inventories

Source: NSDC Studies, Primary Research

9.2.13 Tourism & Travel

The hospitality industry in Tamil Nadu is the latest to develop in the country. The majority of organized hospitality providers are located in Chennai, while the rest of the state has more traditional providers. Within the organized sector, the state is the last to be developed in the country. Chennai is the most recent destination for international hospitality giants, after other metros, except for Kolkata. A major constraint cited was the inability to rotate staff as per room requirements. This was due to the scarcity of skilled human resources in the sector, which made it difficult to rotate workers on off days on a contractual basis, since they would be picked up by competitors. With many different verticals, skills in the hospitality sector are varied. The majority of skills are concentrated in the food and beverage and housekeeping sections. New recruits are trained intensively, and hiring is preferentially via promotions from within the group. There are great shortages at the semi-skilled level, and skilled workers are paid many times the wage of unskilled workers. Industry cited the need for more organized and developed contract agencies to source and train skilled human resources for the hospitality sector, that would permit them the necessary flexibility to adjust human resource requirements to market conditions.

Table 9-14: Skill Levels and Skill Gaps in the Tourism, Travel and Hospitality Industry

Function	Hierarchy	Skills Required	Skill Gap
Hospitality – Front Office	Front Office Manager Front Office Assistant Bell Captain Bell Boys Travel Desk	Management skills Excellent communication skills People skills Co-ordination skills Language skills Thorough regional knowledge	Lack of management skills Poor communication and regional knowledge
Hospitality – Food and Beverage	Senior Captain Steward Restaurant Manager Service staff	Management skills Strong domain knowledge Strong communication skills Coordination skills Awareness of hygiene and safety standards Awareness of quality control norms Professional demeanour and conduct Inventory management	Lack of people skills Lack of awareness of quality and safety standards Lack of professional demeanour
Hospitality - Maintenance	Executive Supervisors Attendants	People management skills Awareness of safety and hygiene norms Strong communication skills	Lack of awareness of safety and hygiene norms Weak communication skills

Function	Hierarchy	Skills Required	Skill Gap
Tourism and Travel - Operations	Branch Manager Manager Travel Counselors	Public relations and marketing Human resource management and staff training Liaising with clients and service providers Grievance redressal Leadership qualities Strong communication skills Domain responsibilities Ensuring high service delivery and efficiency	Inadequate ability to handle customers Crisis management skills Lack of adequate domain knowledge Lack of presentation skills Insufficient people management skills Inadequate time management skills
Tourism and Travel - Sales	Sales Manager	Networking skills Ability to communicate effectively Market mapping Ability to build customized products for clients Meeting customer expectations Leadership skills	Inadequate presentation skills Inadequate client networking skills Lack of creativity

Source: NSDC Studies, Primary Research

9.2.14 Transport & Logistics

The transportation and logistics industry cited major skill gaps in unskilled workers. High levels of technical ability are expected. Consumer needs and technology change rapidly in this industry. The ability to read, write and learn at a slightly advanced level is essential. Other skills include inventory management, lean concepts of operations management, RFID, use of computers and the ability to understand new technology. Almost all workers in this sector are not trained. There is a lack of comprehensive, unified training and certification programmes. Industry cites the need for consolidation and single certification. Aspiration related problems are a major source of attrition in the industry, which can be as high as 90%. However, high attrition also means low labor unrest. Wage differentials are also not very great for semi-skilled and unskilled workers, which inhibits the incentives for further skill acquisition.

Table 9-15: Skill Levels and Skill Gaps in the Transport and Logistics Industry

Function	Hierarchy	Skills Required	Skill Gap
Operations	Manager/ Owner Supervisor Drivers, Helpers	Sound knowledge of taxation policies and interstate laws to train and educate supervisors and drivers Ability to undertake activities such as fleet management Ability to take decisions on long term and short term investments Familiar with the use of new technologies such as the use of GPS Excellent spoken and written communication skills Ensure the highest safety levels Time Management Ability to record and track transactions Basic reading and writing skills Knowledge of traffic rules (region wise) Ability to handle cargo Ability to understand basic sanitation and hygiene requirements Adhere to safety requirements	Inadequate knowledge of procedures and laws Lack of knowledge of best warehousing practices Inadequate knowledge of new technologies in the transportation sector Inadequate upskilling activities Inadequate formal training Inadequate knowledge of safety and first-aid
Sales and Marketing/ Customer Service	Manager Executive	Ability to maintain good working relationships Ability to negotiate Ability to coordinate with agents Ability to prepare quotes and issue feasible rebates Ability to streamline the flow of cargo Excellent communication skills Ability to undertake timely data entry for different consignments issued IT Skills	Poor IT skills Poor communication skills and coordination skills Inadequate domain knowledge

Source: NSDC Studies, Primary Research

10 ISSUES IDENTIFIED

The skill development space is faced with a number of problems. This section outlines the major challenges and their effects on different stakeholders.

10.1 Information Asymmetry

10.1.1 Lack of Awareness

There is a lack of awareness among the students regarding the specific skill sets required by the industry. While they aspire for certain types of jobs, they have no information on the qualifications required for such jobs. The unavailability of information on various skill development initiatives and the benefits of vocational training also pose an obstacle for skill acquisition.

10.1.2 Mismatch in Job Expectations

Mismatches between the students' job expectations and the work conditions at the lower skill levels lead to high worker discontent and attrition. Students do not have clarity on the nature of the work they will be performing on completion of vocational courses or the expected career progression, compensation and work conditions at their place of employment.

10.1.3 Low Relevance of Curriculum

Low collaboration and interaction between industry and training providers for curriculum development has led to courses that do not match industry requirements. This leads to low returns on education for those who undergo formal skill training. The lack of industry-faculty interaction on course curricula often leads to irrelevant training modules.

10.2 Disincentives for Skill Acquisition

10.2.1 Low Access to Skill Training Providers

Students in rural and backward areas have difficulties in accessing skill training providers. This acts as a disincentive to skill acquisition since the cost of acquiring skills includes the cost of transport to the institute or moving to another location.

10.2.2 Lack of Guidance for Skill Development

Prospective students across skill levels often do not have adequate information to make informed decisions with regard to skill development. Their limited knowledge of skill training courses and the associated employment opportunities limits their ability to choose appropriate courses, which in turn leads to dissatisfaction with the results of skill acquisition, and leads to reluctance to invest in skill development.

10.2.3 Low Dignity of Labor

Low enrolment in skill institutes can also be attributed to the perceived lack of dignity in blue collar jobs. The lack of integration between formal and vocational education systems, and the low salaries received by workers with such skills contribute towards the formation of this perception. There is a strong preference for white collar jobs, which has led to an excess availability of human resources at the higher skill levels.

10.2.4 Lack of Mobility between Formal and Vocational Education

The current formal education system provides limited options for vocational training, while vocational training systems have limited options involving mathematics and language learning. This lack of options makes it very difficult for a person enrolled in the formal education system to obtain industry relevant skills and leaves a person enrolled in vocational training with limited soft skills. Vocational courses restrict mobility to formal education and do not allow students to migrate to other institutions of higher education. Students desire more than a semi-professional education. Hence, youth who aspire for white collar jobs are unwilling to acquire vocational skills since it will limit their possibilities to acquire formal education at a later stage. Skill development, therefore, is not accepted as an alternative to formal education.

10.2.5 Opportunity Cost of Skilling

There is an opportunity cost associated with skilling in the form of loss of employment and wages for the duration of the skill training program. This acts as a disincentive for skill development, particularly in the unorganized sector, where skills are often acquired informally or on-the-job. Most of the prospective students are not willing to invest in formal skill development since they neither have information on industry requirements, nor have adequate evidence of people receiving jobs after completing skill development courses.

10.2.6 Low Compensation for Skills

Many of those who complete skill training programs are offered jobs that do not match their aspirations or their skills at the lower skill levels. The wages offered to vocationally educated students do not justify the investment in skill acquisition. The lack of suitable employment opportunities acts as a deterrent since the prospective students see no value addition from the vocational courses. The mismatch is more pronounced due to the lack of recognition of skills imparted through vocational training courses, weak industry linkages for training providers and the unwillingness to migrate on the part of the students. The low compensation levels also create a resistance to migrating to other areas for work.

10.2.7 Lack of Promotions

Workers hired at the unskilled and semi-skilled levels do not have clarity on the career progression at their place of employment. The absence of institutionalization of promotion through higher wages or improved jobs to reflect increased experience and skills leads to a lack of motivation to acquire additional skills or work efficiently.

10.2.8 High Cost of Private Skill Training

In some cases, the fees charged by private skill training providers for various courses are not commensurate with the wages received on completion of these programmes. In the absence of good placement records and salaries received at the end of such training programs relative to the investment in training fees, the high cost of the course presents a value proposition that is unlikely to appeal to the target market. Vocational training programs that cost more than three months' salary on completion, often struggle to attract students. Rationalization of fee structures to reflect the value addition and enhancement of employability from completing such courses is required.

10.2.9 Transition from Informal to Formal Employment

The transition from informal to formal employment is particularly difficult for workers in the unorganized sector. Skill training programs do not adequately prepare students for formal employment. The interest in skill development in the unorganized sector is quite low as the relationship between up-skilling and higher wages is unclear.

10.3 Training Quality and Delivery

10.3.1 Student Identification

Appropriate student identification, targeting and mobilization are major challenges for skill training providers. Unstructured information channels, low awareness of skill development and low interest in skill training further pronounce the problem.

10.3.2 Outdated Equipment

The use of old infrastructure or outdated equipment leads to a lack of familiarity with machines at the work place. Often, the failure of skill training providers to adapt to changes in technology renders the training redundant, requiring students to re-learn the use of equipment at their place of employment.

10.3.3 Lack of Practical Knowledge

Across all skill levels, employers reported the lack of practical knowledge and the ability to apply classroom teaching effectively at the work place. New recruits require comprehensive training at the work place due to their inability to understand the applications of the concepts they learn during the skill training program.

10.3.4 Unavailability of Quality Trainers

One of the major challenges faced by skill institutes is the lack of good trainers. Student-teacher ratios vary widely across ITIs depending on the level of capacity utilization. Training teachers/trainers and retaining them is expensive. Innovation in training delivery methods can lead to substantial improvements in the quality of the training imparted to the students. The delivery of skills to the students depends, to a large extent, on the competence of the trainers.

10.3.5 Poor Basic Education

Many of the students who enrol in vocational education programs do not possess the fundamental knowledge required for absorbing the training imparted through such courses. The poor quality of basic education is a serious challenge to skill development, and indicates the need for more integrated action to impart skills.

10.4 Performance On-the-Job

10.4.1 High Attrition

Industries typically see a very high level of worker attrition at the lower skill levels. This has led to an excessive reliance on informal or contract labor in order to reduce administrative difficulties on account of attrition. Frequent job changes also prevent the assimilation of skills, as workers are unable to fully learn to perform a job properly before they choose to switch. High attrition deters small firms from recruiting vocationally educated candidates as the cost of recruitment is high for them and they cannot afford to conduct campus recruitments repeatedly.

10.4.2 Low Level of Soft Skills

Workers at the semi-skilled level lack the ability to manage human resources effectively. The absence of soft skills training restricts upward mobility and career progression. Training in organizational behaviour is essential to orient them with the work environment.

10.4.3 Lack of Industry Exposure

Low interaction with industry for the duration of the training program leads to low exposure to the nature of work and longer training periods. There is a need for engaging with the industry as part of the vocational education program to help the students gain industry exposure.

10.4.4 Lack of Standardization and Accreditation

The absence of formal accreditation systems for skill training institutes has led to high variation in the quality of the workforce. There is a mismatch in the candidates' educational attainment and their ability to perform tasks. Skill training certificates fail to accurately signal student quality or ability to prospective employers. Skills are not clearly benchmarked. Further, this limits the students' ability to discern good institutes from the others.

10.4.5 Low Multi-Skilling

The skill training programmes often focus on imparting one specific skill. This limits the employment potential for the candidates and is a deterrent for workers in the unorganized sector who tend to perform a number of activities requiring a variety of skills. Primary research suggests that it would be more desirable to provide basic skills across different functions instead of focusing on a single skill.

10.5 Attitudes and Preferences

10.5.1 Socioeconomic Constraints

Developmentally backward districts and rural areas have socioeconomic constraints to the skilling of women. Overcoming these constraints through targeted interventions, awareness campaigns and training delivery through female trainers is necessary to bring about an attitudinal shift.

10.5.2 Preference for Service Sectors

There is a strong preference for jobs in the IT industry. Jobs in service sectors such as hospitality and retail, which are associated with a higher level of dignity, are preferred to jobs on the factory floor. The lack of interest in working on the factory floor and traditional industries has led to low human resource availability in these sectors.

10.5.3 Preference for Formal Education

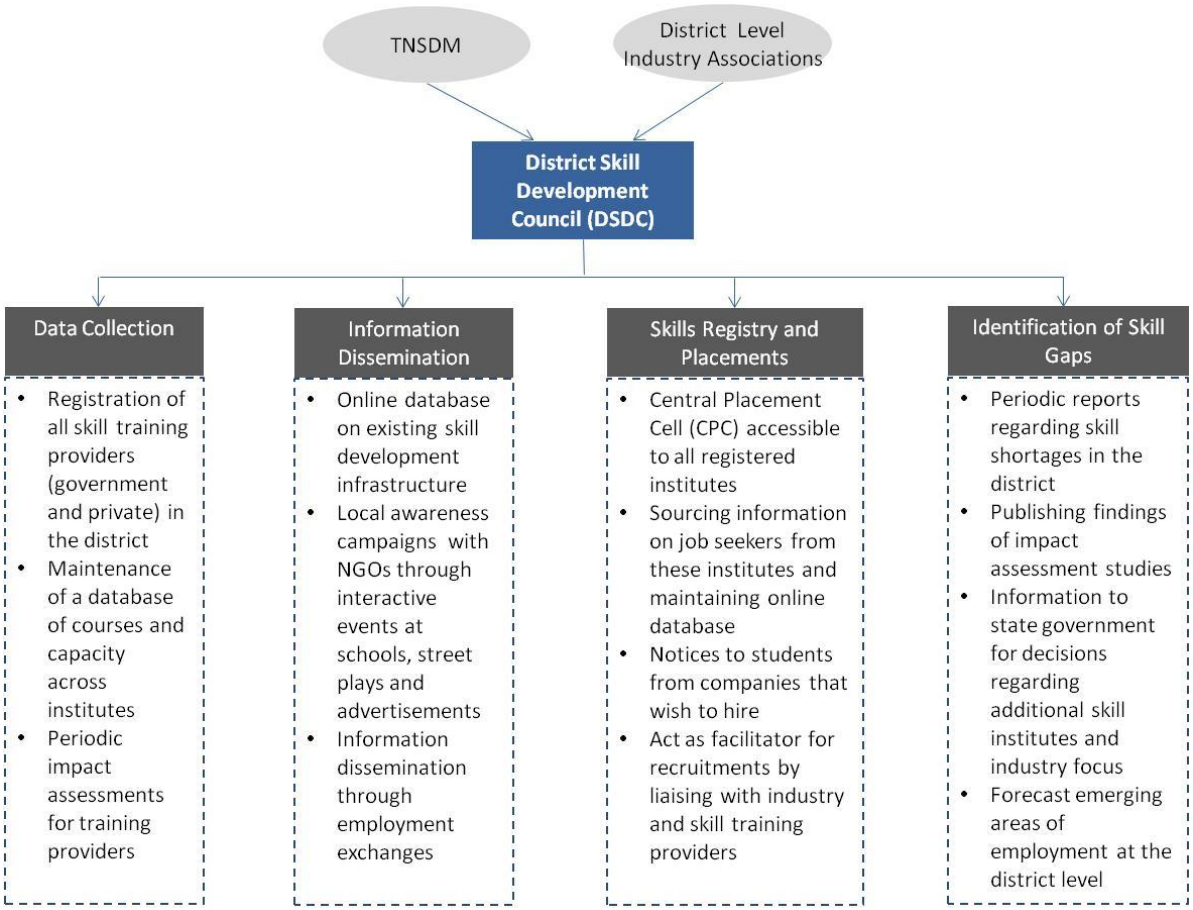
Vocational education is yet to be accepted as an alternative to formal education and continues to be seen as a last resort. Polytechnic diplomas are seen as a means to obtain admission into engineering colleges by many students. Hence, there is a strong preference for formal education which deters the youth from enrolling in vocational training.

11 RECOMMENDATIONS

11.1 State Government

11.1.1 Establishment of District Skill Development Councils

Figure 11.1: Functions of District Skill Development Council



It is proposed that District Skill Development Councils (DSDC) be set up by the Tamil Nadu Skill Development Mission (TNSDM) in each district in order to facilitate, collaborate and implement skill development initiatives and collect unit level data. There is a need for a single nodal body at the district level to coordinate various schemes and generate credible data to monitor progress. The unavailability of detailed information poses a major obstacle to an impact assessment of existing skill development initiatives as well as the estimation of the need for skill development. The multitude of initiatives undertaken by various government departments also lead to some degree of confusion for the students as well as the industry due to the lack of a single source of aggregated information. The DSDC will be able to bridge this gap by encouraging local level initiatives that are cognizant of the socioeconomic characteristics of different regions in the district.

Functions

1. **Data Collection**: The DSDC will be responsible for collecting data at the district level to facilitate better impact assessment of existing skill initiatives and assess the need for additional capacity on a regular basis.
    a. Registration of Skill Training Providers: In the absence of information about private skill training providers, it is difficult to assess the existing VT infrastructure in the districts. It also leads to a number of students being cheated by unscrupulous agents. Hence, the registration of all private and government skill training providers along with the collection of information on the training capacity of each institute across trades must be carried out at the district level.
    b. Database on Course Capacity across Institutes: The DSDC will create a database of existing skill development courses available in the district. This information can be made available on DSDC websites.
    c. Impact Assessments: Periodic impact assessment studies for skill development programs initiated by the government or other agencies may be carried out by the DSDC using data on skill development capacity, enrolment and employment.
2. **Information Dissemination**: There is low awareness of opportunities for skill development, particularly in backward districts such as Pudukkottai, Theni, Sivaganga and Perambalur. The youth in rural areas also cited the non-availability of information about skill training programs as a constraint to enrolling in vocational education. Information on skill development may be disseminated by the DSDC through various channels.
    a. Online Database: The online database will provide a point of reference for skill training providers, industry and students in urban areas regarding the existing infrastructure across different trades.
    b. Local Awareness Campaigns: Local level awareness campaigns must be initiated in order to reach the target students, particularly in rural areas. Such campaigns may collaborate with NGOs in order to reach small or marginalized groups of society. Holding interactive sessions at schools will also provide information to students to facilitate informed decision-making. Street plays to increase awareness on dignity of labor and position vocational training as an alternative to formal education may also be organized.
    c. Employment Exchanges: Employment exchanges may provide information to youth regarding the possibility of up-skilling or skill development and the expected job opportunities on completion of the course.
3. **Skills Registry and Placements**: The DSDC may carry out a skills registry for the students in the district and facilitate placements to establish a clear link between skill development and employment.
    a. Central Placement Cell: An online Central Placement Cell (CPC) may be set up in each district, which will be accessible to all the registered skill training providers in that district. Students at these institutes may use the CPC like a job portal to register themselves online. For institutes that do not have computer labs or access to such infrastructure, students may register themselves at local employment exchanges, which will then upload student details on the online database. With the assistance of the industry partner, the DSDC may contact firms that may be interested in recruiting these students and provide recruiters access to the website.

b. Skills Registry: For the industries that have a major presence in that particular district, the DSDC may classify students registered with the CPC by trade to create a database that will enable the identification of skill gaps. Notifications on available jobs will encourage students to register.

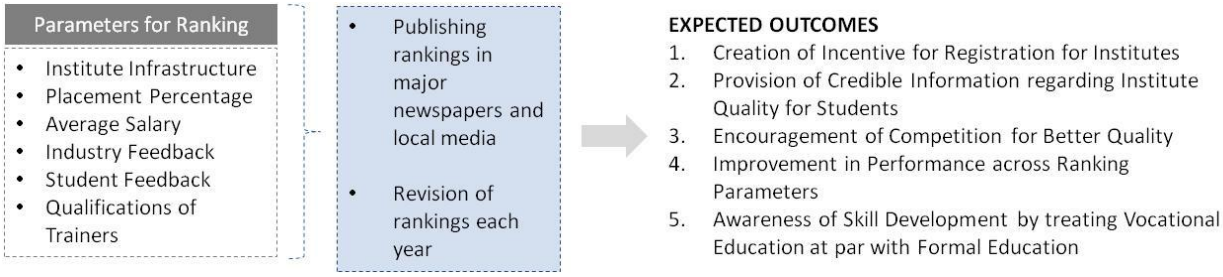
4. **Identification of Skill Gaps**: By working with different stakeholders at the district level, the DSDC will be able to provide information on current skill gaps to guide state skill development policies.
    a. Annual Report: The DSDC may create an annual report on the existing skill infrastructure, employment through the CPC and the skill shortages faced in the district, in order to ensure that state level schemes are cognizant of these shortages. This will allow the state government to sharpen its industry focus across districts to ensure that the skill training infrastructure responds to human resource requirements.
    b. Forecast Emerging Areas of Employment: With the assistance of the industry partner, the DSDC may provide information to the state government regarding emerging areas of employment for which additional skill requirement is likely to be created.

IMPLEMENTATION

1. The District Skill Development Councils (DSDC) should function under the TNSDM at the district level for implementing and collaborating on skill development programs in each district.
2. The DSDC should be constituted by district-level representatives from the Department of Employment and Training, the Department of Labor and district level industry associations.
3. Existing infrastructure developed for employment exchanges may be revamped and used by DSDCs. HR Consulting firms may be enlisted to restructure the operations of the employment exchange to include the functions proposed in the above section.
4. The DSDC will be responsible for data collection at the district level, which will be aggregated at the state level by TNSDC.
5. The implementation of all state level skill development and training schemes should be carried out under the supervision of the DSDC to ensure that it acts as a nodal agency for all skill development initiatives. This will ensure better coordination among different departments in the area of skill development.
6. Explore various models to determine the appropriate skilling process for different areas, e.g., SHG models for skilling small-scale industries such as handlooms and handicrafts and agriculture, particularly for rural areas.

11.1.2 Ranking of Existing Skill Training Providers

Figure 11.2: Ranking of Skill Training Providers



In order to induce competition in the skill training space, and to thereby improve the quality of service delivery, there is a need for independent third party ranking of the existing skill training providers. This will provide an incentive for private skill training providers to register themselves, provide students with information about skill development institutes and provide a signal of the institute's quality relative to other institutes in the state. It will also help students see vocational education as a credible alternative to formal education. The TNSDM should, therefore, commission an independent third party to conduct an assessment of existing skill training institutes in the state.

FUNCTIONS

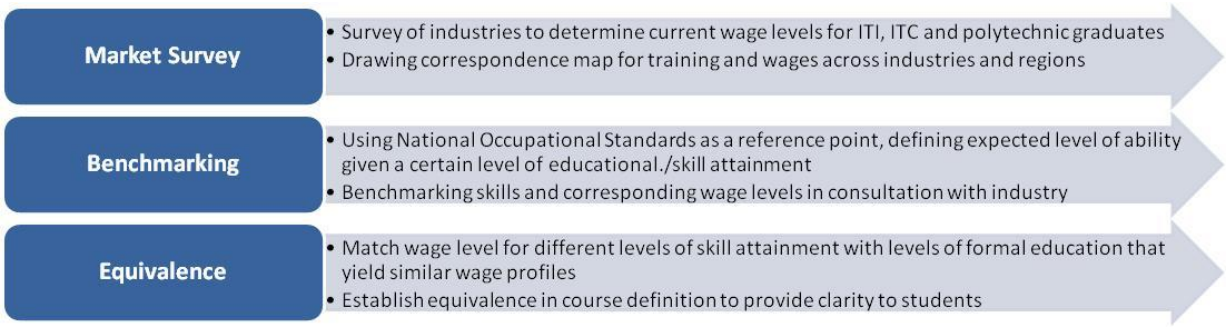
1. Creation of an incentive for institutes to register themselves for rankings
2. Generation and dissemination of credible information regarding institute quality
3. Encouragement of greater competition for bringing about better quality of skill training infrastructure and performance of institutes across the ranking parameters
4. Greater awareness of skill development programs

IMPLEMENTATION

1. The parameters for ranking institutes must be finalized based on the factors that are considered most important from the perspective of training quality. These parameters may be:
    a. Institute infrastructure
    b. Placement percentage
    c. Qualifications of trainers
    d. Average salary
    e. Industry feedback
    f. Student feedback
2. An independent third party organization with experience in skill development and education must be chosen through a transparent process to rank institutes. Multiple rankings may be undertaken to ensure objectivity.
3. Notices for inviting institutes to register for ranking must be published.
4. These rankings must be published in major national and local level newspapers to ensure that the information reaches the target population.
5. The rankings must be revised on a regular basis in order to ensure that the institutes have an incentive to improve their services and compete with each other.

11.1.3 Defining Equivalence between Vocational and Formal Educational Attainment

Figure 11.3: Equivalence of Vocational and Formal Education



The lack of flexibility between formal and vocational education acts as a deterrent for students from enrolling in skill development. Establishing equivalence between skill levels and formal educational attainment will create mobility across the two education systems. The Department of Employment and Training and the Department of Higher Education must work together to define equivalence between vocational and formal education in consonance with the NVEQF framework. They must also recognize vocational/polytechnic degrees and diplomas and define eligibility criteria for formal education in terms of vocational qualifications as well.

FUNCTIONS

1. Provision of mobility across education systems to students who wish to pursue further education
2. Clarity on skill levels associated with different courses for students as well as industry
3. Linking wages to level of vocational educational attainment to create an incentive for skill acquisition
4. Benchmarking of skill training

IMPLEMENTATION

1. **Market Survey**: A detailed market survey across different regions of the state must be undertaken to assess the current wage levels for ITI, ITC and polytechnic graduates across different industries and skill levels based on the trades and course duration. The sample must include rural and urban areas and respondents from districts with varying characteristics. This information will help draw a correspondence map for level of vocational educational attainment and wages across industries and regions.
2. **Benchmarking**: Using National Occupational Standards as a reference point, the expected level of ability associated with each skill level may be defined to ensure a certain minimum level of quality across different skill development programs. Such benchmarking will require industry involvement to ensure that the defined skills are relevant. It will also ensure that curricula are standardized for different programs.
3. **Equivalence**: The wage level for different levels of educational attainment may be matched with the corresponding levels of formal education that yield similar wage profiles. This will help establish equivalence across the systems and provide greater clarity to prospective students regarding the level of skill and wage associated with a particular course.

11.1.4 Establishment of Advanced Training Institutes in PPP Mode

Additional Advanced Training Institutes (ATI) that provide specialized courses for skilled and semi-skilled workers in different industries may be set up on a PPP mode with an industry partner. To ensure that the curriculum maintains relevance to industry needs and that the pedagogy is tailored to changes in technology and other industry developments, the curriculum developed should be approved by the relevant SSC. For technology-intensive sectors such as automobile and electronics hardware, the curriculum should be regularly updated with SSC inputs. TNSDM must consider the establishment of specialized training institutes that provide industry-relevant skills by partnering with large industry houses. For such a collaboration to achieve its stated objectives, the industry partner must be provided adequate incentive for such participation in skill development in the form of management fees, revenue sharing agreements and access to a source of skilled human resources.

Figure 11.4: ATIs on PPP Mode

FUNCTIONS

1. Collaboration between industry and government to ensure relevance of curriculum and quality control
2. Relevant curriculum development and modules for training the trainers based on norms laid down by SSCs
3. Improvement in placements through industry linkages through a placement cell for the institute with the industry partner as the leader
4. Formal recognition of informally skilled workers
5. Availability of multiple sources of funding for the institute
6. Shared responsibility of skilling by the government and industry
7. Clear industry focus in training process and pedagogy

IMPLEMENTATION

1. Focus on highly industrialized districts such as Chennai, Kancheepuram, Thiruvallur and Coimbatore and semi-skill level courses for industries such as automobile, textiles and engineering goods.

2. Value for money analysis for setting up an ATI on PPP mode and identification of appropriate procurement method
3. Constitution of Institute Management Committee with government and industry stakeholders
4. Joint curriculum development for courses providing fungible skills and soft skills in addition to specific technical skills with inputs from skill training experts
5. Develop modules for training the trainers with the approval of the SSCs to ensure pedagogy and training delivery standardization across classes
6. Develop clear assessment and testing standards with inputs from Sector Skill Councils (SSCs) to highlight student quality to industries. These tests may also be used to certify informally skilled workers by providing them the option of undergoing the test without enrolling in the course in order to formalize their skill acquisition.
7. Mandatory internships/apprenticeships as part of the curriculum with the assistance of the industry partner
8. Guest lectures by industry experts and industry visits facilitated by the industry partner
9. Constitution of placement cell for the industry led by the industry partner to establish industry linkages for the institute and improve the employability of students
10. On-the-job training with industry through short-term courses to up-skill current employees

11.1.5 Teachers' Training Institutes on PPP Mode

The non-availability of quality trainers severely limits the quality of skill training imparted in different institutes. Existing capacity in the form of Central Training Institutes (CTI) andthe National Institute for Technical Teachers' Training and Research (NITTTR) only cater to the need for training in government institutes, and are inadequate. Furthermore, there continues to be a shortage of trainers for private skill development institutes. Poor training delivery has adverse implications on the quality of skill acquisition and employability of the students. This gap may be addressed by setting up Teachers' Training Institutes on PPP Mode. Faculty training must be undertaken by TNSDM to ensure alignment of training to the institutes' training needs through an integrated framework of action for skill development.

FUNCTIONS

1. Ensuring availability of skilled trainers for various vocational programs to bridge the current shortage of trainers
2. Imparting quality education and soft skills to enhance trainers' training delivery skills
3. Contributing to the development of standardized tests for the certification of trainers

IMPLEMENTATION

1. Focus on developing districts such as Dindigul, Karur, Namakkal, Krishnagiri and Cuddalore
2. Establish Teachers' Training Institutes in PPP mode in collaboration with SSCs for standardization of training in sectors such as automobile, electronics and engineering
3. Incorporate industry experience as part of the curriculum to ensure that the trainers understand the purpose of the training imparted. Teachers with industry experience may be hired as faculty at the

Teachers' Training Institutes to ensure there is no disconnect between the training provided and industry requirements

4. Market survey to understand the type of students who enrol in skill development for the identified trades and industries
5. Partnership with large training providers to ensure that the curriculum is suited to their needs, and placements for the trainers on completion of the course
6. Development of a standardized testing mechanism for the certification of trainers, akin to those for teachers in the formal education system
7. Inclusion of soft skills and the use of technology in the classroom environment to facilitate learning
8. Capacity building workshops and conferences for students and alumni of the institutes
9. Refresher courses for those already employed as teachers/ trainers

11.1.6 Unorganized Sector Interventions

The unorganized sector accounts for a large proportion of total employment in Tamil Nadu. Workers in this sector comprise entrepreneurs working in informal Micro and Small Enterprises, workers employed in informal enterprises and workers outside informal enterprises comprising casual workers, domestic workers, part-time laborers, etc. This poses significant targeting challenges. There are quantitative and qualitative skill gaps that manifest themselves in the form of lower productivity and low quality output in this sector. Given that a huge proportion of workers are set to leave agriculture in the next decade and enter informal sectors, there is a need for focused interventions in the unorganized sector in order to bridge the skill gap. These interventions must be undertaken through collaboration between the Depart ment of Labor and the Department of Employment and Training.

Sector Specific Approach

Most of the workers in this sector acquire skills informally through self-learning or by working in an informal workshop. These skills provide workers with the ability to migrate to formal sectors of employment as well as equip them to work more efficiently in informal enterprises, thereby enhancing productivity in these enterprises. Therefore, the skill requirement for unorganised sector workers would differ from that of organised sectors. Skill development of unorganised workers should focus on:

- Use of traditional and labor intensive technologies
- Skill upgradation requirements to be determined by social preferences, as using market demand patterns alone to inform the training needs of the informal economy will bypass most members of the unorganised sector
- Training needs of different segments of informal workers, i.e., those working as Micro and Small entrepreneurs as opposed to those employed as casual laborers, to be assessed

Strengthening Basic Education

One of the major impediments to skill acquisition is the poor quality of basic education. The students lack the basic level of knowledge required to grasp courses in vocational training programs. The school curriculum is not aligned to vocational training requirements and gaps in the delivery of education lead to poor absorption of lessons. The Department of School Education must remedy this issue by improving the quality of basic

education. TNSDM should ensure that vocational training courses include extra classes/ tutorials for weak students. Bangladesh's Underprivileged Children's Education Programme (UCEP) aimed at strengthening basic education and skill formation in the informal sector has proven to be very successful. It offers non-formal basic education and training in fundamental and vocational skills that is spread across three stages, the final stage being placement in employment and follow up on the job. Similar initiatives could be successful in the Indian context.

Minimizing Opportunity Cost

Workers in the unorganized sector can rarely afford to expend time on skill development due to the loss of wages for that duration. Hence providing cost effective relevant training is a challenge. Developing short-term courses in this respect would be a more feasible and attractive option as the opportunity cost associated with such training would be lower. Programs that offer flexible course timings, enabling trainees to attend classes in the evening may be offered at Industrial Training Institutes. Training inputs can also be offered at the workplace through mobile units or trucks equipped with complete workshops that regularly visit workplaces and offer training. Clear linkages between skills and wages are a prerequisite for workers to skill themselves.

Certification

Skills must be recognized through evaluation and certification to allow workers to transition to the formal sector. This involves the processes of accreditation, certification and standardization that are essential for enhanced productivity. The institutionalization of standardized tests to acknowledge the skill levels of workers in the unorganized sector must be undertaken at ITIs. This has already been initiated under 700 MES institutes, and should be expanded and made available across districts. The certification tests should focus on practical knowledge and competency. Certification is most important in high growth and technical industries like automobiles, electronics and hardware, and IT.

Focus on multi-skilling and transferability

The unorganised sector in India is highly heterogeneous and workers are often engaged in multiple activities. A training program that focuses on a single skill set has limited application and provides narrow employment opportunities. It is, therefore, unlikely to solicit a high level of interest. Skill training programs for the unorganized sector provide portable skills that are applicable across sectors and regularly adapt themselves to market demand; such programs must be encouraged by TNSDM. ITI and ITC courses should focus on multi-skilling students to expand the set of employment opportunities available to them. The focus should be on the transferability of skills across occupations in the case of self employed Micro and Small entrepreneurs as they have limited use of certificates.

Skill Vouchers

Skill voucher schemes that focus on funding the students rather than the institutes have been successfully implemented in a number of countries such as Kenya, Paraguay and Ghana. A similar scheme has also been launched in Gujarat. There is a need to fund individuals rather than institutions in the unorganized sector. Primary research suggests that the dropout rate from courses is lower when the students invest in the training. Therefore, skill vouchers are likely to be most effective if students pay a nominal fee over the skill voucher. TNSDM may undertake such initiatives in order to promote awareness and simultaneously improve access for the target population.

FUNCTIONS

1. Creating awareness about skill development
2. Improving access to skill training programs
3. Encouraging competition in the skill development sector that would improve the quality of training provided across all institutions

IMPLEMENTATION

1. Identify eligibility criteria for candidates to qualify for the voucher scheme
2. Create a list of private and government institutes where the voucher can be redeemed by the students
3. Identify areas with adequate availability of skill training infrastructure for implementing a pilot scheme
4. Focus on vouchers for programs that provide multi-skilling
5. Provide information on skill development and distribute vouchers to eligible candidates
6. Create online database of candidates who received the voucher to ensure non-transferability
7. Identify and rectify issues in implementation before expanding the scheme to a larger area
8. Monitoring and evaluation of the scheme by an independent organization

It must be noted that the success of any intervention in the informal economy calls for the review of the wider legal, credit and macroeconomic environment, thereby ensuring availability of support services such as credit, market access and banking. This has been seen as a major challenge affecting the success of similar skill development initiatives in developing countries such as those in Latin America and Sub Saharan Africa.

11.1.7 Focus on Entrepreneurship and Migration

Entrepreneurship Development

The MSME department of the state government is implementing several entrepreneurship development programmes to impart relevant skills and generate employment in priority areas. A cluster based approach focusing on imparting cluster specific skills to workers in the major industrial clusters of the state is also in progress. It is recommended that these activities be significantly expanded and brought into all areas in the state. With a projected net excess of workers in the period 2012-2017, employment generation will remain a key concern in the short term. Many will leave agriculture and enter the industrial workforce. This is likely to cause a change in occupational patterns in the household. Entrepreneurship development at all levels is a priority for securing decent work for the projected excess human resource availability. DSDCs should incorporate an element of entrepreneurship in their training initiatives. International agencies such as DFID, advocate the provision of post training support in the case of informal sector workers seeking to set up small and medium enterprises.

Local households in selected districts may be provided with micro-loans as a means of helping low-income households become self-employed. Vocational training to applicant households, guidance in making a business plan and micro-lending and assistance in business operations may be offered in collaboration with local NGOs.

Diversification of Economic Activities

With growing change in the patterns of production, technological and organizational changes are bringing to light many new ancillary industries. The range of employment opportunities and opportunities for self employment have grown significantly over the past decade. Building an enabling environment for the growth of new micro and small industries is crucial to generating employment. At the same time, it will cause an expansion in the required number of skills. It is recommended that the state government co-ordinate with industry to monitor patterns of production, conduct research and issue directives to DSDCs to focus on sectors that are likely to show growth.

Migration

Migration patterns are likely to respond to rising human resource requirements. DSDCs may form partnerships with NGOs or industry to monitor the working conditions of migrant labor. Special incentive schemes for enforcing migrant welfare must be put in place. Awareness campaigns regarding support systems in migrant destinations and future prospects must be carried out by the state government.

11.2 Industry

11.2.1 Institutionalization of Career Progression for Lower Skill Levels

The low willingness to acquire new skills and high attrition observed across industries, particularly at the lower skill levels, is directly related to the lack of career progression at these skill levels. There are few incentives for employees to acquire additional skills on-the-job as there is no assurance of a corresponding increase in wages. This is also one of the factors that create a perception of low dignity for blue collar jobs among the youth. This issue may be addressed through the institutionalization of promotions for workers at these skill levels.

FUNCTIONS

1. Improvement in working conditions for blue collar workers
2. Creation of an incentive for employees' up-skill and performance improvement
3. Increase awareness of the dignity of labor since it becomes possible for workers to transition to higher levels in the hierarchy over time
4. Establish the correspondence between wage and skill level
5. Regular wage escalation to reflect increase in skill and experience

IMPLEMENTATION

1. Industry associations, in collaboration with SSCs, must define the skill sets required for performing essential tasks at the unskilled and semi-skilled levels in different sectors
2. Industry norms on compensation commensurate to skill level by linking salaries to improved productivity due to skilling; premium for certified skills may be evolved by the industry association through research and dialogue with industry members
3. Regular revision of wages to reflect experience, combined with promotions/career progression to incentivize skill acquisition must be encouraged by the industry association
4. Each firm must communicate these standards and norms to the employees through middle managers and supervisors to provide clarity on career progression

11.2.2 Involvement with Skill Training Providers

The mismatch in educational attainment and ability and the lack of relevance of skills and equipment to industry needs inhibit recruitment of students who undergo skill training. This also acts as a deterrent to the students due to the lack of employment opportunities. Greater industry involvement with skill training providers is necessary to ensure that skill development performs the intended function.

FUNCTIONS

1. Ensuring the skills imparted are marketable and make the students employable
2. Maintaining relevance of training to industry

3. Creating stronger linkages between industry and skill training providers
4. Providing industry exposure to students

IMPLEMENTATION

1. Firms must participate in campus recruitments at vocational training institutes in the vicinity to establish a strong connection between employment and skill acquisition
2. Recruiting interns/apprentices from vocational training institutes and regular industry visits and guest lectures to ensure that students have an industry orientation and are able to identify their areas of interest
3. Greater involvement in design of curriculum and pedagogy, particularly for service sectors such as hospitality, education and construction through participation in skill development workshops
4. Providing feedback to the training provider on completion of the recruitment process and internship to enable the institute to improve student quality

11.2.3 On the Job Training

Providing on the job training or enterprise based training to employees is crucial to raising the skills of the workforce and productivity of an enterprise as seen in South Korea, Singapore, Japan, Sub Saharan Africa. Collaboration with training partners for up-skilling of employees or incentivizing the investment in skills by associating improved skills with improved wages will help improve the skills of the work force.

The ITI apprenticeship programs should be treated as a part of the training. The state investment in infrastructure can be optimized and the issue of outdated machinery can be addressed by training students at the shop floor. Therefore, it would be possible for training institutes to focus on imparting theoretical training while practical training is provided at the work place, thereby raising the relevance of the training imparted. This model has been successful in other countries.

FUNCTIONS

1. Improving productivity and efficiency
2. Standardization of output or services in the organization
3. Creation of incentive to invest in skill acquisition

IMPLEMENTATION

1. The provision of such training by industries will be particularly effective in backward districts such as Ariyalur, Perambalur, Dharmapuri, Nagapattinam and Sivaganga, which display a low willingness to invest in skill acquisition due to the high opportunity cost in terms of wages foregone
2. Firms in the manufacturing sector must provide on-the-job training through induction programs and short-term training modules for basic jobs
3. Large firms facing a skill shortage may provide financial assistance in the form of low interest loans for employees who undergo skill training courses
4. Industry associations must encourage and facilitate partnerships between skill training providers and firms with expertise in that particular sector in order to train employees at the semi-skilled level.

5. Firms must also institute earn-while-you-learn schemes to promote skill acquisition without the employees incurring high opportunity costs in doing so. Employees may be enrolled on the basis of fixed term contracts and an allowance during the period of training.
6. All firms must train middle managers in organizational behavior to manage worker discontent and encourage learning on-the-job

Provision of on-the-job training has proved to be successful in several countries. For instance, Germany has a long standing culture of offering enterprise-based training through apprenticeships. The candidate receives theoretical training for one day per week by public vocational centres and practical training is provided within enterprises for about 4 days a week. The apprentices sign an employment contract that gives them three and a half years of formal training and a fixed allowance for each branch of training. At the end of the contract, the candidate receives a nationally recognised diploma.

Similarly the education system in Japan provides a foundation in basic skills, which then is built upon by employers through intensive on-the-job training. The bulk of the skill development is provided and financed by employers. Employees are then moulded by the system into a highly skilled workforce that is adaptable to change.

In Korea, the state adopted a training subsidy policy for the country's 16 largest companies. The objective of the scheme was to instil a training culture among enterprises. With economic development, the government mandated that enterprises of a certain size must invest up to 10% in their workforce in in-house vocational training. Failure to do so would result in the payment of a levy. This was later expanded to include Medium and Small Enterprises.

Another example would be of Tata Consultancy Services (TCS). It offers a comprehensive training programme for up to 6 weeks, after which employees join their on-site teams to work on pre selected projects. Employees are also assigned mentors and given project specific on-the-job training.

11.2.4 Improvement in Work Conditions to Reduce Attrition and Facilitate Assimilation of Skills On-the-Job

High attrition is a debilitating problem faced by a number of employers across the manufacturing and service sectors which necessitates hiring contract labor, reducing the quality of output, adding to human resource costs and preventing the assimilation of skills for workers as they change jobs before they are able to fully acquire the requisite skills. Additionally, there is a preference for white collar jobs and service sector employment due to dissatisfaction with the manufacturing sector work conditions. In order to address this issue, there is a need to improve the work environment.

FUNCTIONS

1. Improving dignity of labor
2. Reducing attrition
3. Facilitating the assimilation of skills

IMPLEMENTATION

1. Attrition may be reduced by firms by providing a part of the compensation in kind in the form of accommodation or other benefits
2. Firms across sectors must establish employee feedback systems to ensure that grievances are addressed across skill levels
3. Providing a bonus for completing one year of employment will incentivize employees stay at the same job longer, curtailing attrition and facilitating the assimilation of skills
4. Provision of safety equipment and suitable gear for performing jobs on the factory floor is a must for improving work conditions

11.3 Training Providers

11.3.1 Orientation Programs

The lack of guidance regarding skill development and the mismatch in job expectations and work conditions is one of the major causes of attrition. There is a need for rationalization of student expectations and clarity on the purpose of the program the students are enrolled in. To this end, orientation sessions may be conducted by the skill training providers at the beginning of the session to provide clarifications to the students.

FUNCTIONS

1. Provide clarity on course content and expected employment opportunities to the students
2. Rationalization of job expectations
3. Creation of industry orientation for the course

IMPLEMENTATION

1. The faculty or senior students at the vocational training institute may conduct an orientation program before the commencement of classes to induct students into the course, provide information on course content, study requirements and expected job opportunities that are likely to become available on completion of the course
2. Information on campus recruitments, apprenticeships and internships may also be provided during the orientation program
3. Training institutes must conduct standardized aptitude tests for students to facilitate better course and job matching
4. Alumni interactions with students must be facilitated to rationalize job expectations and industry requirements. Students should be encouraged to contact alumni during the course for guidance
5. The institute must provide a point of contact that the students may approach for clarifications on other queries they have during the course of the program

11.3.2 Industry Involvement

There must be greater liaison with the industry for skill development institutes to be able to provide employment to the students. As most of the students enrol in such courses in anticipation of greater employment opportunities, establishing strong industry linkages will determine the success of the skill training institute and affect its ability to mobilize students.

FUNCTIONS

1. Improving placement records and employability
2. Ensuring relevance of curriculum and pedagogy to industry needs
3. Providing industry exposure to students

IMPLEMENTATION

1. Training providers must conduct periodic market surveys for establishing demand for courses offered by the institute

2. Regular interactions with industry through guest lectures and recruitments to ensure relevance of curriculum to industry requirements
3. Mandatory internship/apprenticeship and industry visits as part of the training program for industry exposure in the manufacturing sector. These apprenticeships should be treated as a part of the curriculum. A dual apprenticeship system involving internships during the course and apprenticeships on completion of the course may also be considered.
4. Collaboration with industry for on-the-job training programs for the service sector
5. SSC inputs in curriculum design must be solicited

11.3.3 Student Mobilization

Skill development is yet to gain credibility as an alternative to formal education. In order to mobilize students for skill development, greater information dissemination and sharper targeting of prospective students is required.

FUNCTIONS

1. Improved awareness of skill development initiatives
2. Increased student mobilization for skill development programs
3. Acceptance of skill development as an alternative to formal education

IMPLEMENTATION

1. Talks and interactive sessions at schools and work places to create awareness about skill development
2. Focus on up-skilling at the semi-skilled level through interaction with industry for construction, electronic hardware and heavy machinery
3. Information about placements and opportunity to contact institute alumni to establish credibility of the institute
4. Targeted campaigns for women in socially backward districts such as Dharmapuri, Krishnagiri, Thiruvallur, particularly for sectors such as leather and textiles

11.3.4 Certification of Informally Skilled People

A large proportion of the work force chooses to acquire skills informally due to the absence of an opportunity cost in the form of reduced wages, availability of information regarding such opportunities and the assurance of employment. However, a large proportion of such workers are employed in the unorganized sector. In order to enable them to transition into the formal sector, standardized tests may be made available to them to certify their skill level.

FUNCTIONS

1. Formalization of informally acquired skills
2. Opportunity for unorganized sector workers to transition into the formal sector
3. Increased interest in the institute through word of mouth dissemination of information

IMPLEMENTATION

1. The standardized test administered to students enrolling in skill training courses at the institute may be made available to informally skilled people at a fee
2. Targeted advertising campaigns focused towards the unorganized sector
3. Provision of certificate based on performance in the test

11.3.5 Career Counselling for Students

The lack of career guidance was identified as one of the major obstacles to skill development, particularly in backward districts and rural areas. Providing career guidance is likely to help students make informed career choices and reduce attrition due to clarity of goals and expectations.

FUNCTIONS

1. Reduction in attrition
2. Rationalization of job expectations
3. Improved job matching

IMPLEMENTATION

1. Before commencement of the recruitment process on campus, the faculty should conduct sessions with the students to provide information on the companies that will visit the campus; the types of questions asked in interviews and the preparation required; the work hours, compensation and other job details that may be expected in different companies
2. Interactions with alumni may also be organized in order to provide clarity on the recruitment process and recruiter expectations
3. Students should be encouraged to contact the faculty for queries regarding placements

11.4 NSDC

11.4.1 Establishment of an Association for Training Providers

It is difficult to bridge the gap between industry requirements and the training imparted due to the lack of dialogue between the two parties. As skill development is a relatively new area, information about private players is difficult to obtain. Better communication with the training providers will facilitate in the resolution of issues. There is a need for a united voice from the training providers, and the provision of a common platform to enable them to resolve common issues. It will also bring greater structure and a higher degree of organization to the sector and provide greater credibility to such institutes.

FUNCTIONS

1. Aggregation of information on private skill training providers
2. Provision of a common platform to enable skill training providers to express their views
3. Improved dialogue with industry and other stakeholders
4. Better targeting and resolution of qualitative issues
5. Opportunity for skill training providers to collectively respond to industry requirements

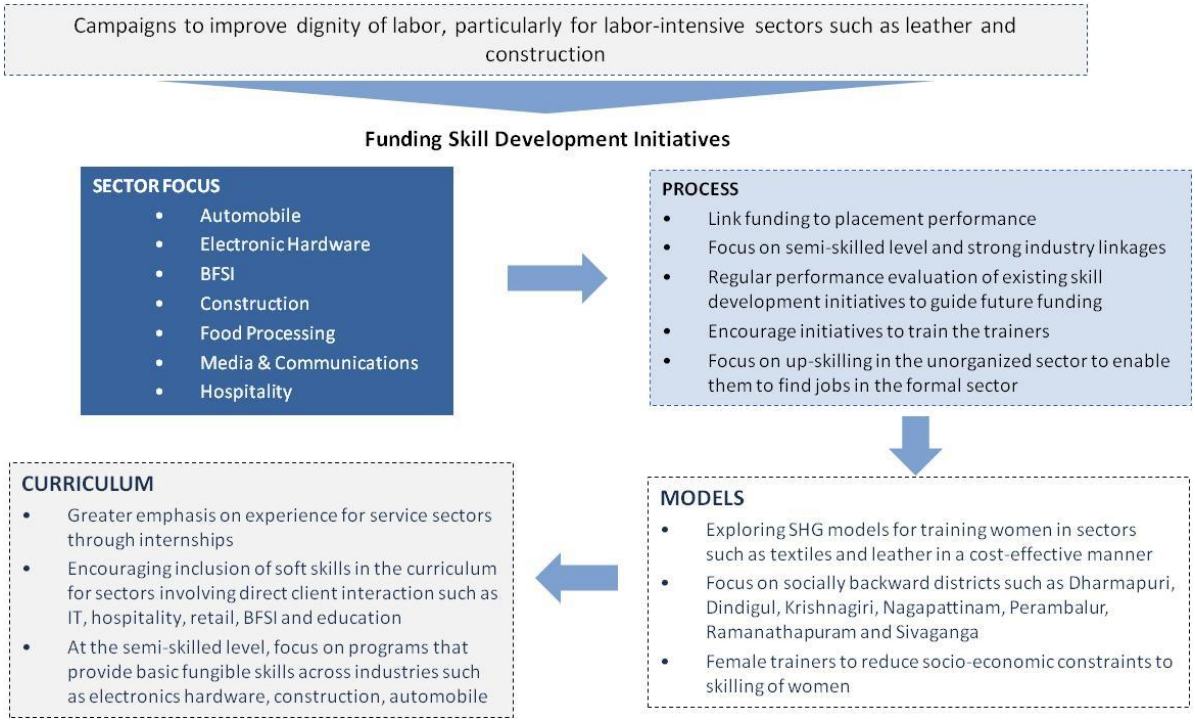
IMPLEMENTATION

1. The initiative may begin with NSDC partner institutes and other large skill training providers meeting formally to conceptualize the functioning of such a body
2. Constitution of a board consisting of representatives chosen by the training providers
3. The training providers association may be structured along the lines of other industry associations
4. Creation of online subscription systems for members
5. Media advertisements and publicity to encourage all training providers to join the association
6. Regular conferences and workshops to engage in dialogue with other stakeholders

11.5 Funding Skill Development Initiatives

The following figure summarizes the action plan recommended for NSDC in terms of funding institutes for skill development in the state of Tamil Nadu.

Figure 11.5: Recommendations for NSDC



Source: Athena Research

SECTORS

1. **Service Sectors:** Construction, tourism, travel & hospitality and organized retail are expected to show significant growth. Organized retail is estimated to grow in districts such as Chennai, Coimbatore, Madurai, Tiruchirappalli and Vellore. Tourism, travel and hospitality are expected to grow in traditional tourist destinations such as The Nilgiris, Kancheepuram, Dindigul, Kanniyakumari and Madurai, as well as important business districts such as Chennai and Thoothukkudi. Training initiatives for these sectors should be conducted in conjunction with industry to ensure relevance and the acquisition of soft skills. Training may be imparted through short-term courses involving working in the industry interspersed with theoretical training sessions. Investment in infrastructure creation may be minimized by using the work place for imparting practical training. Soft skills must form an integral component of the curriculum for sectors such as IT, retail, hospitality, BFSI, health and education.
2. **Manufacturing Sectors:** Adherence of curriculum to the norms developed by the relevant SSCs for the manufacturing sectors will ensure standardization. For technology-intensive sectors such as electronics hardware and automobile, which are clustered around Chennai, Kancheepuram and Thiruvallur, curricula must be updated at specified intervals in consultation with the SSCs. Courses must include mandatory internships/ apprenticeships to provide relevant industry exposure. For more labor-intensive industries such as food processing (expected to grow in Coimbatore, Dindigul ad Thanjavur), textiles (prominent in Tiruppur, Coimbatore and Erode) and leather (clustered around Vellore), training initiatives must have rationalized fee structures based on the expected salary levels on completion of the course to increase student uptake.

3. **Unorganized Sector:** Initiatives to skill the unorganized sector have only met with partial success. Training initiatives for this sector are likely to acquire significance in industrialized districts such as Chennai, Kancheepuram, Thiruvallur and Coimbatore. Training initiatives must focus on up-skilling existing workers. Training imparted must be short-term and provide multiple skills that are fungible across different service sectors, since those employed in the unorganized sector are typically required to perform multiple roles. Institutes may also allow students to take tests at a fee without enrolling in a course in order to obtain a formal certification for informally acquired skills, enabling them to transition to organized employment.

DISTRICTS

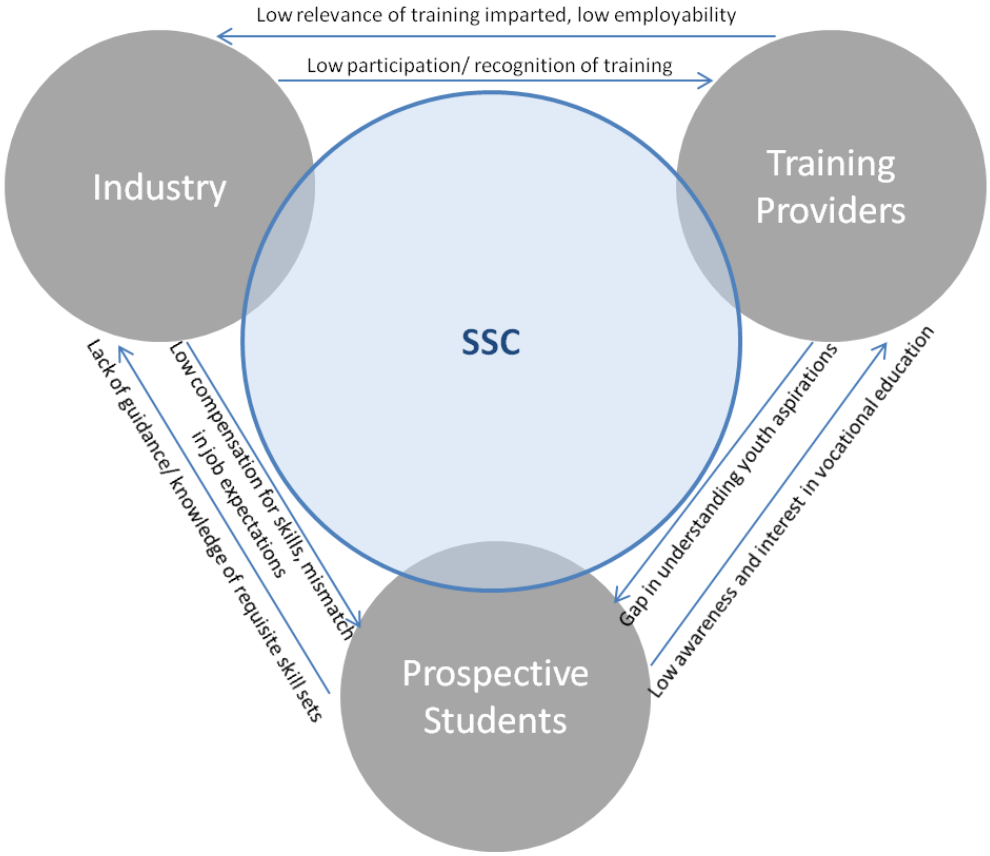
1. **Skilling Women:** Socially backward districts such as Dharmapuri, Nagapattinam, Dindigul, Krishnagiri and Perambalur have very low female participation in skilling. Socio-economic constraints prevent formal skilling and restrict employment options for women. Small scale programs with female trainers and community involvement through NGOs or Self-Help Group (SHG) models are likely to be effective. Training for sectors such as textile, leather and food processing may be provided under this mode.
2. **Entrepreneurship Development:** For economically backward districts such as Ariyalur, Perambalur, Theni and Thiruvarur, short-term courses and workshops may be conducted for entrepreneurship development. Collaborating with Micro Finance Institutions and NGOs is likely to be beneficial.
3. **Capacity Utilization:** For districts such as Cuddalore, Dindigul, Nagapattinam and Sivaganga where the utilization of current capacity at training institutes (particularly women's institutes) is non-optimal, new skilling initiatives may use existing infrastructure. Training on PPP mode may be explored in such areas to ensure qualitative improvements in courses through industry involvement while leveraging government infrastructure. Remote classes may also be provided with the collaboration of local schools and NGOs for very backward areas for less technical courses.
4. **Training the Trainers:** The shortage of quality trainers is a frequently reported probem across districts. Training the trainers initiatives should be taken up ensuring a high level of industry involvement. NSDC may institute standardized tests for evaluating the competence of trainers through SSCs to provide an indicator of trainer quality.

PROCESS IMPROVEMENTS

1. **Performance Evaluation:** A detailed performance review of the existing skill development initiatives may be undertaken in order to understand the characterisics of skill training institutes that affect performance, and to understand the type of business models that are most likely to be effective. Linking funding to institute performance (in terms of predetermined paramteres such as placements, number of people skilled, qualifications of trainers, etc.) will provide an incentive for training providers.

11.5.1 Role of Sector Skill Councils

The SSCs have a vital role to play in improving the skill development scenario for Tamil Nadu. Through greater engagement with skill training providers, it is possible to ensure focused, relevant and standardized training.



Source: Athena Research

There are multiple information gaps among the three main players in the training process – industry, training providers and prospective students. The role of the SSC should be to bridge these gaps for the relevant industry by acting as a facilitator, aggregating and disseminating relevant information and standardizing training by developing norms for curriculum and pedagogy. The following section discusses some of the mechanisms that can be used to achieve this goal.

Labor Market Information Systems

Construction, automobile and heavy machinery are expected to generate a significant requirement for skilled and semi-skilled human resources over the next decade. There are several skill development initiatives in these sectors and the employment opportunities are immense. There is a need for setting up Labor Market Information Systems to match availability and requirement for human resources. Institutions that focus on up-skilling existing unskilled and semi-skilled workers should be promoted.

Sector Skill Development Plans

There is immense potential for employment generation in sectors such as logistics, maritime, tourism and food processing. Sector skill development plans developed through market surveys and industry workshops will help identify the need for setting up new institutes.

Unorganized Sector

The skill acquisition process for the unorganized sector is often not understood clearly, which makes it difficult to target initiatives towards workers in this sector. SSC boards must include stakeholders representing the unorganized sector, particularly for service industries. SSCs must participate in developing a certification for skills based on skill competency standards for each sector through the administration of standardized tests for informally skilled workers.

Accreditation and Standardization

A large number of private institutes provide training in sectors such as IT, BFSI and hospitality. Institutes imparting training must be affiliated and accredited through a standardized process to ensure that students are not misled by unscrupulous players, which could further lower the credibility of skill development. Skill competency standards must be established to ensure that the qualifications assure a certain minimum level of ability, in order to incentivize the industry to recruit students from vocational training institutes.

Testing

There is a need for the development of a standardized testing mechanism across all accredited institutes offering a specific trade. An assessment framework that matches the skill competency standards developed by the SSCs and ensures that scores provide a clear indicator of student ability across courses and institutes will simplify recruitment processes and signal institute quality. The SSCs must participate in the development of such a framework in collaboration with the skill training institutes.

Advanced Training Institutes

There is a shortage of semi-skilled human resources in manufacturing sectors. The SSCs may facilitate the creation of centres of excellence by incubating ATIs to ensure that the training programs are relevant to industry requirements and constantly adapt themselves to changes in human resource requirements. The SSCs also have a vital role to play in promoting initiatives to train the trainers in sectors such as textiles, automobile, food processing and leather.

11.5.2 Collaboration with the State Government

Dialogue and collaboration between NSDC and the state government can help in the exchange of suitable business models, planned capacity additions and coordination of skilling efforts. It is recommended that greater dialogue through conferences and workshops be undertaken to avoid duplication of effort and facilitate exchange of information on successful practices and methods.

DISTRICT PROFILES

1 Ariyalur

1.1 Overview

Ariyalur is a relatively new district in Tamil Nadu, carved out of the erstwhile Perambulur district in 2001. It is bounded by Cuddalore in the north, Thanjavur in the south, Perambulur in the west and Nagapattinam in the east. The rivers Vellar and Kollidam run through the northern and southern parts of the district. Administratively, the district is divided into two revenue divisions, three *taluks*, and six blocks. Further, the three taluks comprise 195 revenue villages and 201 village *panchayats*.

Table 1-1: Basic Information (2010-11)

District Information	Ariyalur	Tamil Nadu
Number of inhabited villages	501	15,400
Area (Sq Km)	4,300	127,905
% of state area	3.36	100
Area rank	15	-
Revenue divisions	2	-
Taluks	3	-
Blocks	6	-
Corporation & municipalities	2	-
Town panchayats	2	-
Revenue villages	195	-
Panchayat Villages	201	-

Source: District Statistical Handbook (2010-11)

1.2 Demographic Profile

Ariyalur is sparsely populated, constituting about 2% of the state's population. The district has a low population density and a low annual population growth rate. Ariyalur is a predominantly rural district, with only 11% of the population residing in urban areas. With about 46% of the population engaged as agricultural laborers, there is an observed disparity between the per capita incomes of the urban and rural population. The sex ratio is higher than the state average, at 1016 females for every 1000 males, while the worker participation rate is also relatively high at 46%.

Table 1-2: Demographic Indicators (2011)

Population	Ariyalur	Tamil Nadu
Population	1,337,560	72,138,958
Share of state population (in %)	2	100
Population density (per sq. km.)	304.58	564
Urban population percentage	31.89	48.45
Total population annual growth rate (in %)	1.22	2
Urban population	426,611	34,949,729
Sex ratio (number of females per 1000 males)	977	995

Source: Census 2011 (Provisional)

1.3 Economic Profile

On account of being a relatively new and rural district, Ariyalur is one of the less developed districts of Tamil Nadu. It contributes only about 0.5% to the state's GDP and its per capita income is almost half the state average at INR 36,892.

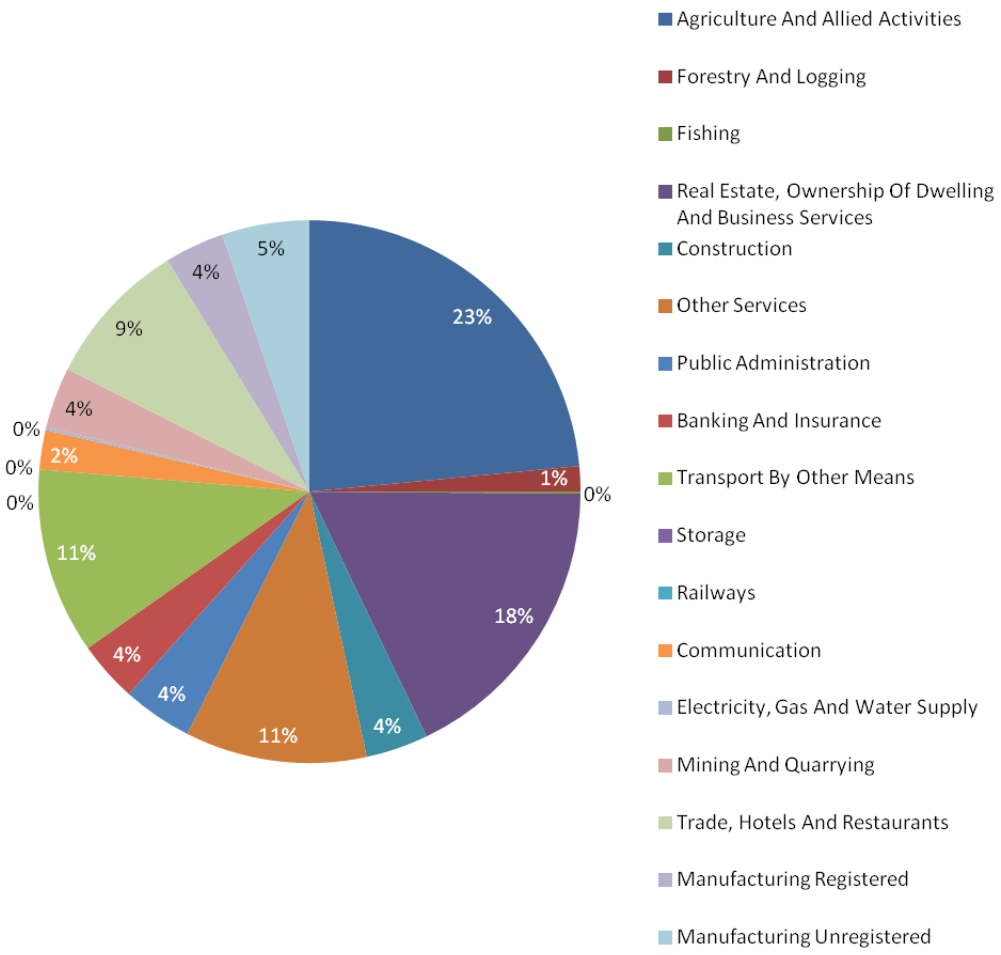
Table 1-3: Per Capita Income (2011-12)

Human Development Indicators	Ariyalur	Tamil Nadu
Per capita urban income	60,000	100,600
Per capita rural income	34,000	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

Agriculture forms a major part of the district accounting for 23% of the district GDP. Real Estate services and transport accounted for 18%and 11% of district GDP, respectively. Manufacturing accounts for just 8 %, of which the majority is unregistered manufacturing at 5 %. Other dominant sectors include Trade, hotels and restaurants and Other Services.

Figure 1.1: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

1.3.1 Agriculture

Ariyalur is a relatively under developed district, with a primarily agrarian economy. Over 80% of the district is engaged in agricultural activity. Further, of the total working population, only 72% are employed for a major part of the year, with 27% of the work force resorting to menial jobs and marginal working activity. The household and manufacturing industries in the district do not seem to generate employment opportunities, with only 5% of the working population employed in this sector.

Of the total cultivated land, 76% is for food crops. Around 48% of this sown area is under cereals, and 34% under fruits and vegetables. About 23% of the total sown area is under non-food crops such as sugarcane, cotton, oil seeds and tobacco. Almost 60% of this area goes to oil seeds, while sugarcane has a share of 29% of the remaining sown area. The total yield is lower than the state for most crops with the exception of sugarcane, cotton, mango and oil seeds.

Table 1-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	41,980	48.40%
Pulses	1,334	1.54%
Condiments	2,456	2.83%
Fruits and vegetables	33,168	38.24%
Other	7,796	8.99%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	7,790	29.25%
Cotton	3,820	14.34%
Oil Seeds	15,927	59.80%
Tobacco	0	0.00%
Other	-904	-3.39%
Total Area under Food Crops	**86,734**	**76.51%**
Total Area under Non Food- Crops	**26,633**	**23.49%**

Source: Tamil Nadu Crop Report (2011-12)

Table 1-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield For Ariyalur	Yield for Tamil Nadu
Cereals	8,979	12,136
Pulses	1,767	2,763
Sugarcane	101	101
Condiments	3,859	32,440
Vegetables	40,234	164,422
Mango	4,795	4,795
Cotton	80	368
Tobacco	0	1,524
Oil seeds	9,504	16,484

Source: Tamil Nadu Crop Report (2011-12)

1.3.2 Industry

The organized industry sector is estimated to employ only about 26,000 people in the district. The district has large mineral deposits, which has led to the district transforming rapidly into a mining hub. Celeste, lime stone, shale, sand stone, canker and phosphate nodules are found in various parts of the district. Of all these mineral deposits, lime stone is abundant in quantity and cement grade in quality. This has led to the establishment of eight major cement factories in the district, hosted by major cement manufacturing companies such as Arasu

Cements, Birla Cements, Sakthi Cements and Dalmia Cements. The cement industry is expected to grow further with investments worth INR 4750 crore in the pipeline over the next five years.

Additionally, the district has also seen a flurry of infrastructural investment activities, with one of the most prominent investments being in the power sector. The Jayakondam Lignite Power Project (JLPP) with a capacity of 1500 MW has been commissioned over the last year to facilitate the development of industries in the district.

Along with the major cement industries, numerous micro and small industries are registered with the District Industries Centre. The 2,145 units registered in the six blocks of Ariyalur district have a combined investment of INR 3,660 lakh over the past decade and generate sizeable employment for about 6500 people of the district.

In order to continue the sectoral growth in the district, the District Industries Centre has set up the Unemployed Youth Employment Generation Program (UYEGP) to provide assistance to the youth in the form of financial, technical, infrastructural, information and marketing support. The program is designed to enable the youth population of the district to set up their own micro and small industrial business ventures that could drive the economic development of the district. Various subsidies are also doled out to the existing industrial units, in an effort to sustain their business activities and slowly steer the district away from a rural agrarian economy towards an industrial/manufacturing hub.

1.3.3 Services

Over 53,000 people are employed in the organized service sector in Ariyalur. The presence of large cement units has led to the development of transport infrastructure in Ariyalur. There are three national highways and two state highways totaling a length of 211 kms, while the major and other district roads amount to a length of about 650 kms. The road length is complemented by a railway network line of about 89 kms with six railway stations.

In addition, there are 25 state bank branches in the district, with each revenue village given access to at least one business correspondent from the bank. The relatively low presence of bank branches in these districts is offset by the numerous state sponsored schemes for financial assistance – however, with increasing industrialization, this district might witness the development of financial sector in the future.

The district is also known for its temples, attracting a considerable number of religious pilgrims every year. The ‘Car Festival’ of Ariyalur at the temple of Kaliyaperumal, in particular, attracts thousands of tourists. The temple also performs special pujas in the month of September every year, which generates further tourist inflow into the district. The presence of other scenic spots such as national parks and bird sanctuaries along with the various temples makes the district viable for development as a tourist hub.

1.4 State of Education

The literacy rate of Ariyalur is high at 84%, against the state average of 80.3%. The female literacy rate has recorded a higher jump than the male literacy rate over the past decade, from a mere 51% in 2001, to 62% in 2011. However, this rise in literacy rate does not seem to be mirrored by the school educational infrastructure in the district, with only about 366 primary schools, 153 middle schools and 151 secondary and higher secondary school. This indicates an improvement in enrolment in existing schools.

Table 1-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	51.20	62.22	22%
Male	77.20	82.06	6%

Source: Census 2001, Census 2011(Provisional)

Table 1-7: Education Profile (2010-11)

Educational Statistics	Units in Ariyalur	Units in Tamil Nadu
Primary	366	33,909
Upper primary	153	8,552
Secondary	89	4,436
Higher secondary	62	4,632
NER – Primary (%)	98.92	98
NER - Upper primary (%)	96.89	98
Dropout rate- Primary (%)	2.54	3.81
Dropout rate - Upper primary (%)	9.94	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

There are three engineering colleges and two arts and science colleges in the district. There is also a hospitality college. The total capacity at ITIs and ITCs in 294. The details of major ITIs in the district are given in the appendix.

Table 1-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	3
Arts and sciences	2
Management	0
Medical	0
Dental	0
Nursing	0
Pharmacy	0
Other medical	0
Teacher training and education	0
Hospitality	1
Fashion technology	0
Polytechnics	2
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

1.5 Incremental Human Resource Availability

The work force in 2012 is 3.12 lakh, which is estimated to grow to 3.51 lakh by 2022. The incremental human resource availability will grow moderately over the next decade. Ariyalur is a relatively sparsely populated district.

Table 1-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labor Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	757	501	319	312		
2017	797	524	338	331	19	
2022	841	549	359	351		20

Source: Athena Research

A majority of the incremental human resource availability will be at the unskilled level. The incremental availability of skilled resources is expected to be higher than that of semi skilled resources over the next decade. The following table illustrates the availability of human resources at different skill levels.

Table 1-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	11	2	5	19
2017-22	14	1	5	20

1.6 Incremental Human Resource Requirement

The incremental human resource requirement is expected to arise in sectors such as chemicals, construction, transport and the unorganized sector. The human resource requirement in agriculture is expected to decline. The large employers in the district are involved in sugar and cement. Primary research suggests that these industries are automated, indicating a need for entrepreneurship development in the district for development of industry.

Table 1-11: Incremental Demand by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-18	0	-3	**-21**	-15	0	-3	**-19**
Automobile	0	0	0	**0**	0	0	0	**0**
Chemicals and Pharmaceuticals	0	1	1	**0**	0	1	1	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	0	0	0	**0**	0	0	0	**0**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**0**	0	0	0	**0**
Handlooms & Handicrafts	0	0	0	**0**	0	0	0	**0**
Leather	0	0	0	**0**	0	0	0	**0**
Textiles	0	0	0	**0**	0	0	0	**0**
BFSI	0	0	0	**0**	0	0	0	**0**
Construction	1	0	0	**2**	3	1	0	**3**
Education	0	0	0	**0**	0	0	0	**0**
Healthcare	0	0	0	**0**	0	0	0	**0**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	0	0	0	**0**	0	0	0	**0**
Organized Retail	0	0	0	**0**	0	0	0	**1**
Real Estate	0	0	0	**0**	0	0	0	**0**
Tourism & Travel	0	0	0	**0**	0	0	0	**0**
Transportation & Logistics	0	0	0	**1**	0	0	0	**1**
Unorganized (excluding Agriculture and Construction)	14	7	10	**30**	16	10	12	**39**
TOTAL	**-1**	**8**	**8**	**13**	**5**	**12**	**12**	**27**

Source: Athena Research

1.7 Skill Gap

The skill gap at the semi skilled level is expected to be 5,000 by 2017 and 10,000 by 2022 at the semi skilled level. At the skilled level, the gap between incremental human resource requirement and availability is estimated to be approximately 3,000 by 2017 and 7,000 by 2022. There is expected to be an excess availability of unskilled human resources over the next decade, indicating the need to skill this section to meet human resource requirements in the industry.

Table 1-12: Skill Gap in 000's

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	-1	8	8	**13**	5	12	12	**27**
Incremental Human Resource Availability	11	2	5	**19**	14	1	5	**20**
Skill Gap	**-13**	**5**	**3**	**-6**	**-9**	**10**	**7**	**6**

Note: Figures in negative indicate excess human resource availability
Source: Athena Research

The yield levels in the agriculture sector are constrained on account of the lack of modernization. Primitive farming methods are practiced. Further, most of the land area currently used for agricultural purposes is marginal in nature, which does not allow for large scale mechanization processes to be implemented. There is an excess supply of agricultural laborers, resulting in lower wages and lower marginal returns. Over the next decade, the contribution of agriculture to employment is likely to contract. There is a need for up-skilling of existing workers in the agriculture sector to improve productivity through the adoption of modern practices.

The pattern of skill gap suggests sustained increase in the requirement for semi skilled and skilled resources with the growth of sectors like construction and logistics. This trend will continue in the next period, as employment grows with an expanding industry.

Low Industry Exposure

The automation of factories reduces the dependence on labor for large industries such as cement. In such industries, since most of the skills are imparted on-the-job, worker attitude gains greater prominence. Unskilled and semi skilled human resources hired in such industries do not show an inclination to acquire new skills. Low industry exposure prolongs the training period for new recruits.

Lack of guidance regarding skill development

Education levels are moderate. People in and around the urban pockets are aware of the benefits of a good education, and therefore pursue educational opportunities offered to them. However the youth in the relatively rural areas are unaware and unwilling to spend either time or money on education or skilling

1.8 Youth Aspirations

Table 1-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	**Low**
Employment Potential	**High**	Logistics & Transportation	Construction
	Low	Chemicals & Pharmaceuticals	Agriculture

Source: Athena Research

Information unavailability: The youth reported a general lack of guidance and awareness regarding skill development; this might be due to the absence of sophisticated industries in the district. The lack of information

about different courses and industry requirements leads to uninformed career choices and partially accounts for the low capacity utilization of existing training capacity. There is a reported lack of industry exposure.

Poor basic education: The district reports poor primary and secondary education facilities that lead to difficulties in following lessons at higher educational institutions. It was felt that an improvement in basic education would enhance the absorption of concepts at the vocational training level.

Preference for informal skill acquisition: The youth cited significant opportunity costs of training that is associated with loss of employment and wages. Many were unwilling to undergo training since it would require them to forgo their current jobs. Low compensation for skills and lack of employability further exacerbated the problem, creating disincentives for skill acquisition. Typically, those who want to acquire skills do so informally by working with a professional. This provides them on-the-job experience and employment, as opposed to a vocational education course that relies on classroom teaching.

Low willingness to migrate: The unemployed and the vocationally educated cohort showed a low willingness to migrate to other districts for work. The female cohort was particularly apprehensive about migration, which restricts access to employment opportunities.

Preference for traditional sectors: The district being less developed, witnesses a large presence of traditional industries creating a high preference for sectors like textiles and construction among the youth. This necessitates the need to promote skill development and its associated benefits in the district. Sectors like agriculture and chemicals were least preferred by the youth, due to a perception of unfavorable working conditions and a lack of interest in the agricultural sector across the state.

Existing infrastructure unsuitable: There is a high preference for formal education, partly due to the lack of information about vocational education. Capacity utilization at the existing ITIs is low. Basic infrastructure at these institutes needs to be improved. There is a very little incentive for skill development due to limited job opportunities within the district and the low willingness to migrate to other districts. The lack of interest in skill development and education makes student mobilization very difficult in the district.

1.9 Recommendations

1.9.1 State Government

Promoting Skill Development

Since information unavailability is a challenge for industry as well as the youth, the state government could provide career information through regional DET offices and employment exchanges in the following manner:

a. Information on skill development courses, the associated industries and jobs and the course structure could be provided through State Employment Exchanges using flyers and institute brochures. Since the unemployed youth show the highest inclination towards acquiring skills, this is likely to be an effective targeting method.
b. Presentations about courses and the benefits of vocational education may be made by ITI faculty to potential students in schools to provide guidance on skill development and position it as an alternative to formal education.

Institutional Changes

Certain institutional amendments could significantly improve the state of skill development in the district.

a. Access to services remains a major constraint in adoption of skill development among the rural and backward areas. Provision of accommodation services at ITIs will make it possible for students from different parts of the district to enroll in the institutes.
b. To increase the enrolment in vocational education, greater returns on investment in skill development could be established by setting wages relative to particular skill sets. Based on the skill levels defined by the SSCs, the industrial units in the district may be requested to provide information on the minimum wage at each skill level to reflect wage escalation corresponding to the acquisition of skills. This information could be provided to students as part of the promotional activities outlined above.
c. Strengthening basic education is a necessary first step towards making vocational education effective. Improving the infrastructure for school education, providing training through refresher courses to school teachers and coordinated efforts among the Departments of School Education, Collegiate Education, Technical Education and Employment & Training to improve pedagogy are essential.
d. Entrepreneurship must be encouraged through the establishment of SIPCOT complexes. This will lead to industrial development and employment generation, thereby creating an incentive for skill acquisition.

Incentivizing Vocational Education

A major limiting force to low adoption rates is the opportunity cost associated with taking up a skill development course in terms of loss of wages incurred if employed. Incentives to enroll in vocational education may be provided in the following manner:

a. Providing students enrolled in ITIs a stipend for the duration of the training program to enable them to sustain themselves.
b. Providing evening/ weekend classes for short duration courses so that students can simultaneously work.
c. A central placement cell for ITIs and other skill training providers should be established. This would prove be beneficial for large firms that can afford to conduct campus recruitments. Smaller firms in the textile industry, which has a growth potential of 11% (2012-22), would feature in this category. The placements offered to students at ITIs must reflect a premium for skill acquisition against the wages received by unskilled workers.
d. Self Help Group models for skilling women must be undertaken in rural areas for industries such as food processing and textiles. The literacy rate for women has increased to 62% (2011) in the district, although it still remains well below that of men which is over 80%. There are socio-economic constraints to the skilling of women that make it difficult to target this section of the population. Projects such as the World Bank's Pudhu Vaazhvu, which offer livelihood skills to women through a community-driven approach, have been successful in overcoming these constraints and skilling women.

Quality Control

Controlling the quality of training institutes is of utmost importance; this would not only draw more students but would also ensure effective absorption of training provided. There are several ways the State could do this:

a. Creating guidelines for training curricula for different courses with the assistance of SSCs and industry inputs.
b. Offering short-term training of trainers programs at ITIs, open to faculty at all skill training institutes. These programs should ensure that the faculty at these institutes remain updated of the latest developments in the industry, adopt effective teaching methods and have the option of undergoing refresher courses.

c. Upgrading equipment at ITIs in line with technological advancements, particularly for technical courses such as instrument mechanic. The growth potential in industries such as the hardware and electronics is enormous as they are expected to grow at 10% between the years 2012-22. This would require workers to be familiar with use of recent forms of technology and equipment, if they are to avail employment in these sectors.

1.9.2 Industry

On-the-job Training

To avoid problems of high opportunity costs associated with taking up courses, the industry could provide options for on-the-job learning programs:

a. In sectors such as food processing, electronics and hardware, on-the-job training could be provided by pairing each new recruit with an experienced worker for the first few weeks.
b. An induction program to acquaint employees with work guidelines and practices will help make the transition smoother.
c. For technical jobs requiring intensive training, employers may offer leave to employees for the duration of the course, thereby providing the security of a job on completion of training.

Linking Wages with Skill Set

The absence of a clear link between wages and skills confounds the skill acquisition choice. In order to address this:

a. Industries must develop norms through district level industry associations to revise wages and compensation to reflect an increase in skill level or experience. Institutionalizing the returns to skill acquisition will encourage employees to become skilled.
b. Industry must also evolve norms on promotions and career progression for unskilled and semi skilled workers to motivate them to acquire new skills on-the-job.

Partnership with Skill Training Providers

a. The industry should not only participate in providing inputs to training institutes on curriculum, but also advise them on suitable equipment and infrastructure to be used, particularly for industries using sophisticated technologies.
b. New industries such as organized retail and construction that have a high requirement for skilled human resources should be encouraged to launch campus recruitments.
c. Smaller firms may arrange off campus placements with skill training institutes by interviewing candidates at the company office.

Working Conditions

a. The industry must evolve norms on the minimum level of work facilities to be offered to workers in order to improve the working conditions. The space allocated per worker, eating area, safety equipment and working hours must conform to the minimum industry standards evolved by the industry members through consultations with the government and mutual discussions through industry forums and associations.
b. Informal workers and contract labor should be covered under the existing labor laws and provided safety gear and basic facilities.
c. Industries should engage in regular employee feedback to improve worker retention and address employee grievances through discussions with workers.
d. Efforts to make the working environment more gender sensitive are essential for increasing female labor force participations rates.

1.9.3 Training Providers

Collaborate with Industry Experts

a. Greater industry involvement in training will provide practical knowledge, keep the students up to date with current industry trends and increase their employability. This has several other associated benefits such as enhancing confidence and leadership among students.
b. Develop greater interface and collaboration with industry experts, particularly new and upcoming industries such as food processing that estimate a growth rate of 19% in the years 2017-22, through consultations for curriculum development, industry visits, guest lectures, orientation programs, internships and apprenticeships.
c. Inclusion of a module on general knowledge and soft skills would boost their intellect and raise awareness on current affairs. Many of the large industrial units in the district, particularly in the cement sector are capital intensive and automated to a large extent. Therefore, the workers employed in these units do not require a high level of technical skill. However, worker attitude takes prominence in such a setting. Short-term training courses providing soft skills and organizational behavior should be offered to new recruits/ potential candidates at these units.
d. Institutes could also collaborate with specific industries in developing job specific training curricula, particularly for technical jobs in the electronics hardware industry. The food processing industry requires basic skills that may be imparted through short-term courses to ensure greater efficiency and consistency in work force practices. Hygienic practices, training for international food standards, basic management and supervision functions should be included in the curriculum.

Up-Scaling Activities

Training institutes must adopt a more flexible approach towards training to increase enrolment in vocational programs. Measures may include:

1. Allowing for flexible course timings that will enable students to learn while they work;
2. Raising the level of compensation to attract qualified trainers;
3. Employing female trainers to encourage participation of women in skill development programs, especially considering the low female labor force participation rates;
4. Upgrading existing infrastructure to ensure that they match industry requirements; and

5. Creating a career placement cell that will inform and guide students on the various opportunities available and that will also market skill development as an alternative career path.

In order to fund these measures, the course fees could be linked to the expected compensation for a particular industry.

1.9.4 NSDC

Sectors

NSDC should prioritize funding for industries such as food processing, electronics and cement, which are likely to show growth in the coming years. Initiatives to impart training to modernize agricultural practices are likely to benefit the district. Workshops for entrepreneurship skills should be conducted to encourage people to set up their own enterprises.

Institute location

Given the low willingness to migrate and the skewed distribution of employment opportunities, training initiatives that focus on soft skills and large industries should be located in the more industrialized parts of the district. Awareness campaigns may form a part of the student mobilization exercise for such institutes, bridging the information gap faced by the youth.

Pricing

Courses must be priced relative to the expected compensation for the skill set within the district. Rationalized fee structures are more likely to help prospective students make an informed choice regarding the benefits of the course relative to their existing compensation and skill levels.

Community involvement

Skill training initiatives in rural areas must include a high degree of community involvement in order to successfully mobilize students. Skills may be imparted through community based Self Help Group models, village-level training groups or the involvement of local partners such as NGOs. However, such initiatives are only likely to be suitable for lower level skills in labor-intensive production processes. This is likely to be very effective for the agriculture sector.

2 Chennai

2.1 Overview

Chennai is the capital of Tamil Nadu and is located in north east Tamil Nadu. It is bordered by the Bay of Bengal in the east, Thiruvallur in the north and Kancheepuram in the south and west. It is the smallest district in the state but also the most densely populated. Being a city district, it does not have a district headquarters. There are five taluks: Egmore-Nungambakam, Fort-Tondiarpet, Mambalam-Guindy, Mylapore-Triplicane and Perambur-Purasawakam.

Table 2-1: Basic Information (2010-11)

District Information	Chennai	Tamil Nadu
Number of inhabited villages	0	15,400
Area (Sq Km)	188	127,905
% of state area	0.15	100
Area rank	32	-
Revenue divisions	1	-
Taluks	5	-
Blocks	0	-
Corporation & municipalities	1	-
Town panchayats	0	-
Revenue villages	55	-
Panchayat Villages	155	-

Source: District Statistical Handbook (2010-11)

2.2 Demographic Profile

Chennai contains a little over 6% of the state's population with over 46 lakh people densely distributed at about 24,000 people per square kilometers. The population is entirely urban and constitutes about 14% of the total urban population of the state. Per capita incomes are the highest in the state, and agricultural workers account for less than 5% of all workers. Worker participation rates are slightly below the state average at 31.8. Human development indicators are the highest in the state with HDI and GDI of 0.757 and 0.766 respectively.

Table 2-2: Demographic Indicators (2011)

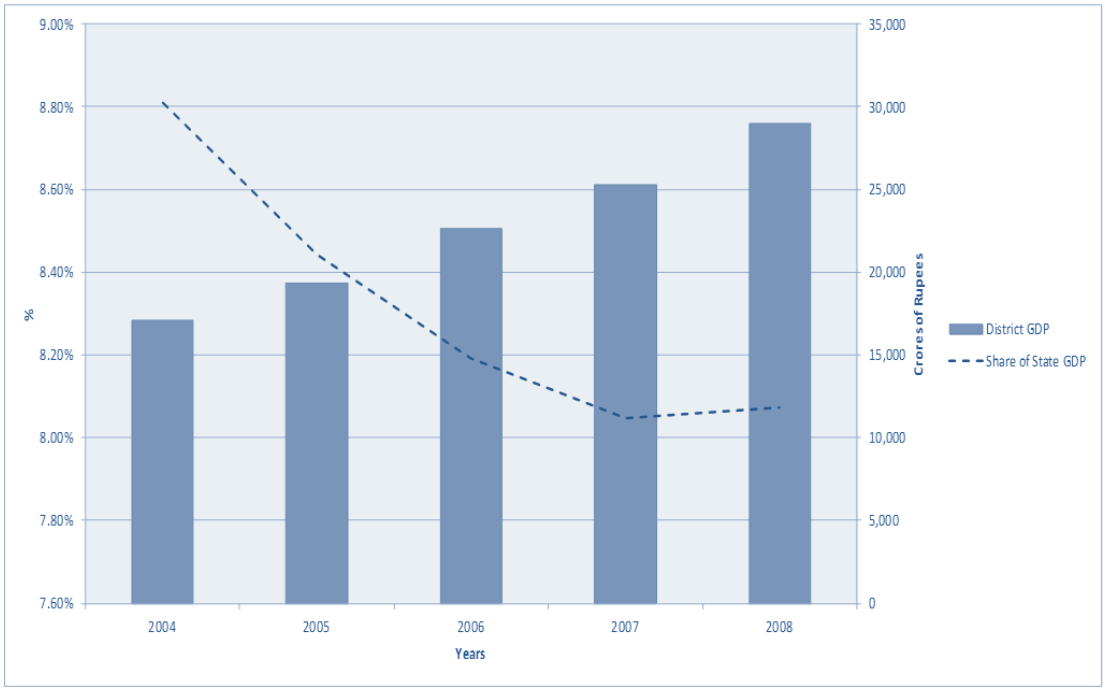
Population	Chennai	Tamil Nadu
Population	4,681,087	72,138,958
Share of state population (in %)	6	100
Population density (per sq. km.)	24939.20	564
Urban population percentage	100.00	48.45
Total population annual growth rate (in %)	0.75	2
Urban population	4,681,087	34,949,729
Sex ratio (number of females per 1000 males)	986	995

Source: Census 2011 (Provisional)

2.3 Economic Profile

Chennai remains the economic nerve centre of Tamil Nadu, though its importance in the state economy has steadily declined since the early 2000s reflecting the development occurring elsewhere in the state. Per capita incomes are the highest in the state, and are significantly higher than the second highest district. The share of the district in state GDP has fallen steadily over time, from 8.8% to 8%.

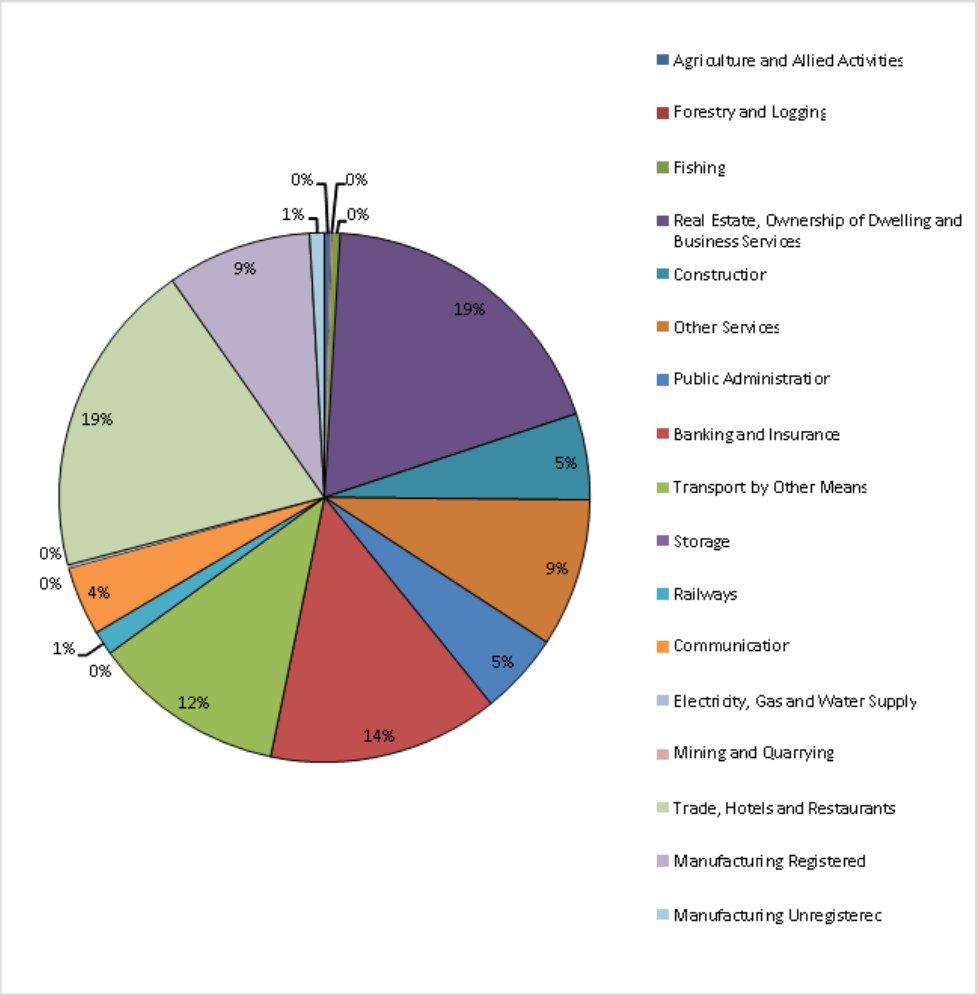
Figure 2.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Chennai's GDP is dominated by services like trade and hospitality (19%), real estate (19%), banking and financial services (14%) and communication. Manufacturing accounts for only 10% of the district GDP, of which unregistered manufacturing has a less than a 10% share.

Figure 2.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 2-3: Per Capita Income (2011-12)

Human Development Indicators	Chennai	Tamil Nadu
Per capita urban income	196,000	100,600
Per capita rural income	0	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

2.3.1 Industry

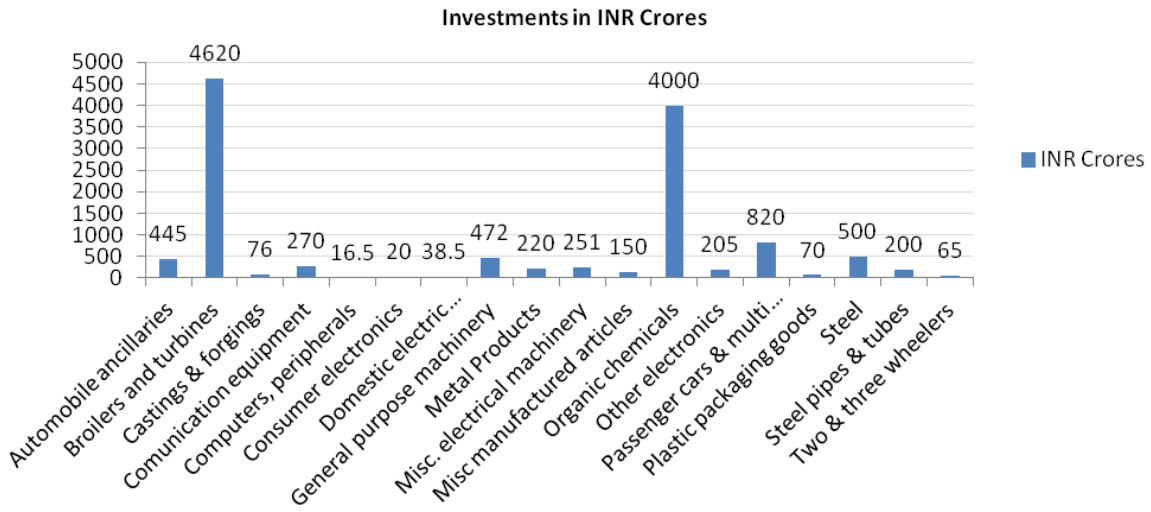
Chennai is possibly the most industry oriented city in the nation, employing nearly 1.8 lakh people in the industry sector, and has a long history of association with the same. It has earned the moniker 'Detroit of Asia' due to the large number of automobile manufacturers like Hyundai, Renault, Nissan, Ashok Leyland, Daimler, Komatsu, Ford, BMW and Mitsubishi that have set up shop in and around the city. It hosts about 30% of India's automobile industry and about 40% of the automobile components industry. The city accounted for more than

60% of all of India's automotive exports. Most of the workforce in the Chennai district is, therefore, understandably absorbed by the tertiary sector, with barely 1% of the workforce engaged in agricultural activities.

Besides this, there is also a Heavy Vehicles Factory at Avadi that manufactures tanks and military hardware along with a Coach Factory producing trains and coaches for the Indian Railways. The Ambattur-Padi industrial zone is home to petrochemical industries along with many textile manufacturing units, and the city is the largest contributor to India's leather exports. Electronic hardware manufacturers like Dell, Nokia, Motorola, Cisco, Samsung, Siemens, etc. have recently begun setting up plants and R&D centres in the city, which the government plans to develop into a global electronics centre in the next 15 years.

The city is also home to a large base of medium and small scale enterprises particularly in textiles. At last count, there were 50,096 small scale industries.

Figure 2.3: Expected Sectoral Investments



Source: Capex Data, CMIE (2012)

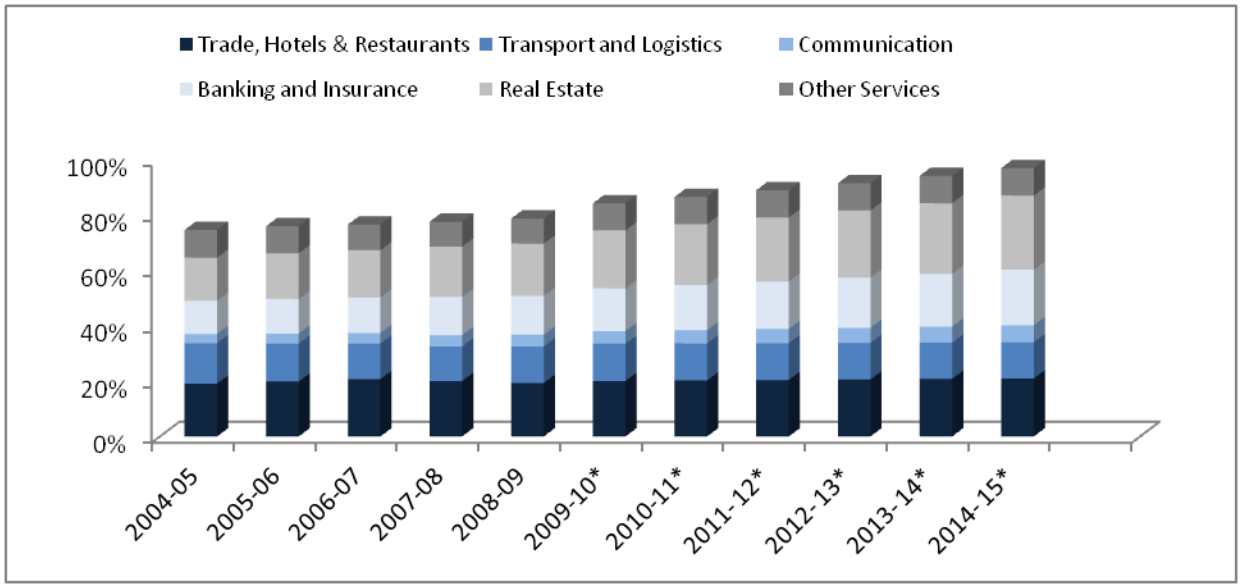
Capex data on recent investments in the region show that investment continues to be high in heavy industries, with large investments being made in boiler turbines and organic chemical plants. Steel, pipes, automobiles, computer hardware, castings and forgings and electronics, all show sustained investment, indicating that the current industrial profile of Chennai is largely set to remain the same, with strong growth.

2.3.2 Services

The service sector is the largest contributor to district GDP. The role of the service sector is expected to grow from the 79% in 2008-09 to 92% of the district GDP in 2012-13, with a big chunk of this growth being led by the real estate and banking and insurance sectors.

At an annual growth rate of 13% and 14% respectively the real estate and banking and insurance sectors, are the fastest growing sectors in the district and contribute to almost 40% of the district's GDP. This is closely followed by the trade, hotels and restaurants and transport and logistics, which jointly contribute to one third of the district GDP.

Figure 2.4: Contribution of Service Sectors to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

Chennai has emerged as one the leading offshore operations and outsourcing centres in the world. Over 16.5 lakh people are employed in the service sector. The high level of technical education facilities in the city has seen Chennai host major software and service providers like Accenture, Cognizant, CapGemini, SAP AG, Oracle, Cisco, Amazon, Bosch, Wipro, Infosys, IBM, etc. The IT corridor comprises the south east part of the city, and will provide, at full capacity, employment to about 300,000 people. Tidel Park is also another major hub. Besides Bangalore, Chennai is the largest exporter of IT and IT services in the country. The city is also home to several of the world's largest financial and banking institutions like HSBC, World Bank, Standard Chartered Bank, RBS, Deutsche Bank, ADB, BNP Paribas, etc. The nature of operations is largely back office and support oriented.

Tamilnadu, and Chennai in particular, is a leading provider of health care services in the country, and is considered the health capital of the country. Over 45% of global medical tourism into India finds its way to Chennai, as well as about 30-40% of domestic medical tourism. The city hosts some of the largest medical organizations like the Apollo Hospital. The entertainment industry in Tamil Nadu is also concentrated in Chennai.

2.4 State of Education

The literacy rate is high at 85% which is above both state and national levels. Overall, literacy has shown an increasing trend, with female literacy showing a dramatic increase from 80% to about 87% from 2001-2011, while male literacy went from 90% to 93% in the same period. Net enrolment ratios were slightly below the state average of 98% at 97.23% and 97.92% for primary and upper primary respectively.

Table 2-4: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	80.40	87.16	0.08
Male	90.00	93.47	0.04

Source: Census 2001, Census 2011(Provisional)

There are 571 primary schools, 262 upper primary schools, 262 secondary and 509 higher secondary schools in the district. Net enrollment ratios are high for the primary level, at nearly 97%. Dropout rates are high at the primary level at 7% and upper primary level at 6%. According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 1,47,126, while enrolment in schools that had primary and upper primary classes was 61,167. Enrolment in upper primary schools was 56 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 3,44,168, while enrolment in schools with upper primary and secondary/ higher secondary classes was 87,371.

Table 2-5: Education Profile (2010-11)

Educational Statistics	Units in Chennai	Units in Tamil Nadu
Primary	571	33,909
Upper primary	262	8,552
Secondary	268	4,436
Higher secondary	509	4,632
NER – primary (%)	97.58	98
NER - upper primary (%)	98.55	98
Dropout rate – primary (%)	6.75	3.81
Dropout rate - Upper primary (%)	6.02	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

There are 26 engineering colleges and 12 arts and science colleges in the district. There are 2 medical colleges, 1 dental college, 2 nursing colleges, 1 pharmacy college, 5 other medical colleges and 8 polytechnics. The combined capacity of all the ITIs and ITCs in the district is 8,526. The details of the major ITIs in the district are given in the appendix.

Table 2-6: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	74
Arts and sciences	71
Management	23
Medical	11
Dental	7
Nursing	13
Pharmacy	10
Other medical	24
Teacher training and education	42
Hospitality	30
Fashion technology	6
Polytechnics	45
Agriculture	4

Source: UGC, AICTE, MHRD Database (2010-11)

2.5 Incremental Human Resource Availability

Chennai has the highest population in the state, accounting for nearly 6.5% of Tamil Nadu's population. High migration into the district from other districts as well as other states has been observed over the past few decades. The work force in 2012 is estimated to be 19.4 lakh, which is estimated to grow to 25.49 lakh by 2022.

Table 2-7: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	4,709	3,114	1,987	1,940		
2017	5,156	3,401	2,246	2,199	259	
2022	5,676	3,727	2,549	2,500		301

Source: Athena Research

The highest incremental human resource availability is expected at the skilled level due to high enrolments and rising enrolment in higher education. Primary research indicates a strong preference for formal education rather than vocational education, which is expected to lead to relatively low availability of semi skilled human resources in spite of additional capacity creation.

Table 2-8: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	181	17	61	259
2017-22	208	15	79	301

Source: Athena Research

2.6 Incremental Human Resource Requirement

The incremental human resource requirement is expected to arise in sectors such as chemicals, construction, transport and the unorganized sector. The human resource requirement in agriculture is expected to decline. The large employers in the district are involved in sugar and cement. Primary research suggests that these industries are automated, indicating a need for entrepreneurship development in the district for development of industry.

The long term growth sectors for Chennai appear to be auto and auto components and IT/ITES. The IT/ITES sector is already well established in the district and is expected to grow rapidly. The auto and auto components and electronics hardware industries will require an enabling environment to grow, and are expected to expand rapidly over a span of several years. Traditional industries like leather are expected to continue robust growth, though there will be shifts in the nature of products produced as competing districts will erode the cost based competitiveness of these industries, necessitating higher levels of technology and variety of products.

Table 2-9: Incremental Demand by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	0	0	0	**0**	0	0	0	**0**
Automobile	10	13	4	**27**	17	22	8	**46**
Chemicals and Pharmaceuticals	4	5	8	**0**	3	5	8	**0**
Electronics Hardware	0	0	1	**2**	0	1	2	**3**
Food Processing	1	0	0	**2**	2	0	0	**2**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**1**	1	0	0	**1**
Handlooms & Handicrafts	0	0	0	**0**	0	0	0	**0**
Leather	6	2	2	**10**	8	3	3	**14**
Textiles	10	2	2	**14**	14	3	3	**20**
BFSI	0	6	16	**23**	1	8	23	**32**
Construction	36	7	3	**47**	80	15	7	**103**
Education	0	1	14	**16**	0	1	17	**19**
Healthcare	1	5	9	**15**	1	5	9	**15**
IT and ITES	0	5	65	**70**	0	7	88	**94**
Media & Entertainment	1	6	11	**19**	2	10	20	**33**
Organized Retail	9	2	6	**17**	15	3	11	**30**
Real Estate	0	1	5	**7**	1	2	7	**9**
Tourism & Travel	19	69	62	**150**	30	119	106	**255**
Transportation & Logistics	11	3	2	**15**	12	3	2	**17**
Unorganized (excluding Agriculture and Construction)	85	43	59	**188**	100	65	77	**242**
TOTAL	**196**	**170**	**270**	**620**	**287**	**273**	**391**	**936**

Source: Athena Research

2.7 Skill Gap

The skill gap at the semi skilled level is expected to be 1.53 lakh by 2017 and 2.58 lakh by 2022. At the skilled level, the gap between incremental human resource requirement and availability is estimated to be approximately 2.1 lakh by 2017 and 3.12 lakh by 2022. Strong growth of sectors such as construction, transportation and the unorganized sector, which are relatively less skill intensive, is also likely to create a gap at the unskilled level.

Table 2-10: Skill Gap in 000s

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	196	170	270	**620**	287	273	391	**936**
Incremental Human Resource Availability	181	17	61	**259**	208	15	79	**301**
Skill Gap	**15**	**153**	**210**	**361**	**79**	**258**	**312**	**634**

Source: Athena Research

The pattern of skill gap suggests sustained increase in the human resource requirement at the skilled level with the growth of the IT/ITES sector. While employees appear to possess soft skills such as communication, employers see a huge gap in terms of technical skills and attitude towards work.

Traditional industries like leather employ a large number of unskilled and semi-skilled workers and improve their production processes. This trend will continue in the next decade, as employment grows with an expanding industry. However, the locals usually aspire for white collar jobs so it is difficult to source workers at lower skill levels from the city. There is a huge inflow of migrant workers from the other districts of Tamil Nadu as well as other states.

The combined demand of IT/ITES and auto and auto components industries, along with new sectors like electronics hardware will see a surge in the demand for semi skilled and skilled human resources, leading to a deficit in 2022. While the educational attainment of the local populace is high, the quality of education is not uniform.

High variation in quality of workforce

Despite the rising industrialization and urbanization of the district, the district has not seen uniform development. The less developed areas have poor access to skilling and employment opportunities and the quality and intensity of skill acquisition is seen to vary widely within the district. More even development is required to ensure that the youth belonging to more backward regions of the district have adequate information and aspire to become more skilled.

Low industry training provider collaboration

Only large firms recruit from ITIs and other education institutes. For smaller firms, conducting campus recruitments is not a viable option since their labor requirements are small and sporadic. Additionally, students who have completed diploma courses expect higher compensation even if their skill level does not match the job requirements. Small firms are not in a position to meet such demands. Therefore, they find it difficult to source workers, and have to do so through informal methods.

2.8 Youth Aspirations

Table 2-11: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	IT, ITES, Automobile	Leather, Construction
	Low	Textiles, Electronic hardware	Agriculture, Handloom

Source: Athena Research

Mismatch in Expectations: There is a mismatch between job expectations and work conditions at both the unskilled and skilled level. The respondents stressed the need for greater industrial training and placements at the skilled and semi-skilled level. There is a lack of guidance regarding skill development.

Lack of mobility: The lack of mobility between vocational and formal education at lower levels of education serves as a disincentive to vocational education. Skill development is not seen as an alternative to formal education. The respondents also expressed their apprehensions with regard to career progression with vocational education. There is a high preference for formal education and employment in large industrial firms. Hence, student mobilization continues to be a challenge for skill training providers. Government ITIs collect addresses of the students from local government schools and send letters to the students in an attempt to spread awareness about the course.

Preference for service sectors: Youth do not view traditional sectors like agriculture and handlooms favorably and do not wish to work in the unorganized sector. Youth view high technology industrial sectors like IT/ITES and auto and auto components most favorably. They also view sectors like textiles and electronic hardware favorably. However, sectors like leather and construction are not preferred by most students. Work environment determines sector preference. Respondents prefer working in sectors such as hospitality or retail rather than at factories because the dignity associated with such jobs is higher.

Improvement in basic education: While the syllabus at the ITIs has been revised to ensure relevance, some of the material is now difficult for the students to handle owing to the weak basic education. The need for innovative methods of teaching delivery using technology has been recognized, but the requisite infrastructure is yet to be created. Collaboration with industry partners is seen as a means to ensure better infrastructure and placements for the institute.

Low willingness to migrate: Most of the students are between 18 and 20 years of age when they complete their diploma/vocational course. Parents are unwilling to allow children to migrate to a different area for work at this age. Social constraints limit worker mobility.

2.9 Recommendations

2.9.1 State

Capacity Addition

Chennai has the highest skill gap among all districts for semi skilled and skilled workers amounting to 5.7 lakh and 3.9 lakh respectively. This indicates that a huge proportion of workers need to be trained.

Action Plan:

a. The skilling infrastructure in the district is low, particularly for the construction and automobile industries. The industry has reported a shortage of skilled welders and mechanics. It is recommended that the government aid efforts to set up new government ITIs catering to high growth sectors like automobiles, leather, textiles, and electronic hardware in the district.
b. Skill development must focus on new growth areas such as logistics, hospitality, retail, construction and IT, which are likely to grow as support sectors for industry sectors such as automobile, leather and textiles. Shorter term courses for service industries like IT and ITES and organized retail should also be encouraged as they also project a high demand for semi-skilled workers. Training delivery through PPP delivery models are recommended for service sector skill development programs, since industry involvement in curriculum development and delivery is crucial for ensuring relevance and quality of skills.

Skill Development among Migrants

The district is set to face a net excess of 2.4 lakh unskilled workers. The youth have high aspirations, and they migrate to the city in search of opportunities to fulfil their ambitions. There is tremendous potential for up-skilling migrant workers.

Action Plan:

a. Skill development promotion campaigns through third parties in the form of flyers and direct interactions should be targeted towards sectors such as construction, security and leather that often employ migrant workers from other districts.
b. Employers should be involved in these promotional programs to ensure that skill acquisition leads to subsequent wage escalation for the workers.
c. Offer short-term courses and evening courses to allow workers to acquire skills while retaining employment.

Focus on the Unorganized Sector

Chennai has one of the largest unorganized service sectors in the state. They contribute to the large excess of unskilled workers. Promoting vocational and basic education among this population and improving their employability will be a key challenge. About 77,000 new jobs will be created in the unorganized sector. Training the entrepreneurs and craftsmen in this sector to improve their productivity and employability is vital to engaging with the workforce.

Action Plan:

a. Offer courses at ITIs that cater to the needs of the unorganized sector. In the past initiatives to skill the unorganized sector have seen limited interest. Courses must be structured specifically for the organized sector after primary research to understand their skill requirements. Rather than offering specific courses such as welding or fitting, the unorganized sector is more likely to benefit from multi-skilling courses since they are required to perform multiple roles.
b. Informally skilled workers to gain recognition for their skills by taking exams for courses offered at ITIs. This will enable them to transition into the organized sector.

Consolidation of Schemes

Employers express confusion regarding the government's skill programs since there are a number of skill development initiatives undertaken by various departments. The schemes are not consolidated or standardized, which makes it difficult for the industry to leverage them.

Action Plan:

a. All schemes should be coordinated by a single nodal agency.
b. Creation and public launch of a district website detailing all the skill development schemes and programs to provide a single source of information for the industry.
c. To ensure industry collaboration in the skill development process, the state's skill development strategy must be cohesive and clearly articulated through public forums.

Train the Trainers

The acute shortage of trainers is the most significant problem faced by the skill development industry at present. Trainers are not experienced and lack industry exposure, which limits their ability to impart practical knowledge to the students. Initiatives to train the trainers are essential.

Action Plan:

a. Institute train the trainer programs on a PPP mode. Private sector participation is necessary to ensure that the trainers have adequate industry exposure.
b. The training institute should offer short-term refresher courses to all trainers to allow them to update their knowledge and stay abreast of industry developments.
c. The adoption of uniform qualification criteria should be encouraged – all trainers should be required to have the same level of qualification for teaching at a skill training institute.

2.9.2 Industry

Partnerships to Increase Employability

With a large portion of the future unskilled and semi-skilled workforce set to be first time workers, it is important to promote high growth industries and modern working ethics among the population. Through industry bodies, industry should play a greater role in ensuring that skill development is relevant. This can be achieved in the following manner:

a. Participation in curriculum development for ITIs, especially for high growth sectors in the district like automobiles, leather, textiles and electronics that will require increasingly specific skills.
b. Facilitating guest lectures and industry visits at ITIs and other training institutes to ensure that the students' expectations are realistic.
c. Conducting on-campus recruitments at skill training institutes and providing feedback to the institute after placements to suggest areas where the students require greater guidance and training.

Up-skilling Activities

The findings of the youth aspiration study suggest that the employed cohort is interested in skill development that is associated with improved wages and work profiles. For industries in the automobile, logistics and construction sector, where a large skill gap is expected to persist, it is recommended that industries proactively up-skill their employees.

Action Plan:

a. Ensuring relevance of curriculum and minimizing the opportunity cost of skilling requires industry participation in skill development. It is recommended that industries partner with schools and training providers to up-skill existing employees through short-term courses. This will mitigate the need for creating in-house training facilities, which are expensive and often unfeasible for medium and small firms.
b. Firms may provide regular inputs on the curriculum design and evaluation methods adopted at the partner training institutes to ensure that the skills of the graduates correctly align with workforce requirements.
c. Through industry bodies and sector skill councils, norms may be developed for the nature of training equipment to be adopted at skill development institutes.
d. Skill development must be incentivized through active industry participation in campus recruitments at training institutes.
e. Industries may also provide on-the-job training through workshops and seminars for soft skills.
f. Clear induction and training periods for new recruits based on qualifications will help clarify the opportunity cost of formal skill acquisition.

Institutionalization of Wage Escalation

The wage differential between skilled and unskilled employees is one of the most significant factors that could drive the growth of the skill development sector. Higher returns to skill will provide an incentive to invest in acquiring skills and maintaining relevance to the industry.

Action Plan:

a. Through industry bodies and SSCs, each industrial sub-sector must evolve norms for wage escalation linked to the level of skill acquisition.
b. The career progression for unskilled workers with up-skilling or experience must be institutionalized and communicated to the workers. Clarifying the increased earning potential with skill acquisition will incentivize employees to acquire new skills.
c. Large firms may offer earn while you learn programs

2.9.3 Training Providers

Association for Skill Development

An industrial hub such as Chennai must form a trainers' association to provide a platform for interaction with all the skill development institutes in the district. The presence of large industries with a huge need for technical skills in Chennai and the adjacent districts of Kancheepuram and Thiruvallur has led to the growth of a number of unorganized training providers. This capacity may be streamlined to conform to industry requirements by providing a common platform for dialogue between industry and skill training providers.

Action Plan:

a. An industry body may create a division for skill development and encourage training providers to enroll as members of the association through publicity campaigns. This will help create a database of existing training providers and the specific courses offered.

b. Conferences will help evolve a consensus of the stance of the training providers on issues such as content and curriculum, pedagogy, industry involvement and placements. This will help create a forum to engage with private training providers.
c. Industry specific courses may be evolved through collaboration among industries and training providers. Seminars and workshops will facilitate issue identification and resolution through dialogue.

Targeted Courses and Flexible Payment Schemes

A major constraint identified for highly technical courses is the access to educational credit. It is recommended that training providers build partnerships with government and industry to set up flexible payment schemes for technical courses.

Action Plan:

a. Skill training providers may offer flexible modes of payment for courses for the students through fee structures that require payments in installments rather than a lump sum.
b. Performance incentives for trainers are likely to improve the quality of training delivery. Performance may be evaluated by the performance of the students in evaluations and the placement percentage.
c. Courses must be geared towards industry needs by gathering industry perspectives at the end of placement seasons are likely to ensure relevance of the training.
d. Regular alumni interactions will help improve training delivery and provide industry perspectives to the students.

Emphasis on Basic Skills and Portability of Skills

Fluctuations in business climate and change in demand patterns often render workers with highly specialized skills jobless. For the unorganized sector in particular, highly specialized courses are not suitable, since they are required to perform multiple roles. Chennai has one of the largest unorganized sectors in the state.

Action Plan:

a. Multi-skilling courses that provide skills across jobs within a sub-sector should be offered at the semi-skilled level. Fungible skills that can be applied across different sectors should be prioritized, thereby ensuring portability of skills.
b. Training must begin with basic concepts since many of the students reported their inability to grasp new concepts due to poor or inadequate basic education.
c. Training providers are recommended to form partnerships with schools, local bodies and NGOs in order to effectively target students.
d. Student mobilization through direct interactions with the prospective students is likely to be more effective than indirect methods such as advertising, particularly for the lower skill levels.

2.9.4 NSDC

Funding

Criteria

A number of skill training initiatives face problems in student mobilization and placements. This problem can be addressed at the business plan stage by emphasizing on the following factors in funding new initiatives.

a. Fee structures for training initiatives across sectors must be rationalized based on the expected salary on completion of the training programs.
b. Strong industry linkages for all training initiatives must be ensured to create a link between training and employment. Funding may be linked to institute performance in terms of number of students trained and placements achieved.
c. Regular performance assessments of the skill training initiatives should be carried out by external agencies or third parties to ensure conformity to quality standards.

Focus

Manufacturing Sectors

The human resource requirement for manufacturing sectors such as automobile, leather and electronic hardware is estimated to be very high in Chennai as well as the nearby districts of Kancheepuram and Thiruvallur. It is therefore possible to club training initiatives to cater to demand in industries clustered in these districts.

a. The automobile sector faces a major skill gap at the semi-skilled level. Existing training initiatives do not effectively cater to industry demand. Relevance of curriculum must be ensured for this industry through the development of guidelines for course content through SSCs.
b. There is a need for creating training capacities for electronic hardware in highly industrialized zones in the district. Proximity to prospective employers is likely to improve industry linkages. Regular industry exposure will also become more feasible.
c. The leather sector requires targeted up-skilling interventions at the unskilled and semi-skilled level. Training may be provided at the factory for industry endorsement of the courses.
d. Standardized examinations may be developed by third parties to assess the level of skill of workers in various manufacturing roles to help employers assess the capability associated with the level of formal skill acquisition. Such examinations will also provide formal recognition for informally acquired skills.

Service Sectors

a. The construction sector is expected to grow significantly. Youth aspirations at the school level are high, which may lead to limited success of student mobilization efforts at that level. Therefore, training initiatives targeting this sector should focus on up-skilling existing employees or skilling the unorganized sector to enable transition to the formal sector.
b. There is a need for train the trainer programs, particularly for service sectors such as retail and IT. Such training must be imparted by instructors with relevant experience in the industry in question. Soft skill training may be provided at the firm location by such trainers as a part of the induction programs for new recruits.

Role of SSCs

The development of competency standards to describe work outcomes is essential to enable comparison of training quality and the value addition from such training. SSCs should develop sector-specific competency standards in consultation with industry to allow employers to benchmark skills and wages commensurate to each skill level.

a. Define key functions associated with each skill level within a sector for each segment of the value chain.
b. Clarify industry requirements in terms of the activities an employee should be capable of performing at each skill level.
c. Develop performance criteria for each of these activities to aid measurement of performance.

d. Disseminate standards to training providers and industry through the media and industry forums.
e. Formally recognize training providers with evaluation criteria that measure skill along the specified competency standards to enable prospective employers to compare institutes, courses and students.

3 Coimbatore

3.1 Overview

Coimbatore is one of the wealthiest districts in the state and the second largest contributor to the economy. The district is bordered by the Nilgiris in the north, Erode and Tiruppur in the east and the state of Kerala in the west. It is divided into 2 revenue divisions, 6 taluks and 12 blocks. There are 4 corporations, 44 town panchayats, 295 revenue villages and 229 panchayat villages.

Table 3-1: Basic Information (2010-11)

District Information	Coimbatore	Tamil Nadu
Number of inhabited villages	401	15,400
Area (Sq Km)	2,590	1,27,905
% of state area	2.02	100
Area rank	26	-
Revenue divisions	2	
Taluks	6	
Blocks	12	
Corporation & municipalities	4	
Town panchayats	44	
Revenue villages	295	
Panchayat villages	229	

Source: District Statistical Handbook (2010-11)

3.2 Demographic Profile

Coimbatore is one of the most populous districts in the state and constitutes over 4% of the state population. The population is densely distributed at 1,341 people per sq. km., much higher than the state average (564 people per sq.km). The population growth rate is low at 0.81% annually, much lower than the state average (2%), suggesting stable demographic growth. Sex ratio is high at about 1000 females per 1000 males. About 76% of the population lives in urban areas, making this one of the most urbanized districts in the state. Around 64% of the population are of working age, and worker participation rates are also high at 57%.

Table 3-2: Demographic Indicators (2011, 2001)

Population	Coimbatore	Tamil Nadu
Population	3,472,578	72,138,958
Share of state population (in %)	5	100
Population density (per sq. km.)	1340.92	564
Urban population percentage	75.83	48.45
Total population annual growth rate (in %)	0.81	2
Urban population	2,633,170	34,949,729
Sex ratio (number of females per 1000 males)	1001	995

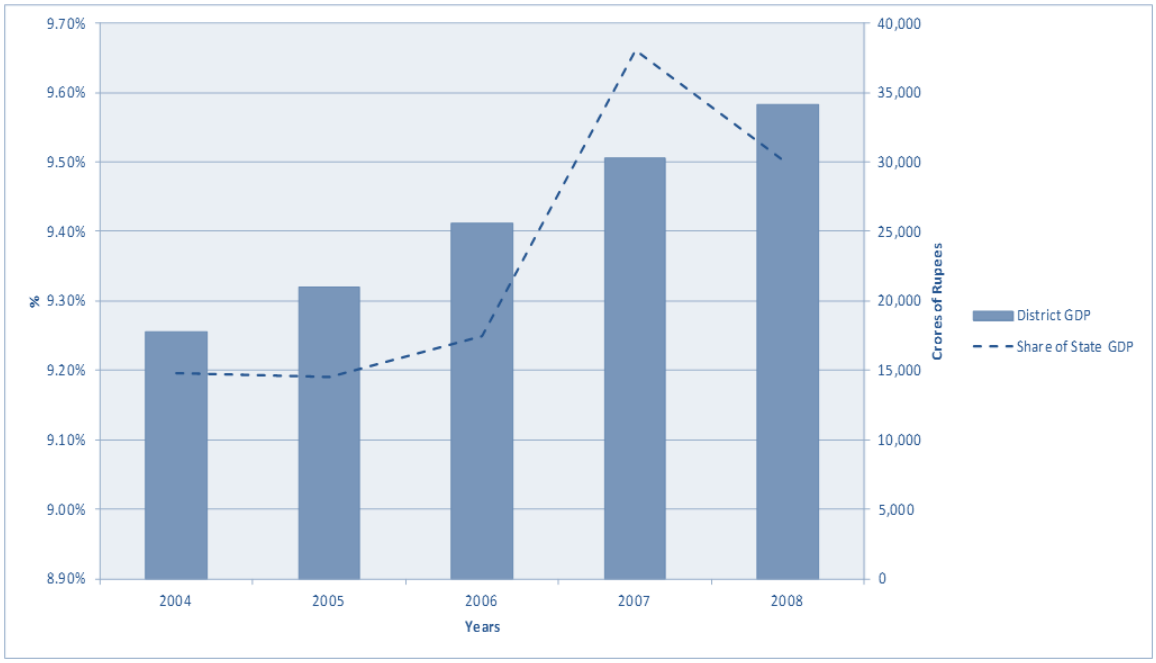
Source: Census 2011 (Provisional)

3.3 Economic Profile

The district is a vital contributor to the state economy, contributing nearly 10% of state GDP, which is second only to Chennai. This share has grown steadily over time with the development of the area. The high level of urbanization and industrialization has lead to the second highest per capita income and standard of living, in the state.

Coimbatore has a high worker participation rate, with a majority of the workers engaged in tertiary sector activities, reflecting high levels of skills and productivity. Only 29% of the working population are engaged in agricultural activities, while only about 4% are engaged in small and medium scale manufacturing activities.

Figure 3.1: District GDP Growth and % Share of State GDP for 2004-2008

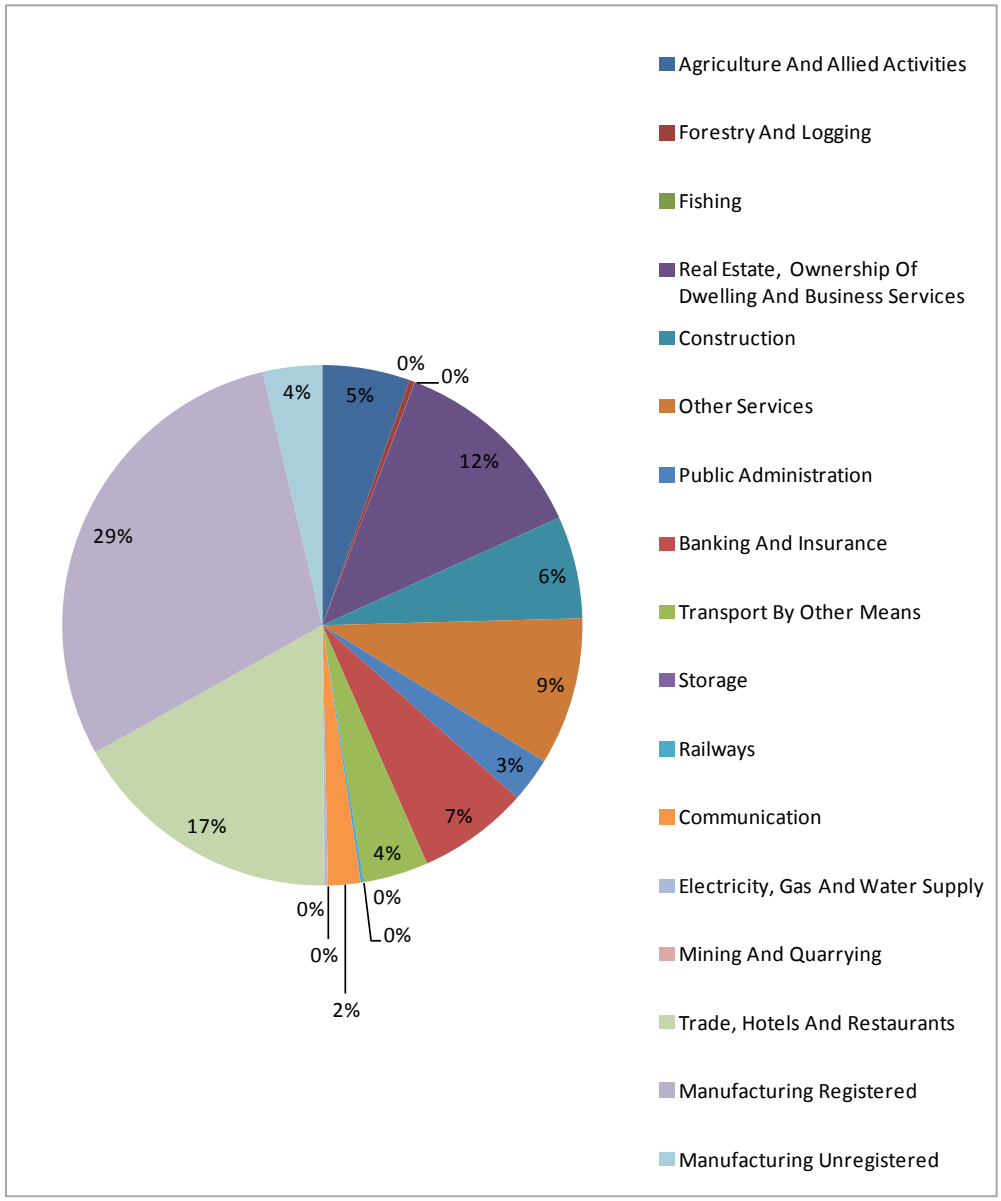


Source: Department of Economics and Statistics (2008-09)

The district GDP has grown at a CAGR of 17% in the period 2004-08, and the share of the district in state GDP has risen from 9.2% to 9.5%. Per capita incomes for both rural and urban population is high and the spread is only about 67% of rural income, which is much lower than the state wide spread of 78%. Human development indicators are significantly higher than the state average at 0.699 and 0.697 for HDI and GDI respectively.

Manufacturing accounts for a significant portion of the district's income, accounting for more than 33%. Unregistered manufacturing accounts for just 12% of the total manufacturing sector. Agriculture has just a 5% share in district income and services occupy the rest, mostly real estate (12%) and trade and hospitality (17%). Communication and transport account for 9% each.

Figure 3.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 3-3: Per Capita Income (2011-12)

Human Development Indicators	Coimbatore	Tamil Nadu
Per capita urban income	112,900	100,600
Per capita rural income	67,700	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

3.3.1 Agriculture

Coimbatore has a high worker participation rate, with a majority of the workers engaged in tertiary sector activities, reflecting high levels of skills and productivity. Only 29% of the working population are engaged in agricultural activities, while only about 4% are engaged in small and medium scale manufacturing activities. The relatively low number of agricultural workers also reflects high levels of productivity in the agricultural sector.

About 56% of the total sown area is under cereals, 15% under pulses and 18% under fruits and vegetables. Non food crops include sugarcane, cotton, oil seeds and tobacco. Nearly 82% of the area under non food crops goes to other non food crops, while oil seeds have the major share at 11% of the remaining area. Yield is higher than the state for cereals, pulses, cotton and oil seeds, while it is lower than the state for sugarcane, condiments, fruits and vegetables.

Table 3-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	80,338	56.31%
Pulses	21,613	15.15%
Condiments	5,810	4.07%
Fruits and vegetables	25,788	18.08%
Other	9,113	6.39%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	5,983	4.59%
Cotton	2,853	2.19%
Oil Seeds	14,514	11.15%
Tobacco	315	0.24%
Other	106,545	81.83%
Total Area under Food Crops	**142,662**	**52.28%**
Total Area under Non Food- Crops	**130,210**	**47.72%**

Source: Tamil Nadu Crop Report (2011-12)

Table 3-5: Major Crops: Yield in KG per Hectare in 2011- 12

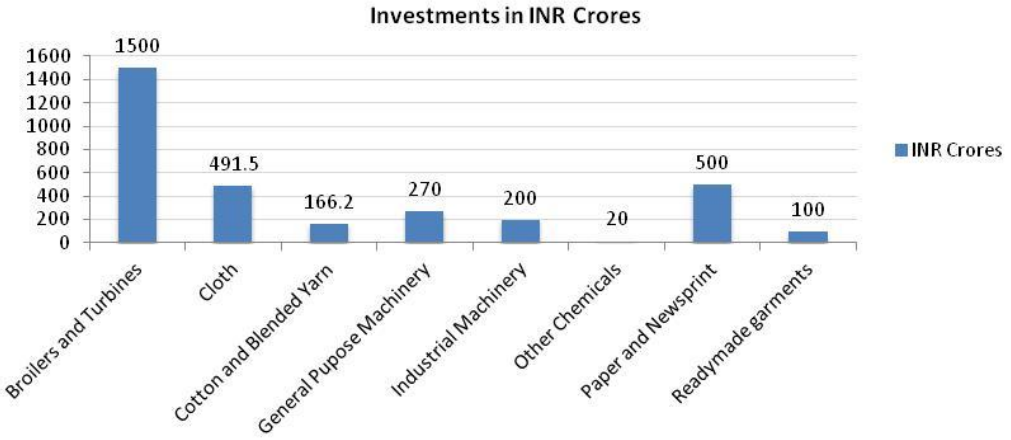
Crop	Yield for Coimbatore	Yield for Tamil Nadu
Cereals	13,727	12,136
Pulses	3,110	2,763
Sugarcane	93	101
Condiments	31,653	32,440
Vegetables	160,411	164,422
Mango	1,710	4,795
Cotton	540	368
Tobacco	1,495	1,524
Oil Seeds	16,522	16,484

Source: Tamil Nadu Crop Report (2011-12)

3.3.2 Industry

The organized industry sector is estimated to employ nearly 1.8 lakh people in the district. Coimbatore city is known as the Manchester of India, because of the presence of a large textile industry, supported by the cotton cultivation in and around the capital city. Over the recent years, the district has also witnessed the growth of machinery and the machinery component manufacturing industry. Currently, machinery component manufacturing is the second largest contributor to the industrial output in the district. The district also hosts the largest hosiery and poultry industry in the nation. There are 66 large scale industries in the district, mainly in the fields of metal fabrication, electronics, auto components and textile units. Major industrial clusters in Coimbatore include hosiery garments, electric motors and pumps, foundries, wet grinders and accessories, power loom, coir industries and gold jewellery. There are 1048 MSME units in the district, the majority of them in textiles and machining. Major investments in the district include air transport infrastructure, boilers and turbines, commercial complexes, textiles, power generation, film distribution, machinery, irrigation, IT/ITES, chemical storage, electronics, paper, rail infrastructure and retail trade. By 2017, IT/ITES investments are expected to cross INR 1,300 crore and retail investments will cross INR 1,700 crore. Investments in hospitality and tourism will cross INR 4,100 crore. Textiles will see investments of INR 5,600 crore. Infrastructure will see investments in excess of INR 7,700 crore while machinery will see investments of INR 1,700 crore over the next few years.

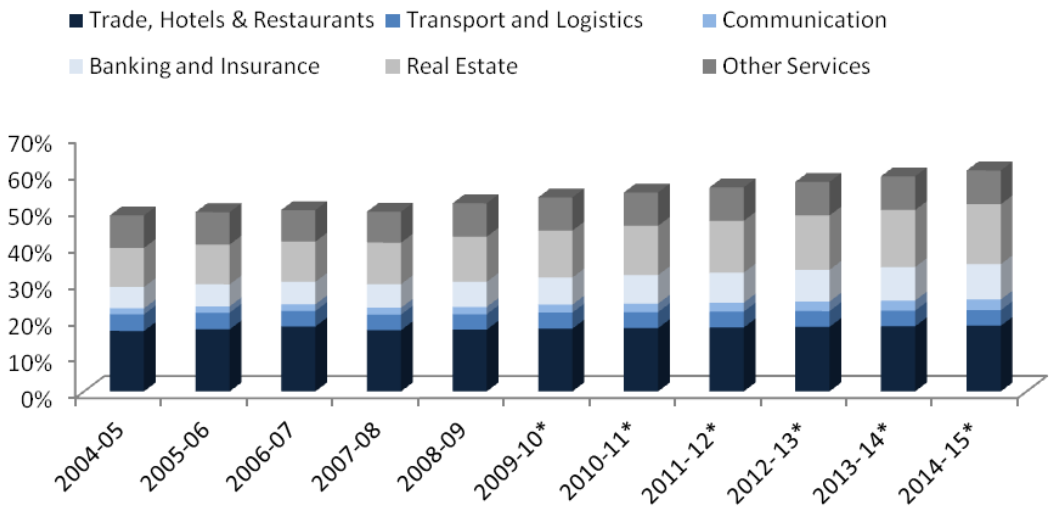
Figure 3.3: Investments in the District



Source: Capex, CMIE (2012)

3.3.3 Services

Figure 3.4: Contribution of Service Sectors to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

As on 2008-09, the service sector contributes to 50% of the district GDP and is expected to rise upto 58% as on 2012-13. Trade, hotels and restaurants remain the largest contributor to district output and contribute to almost 17% of the district GDP as on 2008-09. The real estate sector which contributes to 12% of GDDP as on 2008-09 is expected to see the fastest growth (at a CAGR of 15%) and contribute to almost 16% of GDDP in 2012-13.

Almost 7.23 lakh people are employed in the service sector. Given the number of temples, dams, natural parks and its proximity to the Nilgiris, Coimbatore attracts a substantial number of tourists every year. Following a sharp dip in 2000, tourism figures – domestic and foreign – have been on a rising trend. The relatively large

number of temples has led to the district being labelled a religious hub, which understandably, makes it more popular among the domestic crowd.

Owing to rapid industrial development, Coimbatore is adequately developed with respect to infrastructure services. Health infrastructure in Coimbatore is extremely robust. There are 137 hospitals, with more than 700 secondary health centres, with a bed strength of 2115. There are almost 600 doctors supported by 969 nurses. The road network too, is extremely dense, with over 250 km worth of national highways and 3000 km worth of district level roads. There are 20 railway stations serving a track length of more than 327 km.

3.4 State of Education

Literacy rates in Coimbatore are high and have shown a growing trend. The overall literacy rate is 84%, significantly higher than the state average (80%). In the period 2001-2011, both the male and female literacy rate rose from 84.6% and 69.1% to 89.49% and 79.16% respectively. It is worth noting that the female literacy rate rose more than 10% in this period. The schooling network in Coimbatore is extremely healthy. The district contains 5% of the total number of schools in the state, distributed at a rate of about one school per km, which is significantly better than most other districts.

Table 3-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	69.10	79.16	0.15
Male	84.60	89.49	0.06

Source: Census 2001, Census 2011(Provisional)

Dropout rates are high for both primary and upper primary, though higher for the latter at about 10%. At the same time, NERs are almost close to full utilization. The completion rate for primary is much higher than that for the upper primary, where almost 20% of the enrolled students do not complete their schooling. The high completion rate in the primary is indicative that children of that age are not dropping out to find work or migrating; however, this number significantly goes up in the upper primary. There are a total of 1,658 primary schools, 511 upper primary schools, 316 secondary schools and 359 higher secondary schools.

Table 3-7: Education Profile (2010-11)

Educational Statistics	Units in Coimbatore	Units in Tamil Nadu
Primary	1658	33,909
Upper primary	511	8,552
Secondary	316	4,436
Higher secondary	359	4,632
NER – Primary (%)	98.91	98
NER - Upper primary (%)	98.96	98
Dropout rate- Primary (%)	6	3.81
Dropout Rate - Upper primary (%)	10.41	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 1,59,545, while enrolment in schools that had primary and upper primary classes was 32,725. Enrolment in upper primary schools was 464 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 2,21,976, while enrolment in schools with upper primary and secondary/ higher secondary classes was 1,01,844.

There are 53 engineering colleges and 47 arts and science colleges in the district. There are 2 medical colleges, one dental college, two nursing colleges, one pharmacy college, five other medical colleges and eight polytechnics. The combined capacity of all the ITIs and ITCs in the district is 5,880. The details of the major ITIs in the district are given in the appendix.

Table 3-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	53
Arts and science	47
Management	24
Medical	2
Dental	1
Nursing	8
Pharmacy	9
Other medical	13
Teacher training and education	23
Hospitality	15
Fashion technology	0
Polytechnics	23
Agriculture	4

Source: UGC, AICTE, MHRD Database (2010-11)

3.5 Incremental Human Resource Availability

The work force in 2012 is 14.5 lakh, which is estimated to grow to 18.9 lakh by 2022. The incremental human resource availability is likely to grow significantly over the next decade.

Table 3-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	3,523	2,330	1,486	1,451		
2017	3,943	2,597	1,696	1,659	208	
2022	4,419	2,893	1,933	1,893		234

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level. Primary research indicates a strong preference for formal education, reflected in the high estimated availability of skilled human resources while semi-skilled human resources are expected to grow at a moderate rate.

Table 3-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	108	13	87	208
2017-22	124	14	95	234

Source: Athena Research

3.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in textiles, construction, IT. Agricultural human resource requirement is expected to contract by more than 34,000 by 2022. The unorganized sector will employ an additional 1.39 lakh people by 2017.

The long term growth sectors for Coimbatore appear to be textiles and IT/ITES. The auto component industry is already well established in the district, but the labor intensity is relatively low and the growth prospects reduced by falling demand. The IT/ITES industry will require an enabling environment to grow, and is expected to expand rapidly over a span of several years. Traditional industries like textiles and machining are expected to continue robust growth, though there will be shifts in the nature of products produced as competing districts will erode the cost based competitiveness of these industries, necessitating higher levels of technology and richer variety.

Table 3-11: Incremental Demand by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-15	0	-3	**-18**	-13	0	-2	**-16**
Automobile	4	5	2	**11**	7	9	3	**19**
Chemicals and Pharmaceuticals	1	2	3	**0**	1	2	3	**0**
Electronics Hardware	0	0	1	**1**	0	0	1	**1**
Food Processing	6	1	1	**8**	9	1	2	**12**
Furniture	1	0	0	**1**	1	0	0	**1**
Gems & Jewellery	0	0	0	**1**	1	0	0	**1**
Handlooms & Handicrafts	0	0	0	**0**	0	0	0	**0**
Leather	3	1	1	**6**	5	2	2	**8**
Textiles	21	4	5	**30**	30	6	7	**43**
BFSI	0	2	6	**8**	0	3	9	**12**
Construction	40	8	4	**52**	89	17	8	**113**
Education	0	0	4	**5**	0	0	5	**6**
Healthcare	0	2	3	**6**	0	2	3	**5**
IT and ITES	0	1	16	**17**	0	2	21	**23**
Media & Entertainment	1	2	4	**7**	1	4	7	**12**
Organized Retail	6	1	4	**11**	10	2	7	**19**
Real Estate	0	1	2	**3**	0	1	3	**4**
Tourism & Travel	3	10	9	**21**	4	16	15	**35**
Transportation & Logistics	3	1	0	**4**	3	1	1	**4**
Unorganized (excluding Agriculture and Construction)	63	32	44	**139**	74	48	57	**180**
TOTAL	**139**	**72**	**106**	**312**	**223**	**116**	**151**	**485**

Source: Athena Research

3.7 Skill Gap

The skill gap at the semi skilled level is expected to be 60,000 by 2017 and 1.02 lakh by 2022. At the skilled level, the gap between incremental human resource requirement and availability is estimated to be approximately 19,000 by 2017 and 56,000 by 2022. Strong growth of sectors such as construction and the unorganized sector, which are relatively less skill intensive, is also likely to create a gap at the unskilled level.

Table 3-12: Skill Gap in 000s

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	139	72	106	**312**	223	116	151	**485**
Incremental Human Resource Availability	108	13	87	**208**	124	14	95	**234**
Skill Gap	**31**	**60**	**19**	**104**	**99**	**102**	**56**	**251**

Source: Athena Research

The pattern of skill gap suggests sustained increase in human resource requirements for maturing industries like auto textiles and IT and ITES in 2012-2017. In this period, traditional industries will employ a large number of semi-skilled workers and improve their production processes. This trend will continue in the next period, as employment grows with an expanding industry.

Qualitative Skill Gaps

High attrition prevents assimilation of skills at the Lower Skill Levels- The local populace is not very enterprising and self-employment is not high. Furthermore, industries are forced to train the workers they take in, which poses significant costs to them. There is no assurance that these trained workers will remain employed long enough in these industrial units, which poses additional risks and costs to the companies. These factors prevent the formalization and assimilation of skilled human resources from within the district, especially at the unskilled and semi skilled levels.

Low Employability of Semi Skilled Resources **-** The availability of skilled human resources at the semi skilled level is low. Most of the recruits have to be trained intensively to perform the necessary jobs. Most of the workers who seek employment do not possess even the most basic skills required for shop floor work. Coimbatore has several ITIs and polytechnic institutes. But these institutes are not updated with the latest developments in the industry, nor are they equipped with the requisite infrastructure. As a result, ITI diploma holders are rarely considered industry-ready.

Low emphasis on short term courses- There is also a severe paucity of short term courses (three to six months in duration) that provide basic industrial skills to workers. There is a need for skill training programs that impart tangible skills to the various unskilled and semi-skilled people to enable rural workers to successfully transition to an industrialized, urban lifestyle.

3.8 Youth Aspirations

Table 3-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	IT, ITES, Organized Retail, Auto	Construction, Textiles
	Low	Electronic hardware, Education	Agriculture, Handloom

Source: Athena Research

Mismatch between local demand and youth aspirations

Despite the high level of industrial activity in the district, Coimbatore continues to experience a high level of outward migration of skilled human resources especially at the semi skilled level. Youth aspiration studies show that there is a mismatch between job expectations and the work conditions the youth face. This is typical of a rapidly developing and changing economy like Coimbatore, where new opportunities and increasingly demanding jobs are not well understood by new entrants to the labor pool. Most of the ITI diploma holders perceive their education as a gateway to more dignified, white collar jobs, while those at the skilled level are keen on moving to cities like Chennai and Bangalore .This has created a serious shortage of skilled human resources for industries in Coimbatore.

Some level of agricultural activity is carried out in the interior and rural parts of the district and is moderately productive. Low interest in agriculture and primitive cultivation methods has led to a steady decline in agricultural productivity over the recent years. Most of the people prefer to be employed in white collar jobs because of the prestige associated with them. Even workers from rural areas are no longer interested in being agricultural laborers; and tend to view agrarian activities in a negative light, attributing an inferior status to the primary sector on the whole. These trends create an urgent need for skill training programs that align student expectations with the existing industrial scenario.

Low preference for unorganized sector skilling

The district has a fairly large unorganized sector. However the local ITIs and polytechnics do not cater to the unorganized sector demand, owing to the low preference for such courses among the youth. The lack of appropriate courses targeted towards this sector has led to limited opportunity for up-skilling in this sector. The unavailability of local workers has led to high inward migration. These workers are usually unskilled and come from the northern states of Bihar and Jharkhand.

Lack of career guidance

The youth in the district do not seem to have adequate knowledge on local industry needs and the wage/salary potential associated with the same. This is seen to have led to several students making faulty education choices. The education choices they make should be based on an understanding of industry skill demands, their own aptitude and the availability of employment and to enable this, students should have access to information on the type of jobs, compensation and benefits they can expect given their skill levels.

Poor attitude towards work

The availability of skilled resources at the lower skill levels is very low, owing to the poor attitude of the youth towards lower level skills. Even those who are available have to be trained intensively to perform the necessary jobs as they do not possess even the most basic skills required for shop floor work. When questioned on their poor attitude toward lower level skills, most students were seen to cite the significant opportunity costs of training, as being a primary factor, as post training wages are not sufficient to account for the fees and the lost income. Fear of a lack of career mobility once trained was also seen to be another pertinent reason.

Low propensity to embrace self-employment options

Focus Group discussion with the students displayed that they were averse to options of self-employment, both in the rural as well as the urban districts. The impact of such an attitude is more severe in the case of rural youth, who are mostly engaged in agriculture or other seasonal activities. This creates the need for an attitudinal shift, particularly in the rural areas to improve income levels, especially in the lean seasons.

Preference for Formal Education

There is a high preference for formal education since large industries are the only ones that typically hire off campus. Thus the educational choices of students are driven by the demands of large firms in sectors like IT/ITES and auto and auto components. Sectors like textiles and electronic hardware were also favorably looked upon, while sectors like leather, construction, agriculture and handlooms were least preferred by the youth.

3.9 Recommendations

3.9.1 State Government

Promote greater interaction between formal and vocational education streams

The failure of vocational education courses at various levels to attract a substantial number of students has been attributed to the inability of these courses to provide employable skills, vertical mobility and technical competencies in terms of relevance and quality. Further, due to the changing nature of work and employment, individuals now look for more flexible and multi-skilling learning opportunities for mobility across employment sectors and geographic locations.

In order to ensure this, vertical mobility options must be provided to the vocational graduates through benchmarking of such diplomas with formal education. Primary research indicates that polytechnic diplomas are often seen as a means to gain entry into engineering colleges, indicating that vocational educational qualifications are not used for their intended purpose.

Action Plan

a. Inclusion of basic subjects covered in degree courses in vocational training courses to allow transition from vocational to formal education, should the student desire to make such a change.
b. Providing exposure on vocational education at the 10+2 level through presentations and discussions with school students to position skill training as an alternative to formal education.
c. Set up a vocational university or community resource centres to provide students with opportunities to pursue vocational degrees and advanced skills.

Registration and accreditation of skill training providers

The absence of strong accreditation systems has led to an excess supply of substandard skilling capacity in Coimbatore, particularly at the skilled level. Engineering colleges in the district are struggling to enrol students due to dwindling placement statistics. In terms of vocational education, too, with the exception of ITIs and ITCs, which are registered with the state and are mandated to deliver curricula approved by the centre (NCVT) or the state (SCVT), most skill development institutes remain unregistered and unregulated.

In order to overcome this situation and strengthen skill development in the state an accreditation system is proposed to serve as a quality assurance measure and as a useful management/regulatory tool for continuous improvement.

Action Plan:

a. Undertake a detailed survey and develop a database of training providers
b. Evaluate the performance of the Vocational Education Training (VET) institutions under the accreditation criteria espoused at the state level. The criteria may be based on Accreditation Standard for Quality of Governance of Vocational Training Institutions developed by the Quality Council of India
c. Identify a list of institutions in the district that do not meet the criteria and provide them with a moratorium period to comply with the regulatory and performance criteria defined
d. Create an online database, with the list of accredited skill institutes along with details on specific parameters such as enrolment, drop out and placement rates, among others

3.9.2 Industry

Information on Labour Needs

The lack of adequate information on industry requirements is one of the factors perpetrating the mismatch between the requirement and availability of skills, particularly for growing manufacturing industries such as automobile and textiles. The youth in the district do not seem to have clarity on the skill requirements of these industries, leading to misinformed educational choices.

Action Plan:

a. Co-ordinate with employment exchanges/ local district councils and publish the data on the employment requirements in the industry, along with a clear description of the job requirements and the necessary qualifications
b. Promote the creation of a database which matches information on skill levels to compensation and presents a list of potential employers in the state for a certain skill type – this may be taken by industry associations in the state
c. Participate in campus recruitments at vocational training institutes in the vicinity to establish a strong connection between employment and skill acquisition
d. Undertake frequent interaction with students at vocational education institutes through projects, lectures or visits

Increase desirability of jobs in manufacturing sectors through improved work environment

The poor working conditions prevalent in most industries employing vocational labour is among the key factors contributing to a low preference for vocational education among the district youth. The poor working conditions

appear to lower the self-esteem of people employed and lower employee morale. The poor level of health and safety standards in firms is another key concern.

Action Plan:

a. Efforts are to be made by industry leaders to improve the working conditions to suit the ILO conventions on safety, health and welfare to meet the needs, aspirations and requirements of employees – Industry Associations can play a crucial role here to create awareness on the need for improvements in work conditions
b. The motivational aspect of working conditions must also be emphasized through specific initiatives such as an employee feedback mechanism, which may provide employees with a forum to present their concerns
c. Introduce training and induction period for workers at all skill levels
d. Various educational and training programmes for building awareness of rights, duties and liabilities amongst the workers in relation to working condition regulations must be made

3.9.3 Training Providers

Upgrade and standardize curriculum

The skill development sector continues to remain largely unregulated, with a large number of private training providers. This provides institutes with some degree of flexibility in setting the curriculum. While this flexibility should in principle enable the introduction of innovative modules of contemporary relevance, primary interviews with students and industry reveal the presence of large gaps between requirement and availability of relevant courses and modules. Therefore, there is an urgent need to create awareness among training providers to upgrade their curriculum and align themselves with the prescribed national occupational standards, particularly for sectors such as IT/ITES where the high variability in training infrastructure has led to graduates assuming employment in sectors that are disconnected from their training.

Action Plan:

a. Map the relevance of the existing curriculum to local and national demand, through industry surveys
b. Identify gaps and upgrade the content and pedagogy as per the norms prescribed by the Sector Skill Councils (SSCs). In the short run, until the National Occupational Standards are fully developed, curricula may be upgraded by procuring licenses from reputed international players such as TAFE or ITE
c. Evaluation based on competency levels in performing specific tasks with greater emphasis on practical learning
d. Incorporate a review of basic concepts in curriculum

Introduction of a dual apprenticeship model

Apprenticeship is designed to help students acquire the much required practical experience and remains the key channel of connecting them with industry. In the district, apprenticeship has remained a nominal feature, with the students acquiring little or practical knowledge on completion of the course, rather than during the course. Furthermore, students who are employed as apprentices by the industry are rarely absorbed into the firm as full time employees, owing to the lack of practical experience built into their course curriculum and the high costs

associated with training them on the job. Thus there is an urgent need to strengthen the practical component of training by introducing a dual apprenticeship model, wherein the student is expected to acquire industry experience both during the course and after completion.

a. Introduce a two month internship with local industries, embedded as a part of the course curriculum
b. Enter into an MOU with other local ITIs to ensure a continuous supply of trainees to industries
c. Create a student tracking system to maintain records of the status of apprentices employed from the institute

3.9.4 NSDC

Standardization of Quality

Coimbatore faces an overwhelming qualitative shortage rather than a quantitative one. Primary research suggests that existing private skilling capacity is underutilized; pointing to the need for standardization rather and a strong focus on quality in the creation of additional capacity.

Action Plan:

a. Through the SSCs, register all skill training providers at the district level, collating basic information on the number and type of courses offered
b. Develop an assessment system for all training partners on a set of holistic parameters such as quality of instructors, enrolment and drop out number and placement rates
c. Set capacity utilization and placement norms based on industry growth. For example, training initiatives in high growth sectors such as textiles, automobile, retail and IT may have higher placement targets
d. Publish all information regarding the performance of all private skill training providers collated by the SSCs on the Tamil Nadu Skill Development Mission website

Encourage multi-skilling courses to provide fungible skills

With the rise in the number industrial units in and around the district and fluctuations in industrial growth, particularly in the textile industry, the requirement for multi-skilled workers has increased significantly. Industries display a preference for candidates with more rounded skill sets. Therefore, training initiatives should focus on imparting multiple, fungible skills.

Action Plan:

a. Encourage multi-skilling modules within broad industry divisions and make them available for training centres who fulfil a set of pre-determined infrastructure criteria
b. Undertake campaigns among prospective students to make them aware about the benefits of acquiring multi-skills
c. Focus on up-skilling existing workers in manufacturing industries such as automobile and textile
d. Provide financial support either in the form of vouchers to those who are already employed, but inclined on acquiring multiple skills, particularly in the unorganized sector

4 Cuddalore

4.1 Overview

Cuddalore was formed in 1801, making it one of the oldest districts in Tamil Nadu. Cuddalore lies on the eastern coast of Tamil Nadu and is bordered by Villupuram in the north, Perambalur and Ariyalur in the west, Nagapattinam in the south and the Bay of Bengal in the east. The district is divided into three revenue divisions, 7 taluks and 13 blocks. There are 5 corporations, 16 town panchayats, 901 revenue villages and 682 panchayat villages.

Table 4-1: Basic Information (2010-11)

District Information	Cuddalore	Tamil Nadu
Number of inhabited villages	807	15,400
Area (Sq Km)	3,779	127,905
% of state area	2.95	100
Area rank	18	-
Revenue divisions	3	-
Taluks	7	-
Blocks	13	-
Corporation & municipalities	5	-
Town panchayats	16	-
Revenue villages	901	-
Panchayat villages	682	-

Source: District Statistical Handbook (2010-11)

4.2 Demographic Profile

The district is quite populous, constituting about 4% of the state population. Population density is high at about 688 people per sq. km., which is significantly above the state average. The growth rate of population is low at 0.81 % annually, which suggests a stable population scenario. The sex ratio is below state levels at 980 females per 1000 males. The majority of the population lives in rural areas, while the urban population accounts for only about 34% of the total population. About 46% of the workforce is engaged in agricultural and allied activities. More than 61% of the population is in the working class age group, but worker participation rates are low at only about 37%.

Table 4-2: Demographic Indicators (2011)

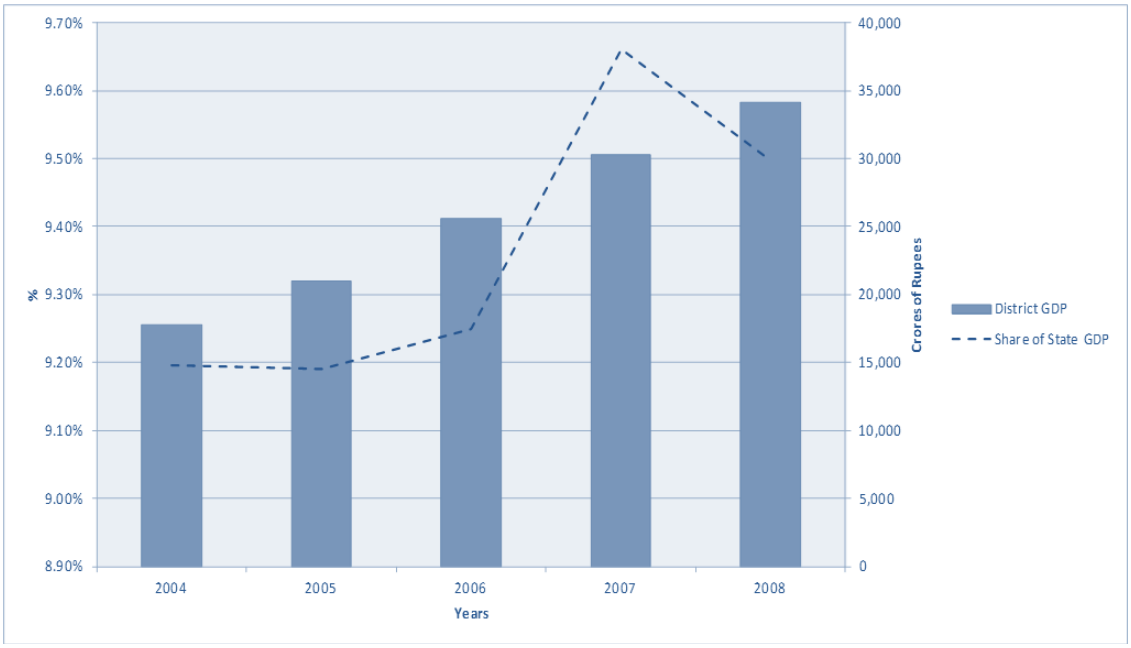
Population	Cuddalore	Tamil Nadu
Population	2,600,880	72,138,958
Share of state population (in %)	4	100
Population density (per sq. km.)	688.34	564
Urban population percentage	33.94	48.45
Total population annual growth rate (in %)	0.81	2
Urban population	882,631	34,949,729
Sex ratio (number of females per 1000 males)	984	995

Source: Census 2011 (Provisional)

4.3 Economic Profile

The contribution of the district to state GDP has varied between a high of 3.3% and a low of 3.05%. The contribution has moderated in recent years and is steady at about 3.15% in 2008-09. Per capita incomes are low relative to the state, and urban rural disparity is wide. The district does moderately well on human development indicators like HDI and GDI, with scores of 0.64 for both, but still trails the state average.

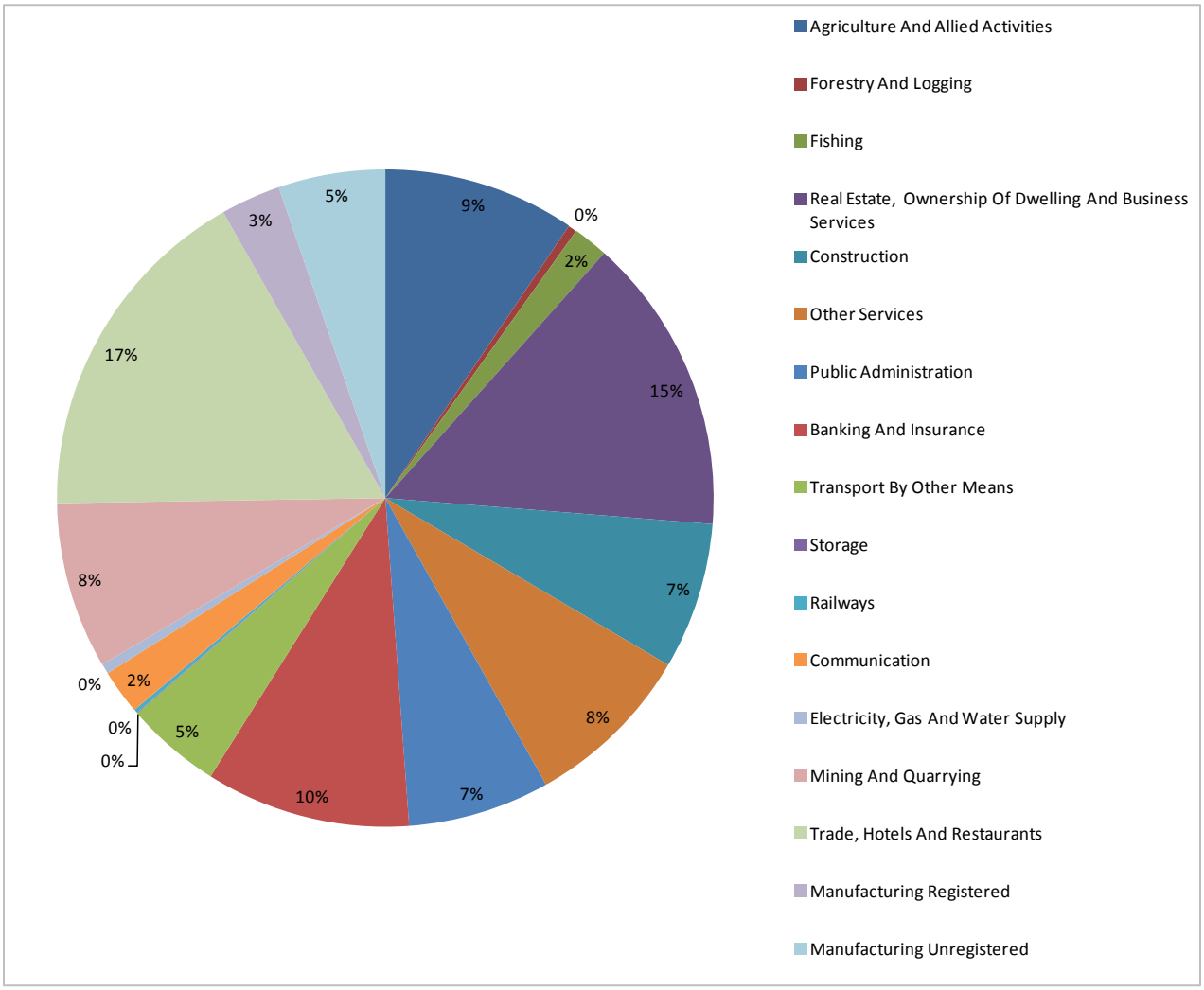
Figure 4.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Trade, hotels and restaurants accounted for 17% of the district GDP, followed by real estate services at 15%. Agriculture accounts for 9% while fishing activities accounts for another 2%. Manufacturing accounts for just 8%, of which the majority is unregistered manufacturing. Other dominant sectors include banking and financial services, communication and railways.

Figure 4.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 4-3: Per Capita Income (2011-12)

Human Development Indicators	Cuddalore	Tamil Nadu
Per capita urban income	67,500	100,600
Per capita rural income	28,500	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

4.3.1 Agriculture

At 42.58%, the proportion of total working population is low in Cuddalore. The district is also primarily agrarian, with almost 65% of the working population engaged in agricultural activities. About 46% of the workers engaged in agriculture are wage laborers, without any claim on the land they till. This might explain the relatively low per capita rural incomes observed in the district.

About 87% of the total sown area is under food crops. Nearly 51% of this sown area is under cereals, 16% under pulses and 17% under fruits and vegetables. Non food crops include sugarcane, cotton, oil seeds and tobacco.

About 13% of the total sown area is under non-food crops. Almost 100% of this area goes to sugarcane while oil seeds have a share of 0.05% of the remaining sown area. Yield is higher than the state for sugarcane and oilseeds, while it is lower than the state for all other major crop groups.

Table 4-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	124,616	51.21%
Pulses	40,599	16.68%
Condiments	1,386	0.57%
Fruits and vegetables	41,752	17.16%
Other	35,009	14.39%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	34,952	97.27%
Cotton	2,968	8.26%
Oil Seeds	19,103	53.16%
Tobacco	4	0.01%
Other	-21,095	-58.71%
Total Area under Food Crops	**243,362**	**87.13%**
Total Area under Non Food- Crops	**35,932**	**12.87%**

Source: Tamil Nadu Crop Report (2011-12)

Table 4-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield for Cuddalore	Yield for Tamil Nadu
Cereals	11,243	12,136
Pulses	2,450	2,763
Sugarcane	108	101
Condiments	13,785	32,440
Vegetables	144,944	164,422
Mango	4,795	4,795
Cotton	192	368
Tobacco	1,399	1,524
Oil Seeds	18,701	16,484

Source: Tamil Nadu Crop Report (2011-12)

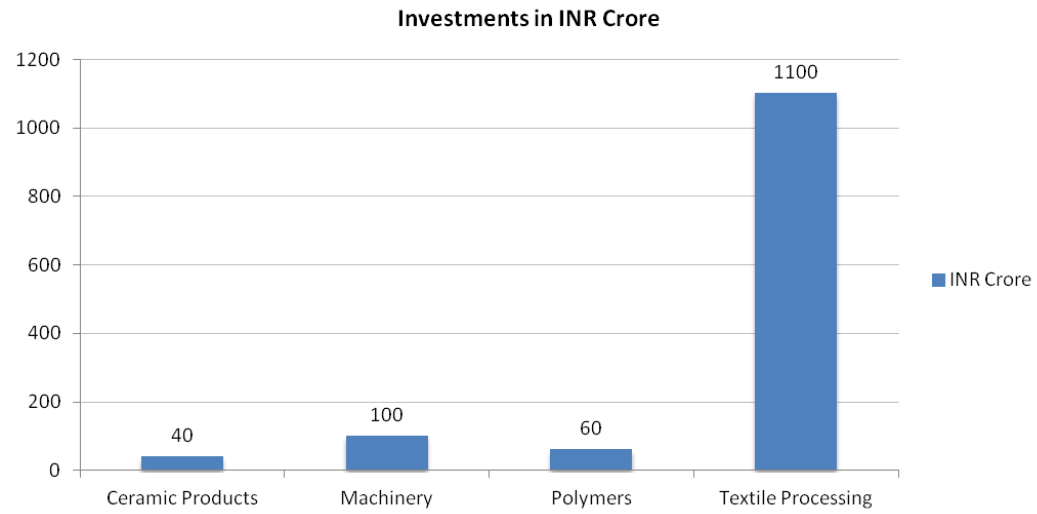
4.3.2 Industry

The industry sector employs 1.39 people in the district. High sugarcane yield has led to the development of multiple sugar mills in the district. There are three large scale sugar companies operating in Cuddalore. In addition, there are also six large scale chemicals and dyeing companies in the district. Overall, there are 35 large scale units, 731 medium and small scale units and 200 cottage industries operational in the district. These units generate sizeable employment opportunities and revenues in the district.

There are significant mining operations carried out by the government owned Neyveli Lignite Corporation in the district. The three operational mining units have a production capacity of 280 lakh tons of lignite per annum, fuelling two thermal power units with a combined capacity of 1020 MW.

The availability of agricultural raw material, ample land resources, sufficient thermal powered electricity generation and good transport infrastructural facilities has led to the development of the industrial sector in the district. These factors conducive to growth have also attracted investments for various industrial sub sectors. Capex data indicates that four sub sectors of ceramic products, machinery, polymers and textile processing have investments over INR 30 crore each, lined up in the short to medium term. This could create more economic opportunities for the district's inhabitants, thereby enabling the district to overcome its developmental barriers in the future.

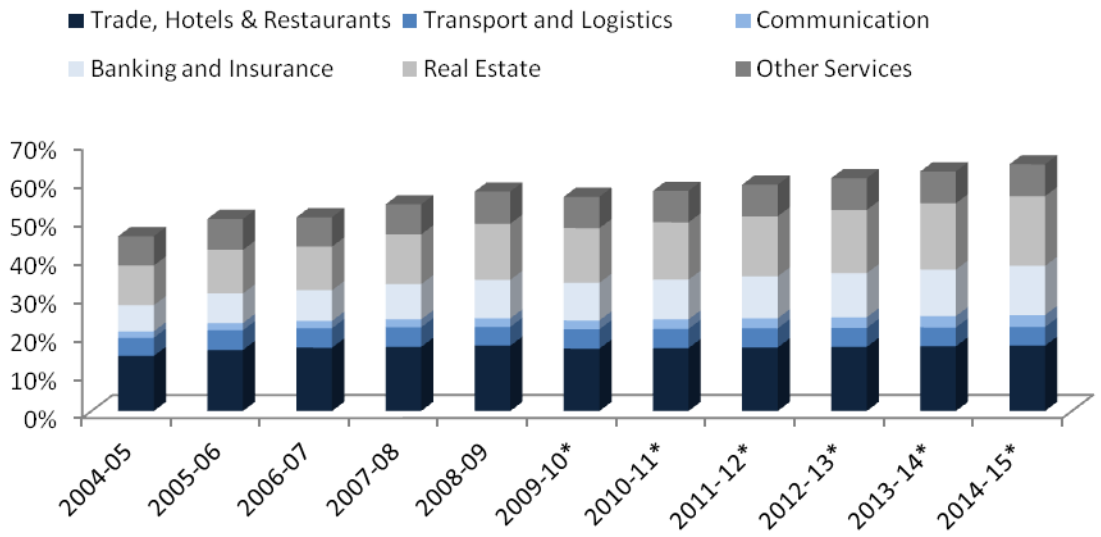
Figure 4.3: Investments in Cuddalore (2012)



Source: Capex, CMIE (2012)

4.3.3 Services

Figure 4.4: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

At an average CAGR of 14%, the service sector has witnessed buoyant growth in the district and is expected to contribute to almost 60% of the district GDP in 2012-13. At a CAGR of 19%, the banking and insurance sector is the fastest growing sector and is expected to contribute to 13% of GDDP in 2012-13. Despite a lower growth rate, real estate and trade, hotels and restaurants jointly contribute to one third of the district GDP and remain the largest contributors to output.

The services sector employs over 4.11 lakh people in the district. Located along the coastline of Tamil Nadu, Cuddalore attracts tourists throughout the year. The district is famed for its beaches and temples. Two places in particular – Chidambaram and Pichavaram are tourist hotspots, attracting a steady stream of domestic and foreign tourists. The presence of temples with significant heritage makes Chidambaram more appealing for the domestic tourists, while the development of eco tourism at Pichavaram over the past decade has made it more attractive to the foreign tourists. The tourism growth rates depict an increasing trend for tourist arrivals until 2004. Following the Southeast Asian tsunami in 2004, the district witnessed a sharp fall in both domestic and foreign tourism. However, tourist activity seems to have picked up, if not more sharply than before, by mid 2005.

Increasing tourist and industrial activity has also been complemented by the development of transport infrastructure in the district. There are 1854.762 kms worth of state highways and 1228.554 kms of other panchayat and municipal roads enhancing both intra district and inter district connectivity. The railway routes too are substantial, with 115 kms of route length and 27 railway stations connecting various points within the district. Health care services, however, haven't developed at the same pace – although there are 18 hospitals and 382 health care centres, the population per doctor is 11,308, far lower than most of the other districts in the state, reflecting the need for healthcare development in the district.

4.4 State of Education

The literacy rate is quite high for a district with Cuddalore's characteristics, at 79%, which is a little below the state average of 80%, but much higher than comparable districts. Both male and female literacy rose in the period 2001-2011 from 60.3% and 81.6% to 71.2% and 86.84% respectively. The rise in female literacy has been over 10%.

Table 4-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	60.30	71.20	0.18
Male	81.60	86.84	0.06

Source: Census 2001, Census 2011(Provisional)

There are 1,226 primary schools, 365 upper primary schools, 149 secondary and 158 higher secondary schools in the district. Net enrollment ratios are high for the primary level, at nearly 100%, but drop off to 97% for the upper primary level. Dropout rates are low at the primary level at 1.8% but high at the upper primary level at 7.6%. According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 1,24,302, while enrolment in schools that had primary and upper primary classes was 95,286. Enrolment in upper primary schools was 166 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 63,270, while enrolment in schools with upper primary and secondary/ higher secondary classes was 69,719.

Table 4-7: Education Profile (2010-11)

Educational Statistics	Units in Cuddalore	Units in Tamil Nadu
Primary	1226	33,909
Upper primary	365	8,552
Secondary	149	4,436
Higher secondary	158	4,632
NER – Primary (%)	99.19	98
NER - Upper primary (%)	97.9	98
Dropout rate- Primary (%)	1.88	3.81
Dropout Rate - Upper primary (%)	7.64	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

There are eight engineering colleges and eight arts and science colleges in the district. There is also a dental college and a pharmacy college. There are 12 teacher training colleges and 12 polytechnics. The combined capacity of all the ITIs and ITCs in the district is 7,413. The details of the major ITIs in the district are given in the appendix.

Table 4-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	8
Arts and science	8
Management	0
Medical	0
Dental	1
Nursing	0
Pharmacy	1
Other medical	0
Teacher training and education	12
Hospitality	1
Fashion technology	0
Polytechnics	12
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

4.5 Incremental Human Resource Availability

The current work force is estimated to be 10.83 lakh, which is likely to grow to 13.16 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 1.11 lakh and in 2017-22, the incremental availability is estimated to be 1.23 lakh.

Table 4-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	2,628	1,738	1,109	1,083		
2017	2,854	1,879	1,220	1,193	111	
2022	3,107	2,032	1,345	1,316		123

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level, matching the overall pattern of skill distribution across the state.

Table 4-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	75	8	27	111
2017-22	84	8	30	123

Source: Athena Research

4.6 Incremental Human Resource Requirement

The development of the TNPCPIR (Tamil Nadu Petroleum, Chemical and Petrochemical Investment Region) along the coast of Cuddalore is expected to create a large human resource requirement in the chemicals & pharmaceuticals industry. Incremental human resource requirement will be highest in chemicals, construction and tourism and travel. Agricultural employment will contract by more than 88,000 jobs. The unorganized sector will employ an additional 30,000 people by 2022. The highest growth sectors will be electronics hardware, textiles, gems and jewellery and IT/ITES.

The long term growth sectors for Cuddalore appear to be textiles, food processing, tourism and travel, and transportation and logistics. The hospitality industry is already well established in the district and is expected to grow rapidly. IT/ITES and electronics hardware industries will require an enabling environment to grow, and are expected to expand rapidly over a span of several years. Traditional industries like food processing and textiles are expected to continue robust growth, though there will be shifts in the nature of products produced as competing districts will erode the cost based competitiveness of these industries, necessitating higher levels of technology and richer products.

Table 4-11: Incremental Demand by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-62	-1	-11	**-75**	-54	-1	-10	**-65**
Automobile	0	0	0	**0**	0	0	0	**0**
Chemicals and Pharmaceuticals	1	2	3	**157**	1	2	3	**150**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	1	0	0	**1**	1	0	0	**2**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**0**	0	0	0	**0**
Handlooms & Handicrafts	-1	0	0	**-1**	-1	0	0	**-1**
Leather	0	0	0	**0**	0	0	0	**1**
Textiles	1	0	0	**2**	2	0	0	**3**
BFSI	0	2	4	**6**	0	2	6	**9**
Construction	18	4	2	**24**	41	8	4	**52**
Education	0	0	1	**1**	0	0	1	**1**
Healthcare	0	1	2	**3**	0	1	2	**3**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	0	1	1	**2**	0	1	3	**4**
Organized Retail	3	1	2	**5**	5	1	4	**10**
Real Estate	0	0	1	**2**	0	0	2	**3**
Tourism & Travel	2	6	5	**13**	3	10	9	**21**
Transportation & Logistics	1	0	0	**2**	2	0	0	**2**
Unorganized (excluding Agriculture and Construction)	47	24	33	**104**	56	36	43	**135**
TOTAL	**14**	**39**	**44**	**248**	**57**	**62**	**67**	**330**

Source: Athena Research

4.7 Skill Gap

The skill gap at the semi skilled level is expected to be 30,000 by 2017 and 53,000 by 2022. At the skilled level, the gap between incremental human resource requirement and availability is estimated to be approximately 17,000 by 2017 and 37,000 by 2022. Strong growth of sectors such as chemicals, construction and tourism will drive the skilled human resource requirement, while the fall in human resource requirement in agriculture and handlooms will lead to an excess availability of unskilled human resources.

Table 4-12: Skill Gap in 000s

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	14	39	44	**248**	57	62	67	**330**
Incremental Human Resource Availability	75	8	27	**111**	84	8	30	**123**
Skill Gap	**-61**	**30**	**17**	**137**	**-27**	**53**	**37**	**207**

Note: Figures in negative indicate excess human resource availability
Source: Athena Research

The pattern of skill gap suggests sustained increase in the requirement for semi- skilled and skilled human resources with the growth of traditional sectors such as food processing. In this period, traditional industries will employ a large number of semi-skilled workers and improve their production processes. This trend will continue in the next period, as employment grows with an expanding industry.

Qualitative Skill Gaps:

Inadequate emphasis on training people in local vocations

90% of the agricultural land in the district is very fertile. Cashew nuts and jackfruit are the major crops produced in Cuddalore. Availability of highly fertile land has led to high yields. There are also several agro processing, food based units, which have greatly aided agricultural laborers by serving as fixed, assured customers for their agricultural produce. The income levels of agricultural laborers are, therefore, higher than those of agricultural workers in other districts. However the local ITIs and polytechnics do not seem to focus on skilling people to cater to the local vocational demands.

Low access to skill trainers at the lower skill levels

Some major industrial projects are expected in the district soon, which will provide an impetus to economic growth and generate substantial employment opportunities. However today there are not enough skill training institutes that cater to the rising local demand.

Poor compensation for skills

Surveys revealed that there is nearly no difference between the wages of unskilled human resources and people who have completed a course at an ITI, thereby creating a disincentive for skill acquisition in the district

4.8 Youth Aspirations

Table 4-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	Tourism & Travel, Organized Retail	Chemicals, Construction
	Low	IT/ITES, Electronic hardware	Agriculture, Gems & Jewelry

Source: Athena Research

Poor basic education prevents absorption of vocational training

It is only over the last five years that people belonging to the younger generation have begun pursuing education beyond the 12th grade. Thus while the overall education levels in the district have improved, owing to the poor quality of basic education, students expressed difficulties in absorbing the curriculum delivered in the vocational institutes

Low awareness on education and employment opportunities

Information dissemination is inadequate in the district and awareness of different education and employment opportunities was seen to vary greatly between different parts of the district. This was seen to prevent students from making rational education and employment decisions based on their own aptitude and market opportunities.

Poor vertical mobility options

The current formal education system provides limited options for vocational training, while vocational training systems have limited options involving mathematics and language learning. This lack of options makes it very difficult for a student enrolled in the formal education system to acquire skills that are relevant to the industry and leaves a person enrolled in vocational training with limited soft skills. This was one of the most pertinent factors preventing the youth from enrolling into vocations trades as almost all the youth interviewed dipslyed their desire for more than a semi-professional education.

Rising mismatch between aspirations and local demand

Employment in the primary sector is very high. Cuddalore is a primarily agrarian district, with agriculture accounting for a large proportion of total employment. Since the district is located along the coastline, there are a large number of people employed as fishermen. However, the youth in the district prefer to be employed in industries, as opposed to agriculture and fishing. This is a relatively recent trend.

Strong industry linkages and placement records have created an interest in skill development among prospective students. However, engineering continues to be the most popular course and fewer people want to enrol in courses for lower level skills as the youth do not view traditional sectors like agriculture and handlooms favorably and do not wish to work in the unorganized sector. The focus Group discussion revealed that the youth in the district tend to view high technology industrial sectors like IT/ITES most favorably. They also seem to prefer sectors like tourism and travel. However, sectors like gems and jewellery, and leather are viewed unfavorably.

Further attitude towards work is one of the major challenges faced by the industry. New recruits are seen to lack patience and perseverance, thereby stretching the skill acquisition process and making attrition difficult to manage.

4.9 Recommendations

4.9.1 State Government

Improve quality and access to basic education

The development of educational facilities is low in the district and is severely constrained by the low availability of infrastructure. The lack of access to good basic education makes skill training very challenging since the students are not familiar with basic concepts and are often unable to absorb the skill training imparted to them. Most of the students choose to drop out of school by the sixth or eighth grade, which further acts a restraint on any developmental activities proposed. This calls for increased emphasis on improving the quality of basic education and to improve retention of students in school at least till the 10th grade and to ensure strong fundamentals, particularly in backward blocks.

Action Plan

a. Expand and rehabilitate basic educational infrastructure in backward regions to improve access
b. Build strong teacher training institutions, with a greater focus on the improvement of pedagogical methods and provide continuous training for contractual teachers
c. Use campaigns to improve community awareness and involvement to ensure the sustainability, maintenance and good management of the school and ensure that children stay in school at least till the 10^{th} grade

Focus on Women

Female literacy rates in the district stand at 71 %, which is lower than that of males (86.8%), necessitating gender specific polices. The Access to skill training continues to remain a challenge in the district, especially among women and the rural youth. The need to travel long distances is a key disincentive. Further, awareness on the benefits of skill development coupled by the absence of adequate hostel and accommodation facilities at institutes are seen to have an adverse impact on student enrolment and retention at ITIs.

Self Help Group models have demonstrated successful results in a number of backward districts. Local level information channels and networks to disseminate information regarding skill development need to be leveraged. Training for small industries and the unorganized sector may be more viable under such a model.

Action Plan:

a. Promote the idea of mobile classrooms
    - Recruit and train instructors to go to remote areas in the district and train students in select trades of local relevance or popular skill such as brickwork and painting to improve their chances of employment
    - Provide the instructors with the required inventory and infrastructure such a as a large van containing all the tools, equipment and materials needed
b. Provide hostel and other accommodation facilities at the vocational centres to improve enrolment and retention
c. Undertake skill awareness campaigns and conduct outreach programs in backward areas through SHGs

4.9.2 Industry

Cluster Approach

The low wage rates coupled with the high cost of living in the state has remained a key barrier to intrastate migration. Youth graduating from vocational institutes prefer to remain in their home district and often enter the informal sector or remain employed/ underemployed owing to the high costs associated with migrating to other districts.

High growth sectors like chemicals, food processing and construction are well suited to the cluster mode of development. It is recommended that industry help develop these clusters by partnering with training providers or individually providing on site captive training schools, with easy access to the cluster.

Action Plan:

a. Create captive training facilities in close proximity to the industrial areas
b. Create accommodation facilities to incentivize students from far-off blocks to enrol in such courses
c. Create a system of reimbursements for existing employees who choose to get up-skilled, where the expenditure incurred on tuition and accommodation by the migrant employee is reimbursed on actuals

Protect the health and safety of employees

The variable and insecure nature of the work for semi-skilled and unskilled workers means that more and more workers are pushed into taking up hazardous and precarious employment both in the informal economy as well as informal work in the formal sector. Thus there is very little awareness about workplace hazards due to lack of access to information, or even any kind of formal education. The expected growth of industries such as chemical and construction, where workers are exposed to a number of occupational risks, must be accompanied by compliance to health and safety norms to attract workers.

Action Plan:

a. Industry must initiate efforts to provide and maintain plant and machinery that is safe
b. Ensure that work is performed under the supervision of an individual trained in safety issues and trained to take precautionary measures
c. Workers must be trained in work place safety to minimize the number of accidents
d. Simple manuals and notices on preventing and responding to accidents must be created

4.9.3 Training Providers

Improve the quality of instructors

Instructors are the fulcrum of a training institute and are the most critical input into the performance of the institute. Primary surveys in the district reveal that most training institutes suffer from the lack of good quality instructors. In the absence of good instructors to deliver the training, the overall student morale is observed to be low.

Action Plan:

a. Induct teachers into the new curriculum and conduct a set of orientation courses to equip the teachers to deliver the new curriculum
b. Raise compensation for trainers to attract quality trainers and restructure the pay scales with a larger variable component linked to performance
c. Undertake training sessions in-house to up-skill instructors on courses.

Flexible and Targeted Courses

Basic education is found to be lacking in imparting basic concepts required for vocational training. The absence of strong industry orientation and socio-economic constraints to skilling of women were also found to be reasons for low participation in skill training programs.

A large proportion of the labor force in sectors such as construction and food processing chooses to acquire skills informally. In order to bridge the qualitative mismatch in skills, supplementary training programs may be instituted.

Action Plan:

a. Help students overcome the gap in basic educational infrastructure by including introductory modules on basic numeracy and soft skills targeted towards the lower skill levels.
b. Create awareness at the school level and encourage greater enrolment of the unskilled in vocational education.
c. Short-term courses could be offered in service sectors such hospitality as they are preferred by the youth due to the low opportunity cost in terms of wages.
d. The courses should also focus on women and provide flexible timings to help them overcome socioeconomic constraints to skilling.

4.9.4 NSDC

Encourage earn while you learn programmes

Given the high levels of disguised unemployment in the district in agriculture and agro-based industries, there is a clear case for up skilling. However, a large proportion of the population is observed to be economically backward and often tends to drop out of the formal educational system owing to economic compulsions. Thus there is a need in the district to up-skill the work force through the encouragement of earn-while-you-learn programs.

Action Plan:

a. Group the people engaged as labour into groups based on location and provide select skill trainers in the district with the required inventory to implement the 'mobile-classroom' concept to go to reach the workers
b. Provide stipends to those interested in acquiring certifications in skill on a part time basis by using the existing vocational infrastructure
c. Encourage skill trainers to introduce modular employability trades of relevance to local demand with flexible timings, particularly at the semi-skilled level for the chemicals and construction sectors.

Capacity Creation

The district has a relatively low level of skilling infrastructure and the existing infrastructure does not meet the industry requirements.

Action Plan:

a. The high growth sectors for the district are chemicals, construction and tourism, travel and hospitality. Some growth in support sectors such as transportation and logistics may also be expected on account of

the setting up of PCPIR. There is expected to be a high requirement for semi-skilled human resources in these sectors.

b. It is recommended that training facilities be located close to the place of employment and students be incentivized to join through awareness campaigns, provision of accommodation, etc.
c. Smaller skilling initiatives in backward blocks may focus on sectors such as food processing and focus on women, employing female trainers.

5 Dharmapuri

5.1 Overview

Dharmapuri is located in north Tamil Nadu and is bordered by Thiruvannamalai and Viluppuram in the east, Salem in the south, the state of Karnataka in the west and Krishnagiri in the north. The district accounts for 3.6% of the total land area of the state and is largely covered by forests. It is divided into two revenue divisions, five taluks and eight blocks. It has a single corporation, ten town panchayats, 470 revenue villages and 251 panchayat villages.

Table 5-1: Basic Information (2010-11)

District Information	Dharmapuri	Tamil Nadu
Number of inhabited villages	1067	15,400
Area (Sq Km)	4,600	127,905
% of state area	3.6	100
Area rank	13	-
Revenue divisions	2	-
Taluks	5	-
Blocks	8	-
Corporation & municipalities	1	-
Town panchayats	10	-
Revenue villages	470	-
Panchayat villages	251	-

Source: District Statistical Handbook (2010-11)

5.2 Demographic Profile

Dharmapuri constitutes only about 2% of the state's population despite its size. This can be attributed to the large forested area and remoteness of many areas of the district. Consequently, it is also one of the most sparsely populated districts, with a mere 327 people per sq.km. The population growth rate is also below the state average, indicating a stable demographic scenario. About 83% of the population lives in rural areas. The sex ratio is dismally low compared to the state average at only 950 females per 1000 males. Primary sector workers account for more than 30% of the work force and more than 60% of the population lies in the working age group. The WPR is very high at 94.03%.

Table 5-2: Demographic Indicators (2011)

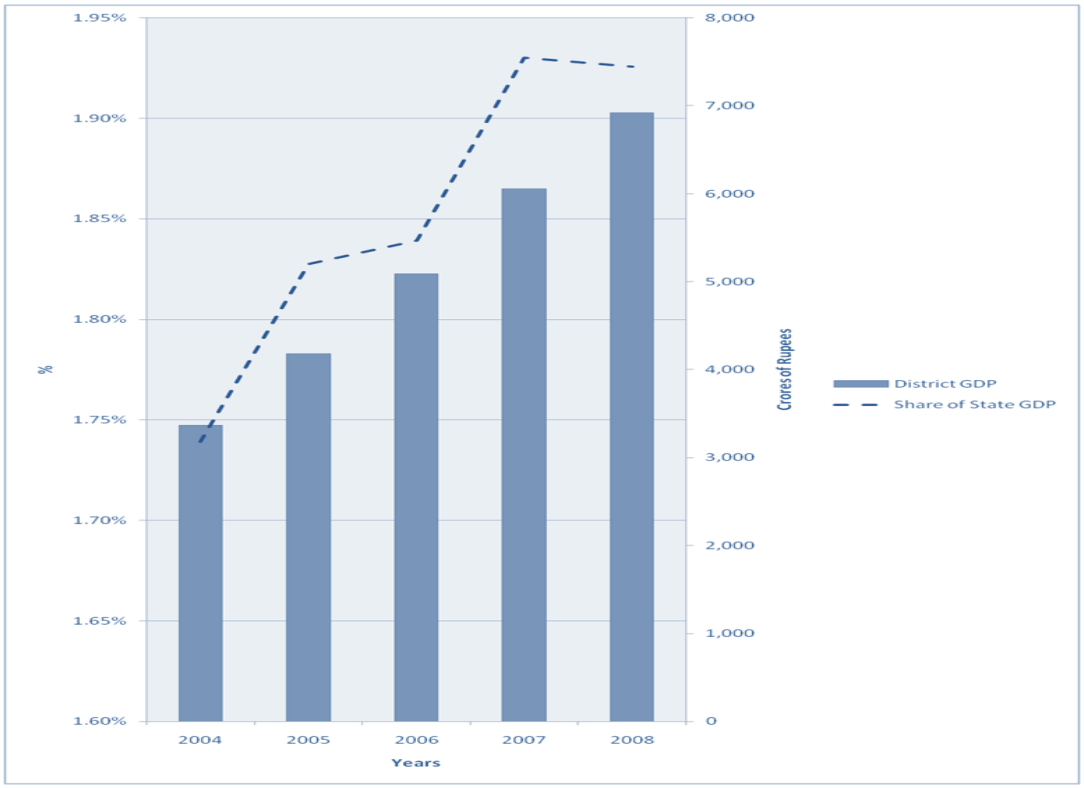
Population	Coimbatore	Tamil Nadu
Population	1,502,900	72,138,958
Share of state population (in %)	2	100
Population density (per sq. km.)	326.70	564
Urban population percentage	17.33	48.45
Total population annual growth rate (in %)	1.72	2
Urban population	260,381	34,949,729
Sex ratio (number of females per 1000 males)	946	995

Source: Census 2011 (Provisional)

5.3 Economic Profile

The contribution of the district to the state GDP has been increasing steadily from about 1.75% to a high of 1.9% in 2008-09. The district is among the most underdeveloped in the state, with both rural and urban per capita incomes lying well below state averages. Human development indicators are also poor with HDI and GDI of 0.584 and 0.582 respectively, far below the state average.

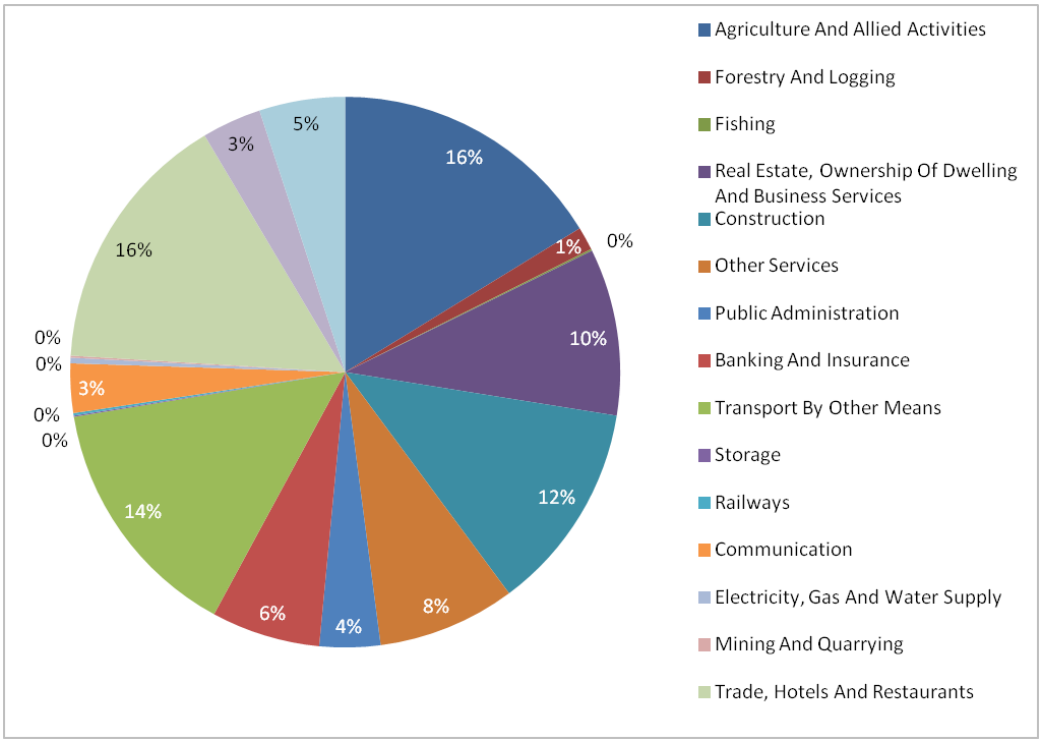
Figure 5.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Trade, hotels and restaurants accounted for 16% of the district GDP, followed by transport at 14%. Agriculture accounts for 16%, manufacturing accounts for just 8%, of which the majority is unregistered manufacturing at 5%. Other dominant sectors include storage, communication and railways.

Figure 5.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 5-3: Per Capita Income (2011-12)

Human Development Indicators	Dharmapuri	Tamil Nadu
Per capita urban income	62,100	100,600
Per capita rural income	27,400	39,400

Indicus Analytics: Market Skyline of India (2011-12)

5.3.1 Agriculture

Agriculture is the predominant economic activity of Dharmapuri. About 60% of the total labor force is engaged in agriculture and related activities. The majority of the small scale and household industries are food and agro processing based. An interesting feature of the district is the healthy worker to non-worker ratio, and the high proportion of main workers in the total worker population. This suggests a steady state of affairs in the agricultural sector in the district, with well established employment cycles.

About 82% of the total sown area is under food crops; 44% of this sown area is under cereals, 12% under pulses and 26% under fruits and vegetables. Non food crops include sugarcane, cotton, oil seeds and tobacco. About 18% of the total sown area is under non-food crops. Over 51% of this area goes to sugarcane while oil seeds and cotton have a share of 40% and 18%, respectively, of the remaining sown area. Yield is lower than the state average for almost all crops, with the exception of mango, oilseeds and cereals.

Table 5-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	66,915	44.87%
Pulses	18,626	12.49%
Condiments	5,788	3.88%
Fruits and vegetables	40,021	26.84%
Other	17,769	11.92%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	17,363	51.20%
Cotton	6,166	18.18%
Oil Seeds	13,838	40.81%
Tobacco	30	0.09%
Other	-3,485	-10.28%
Total Area under Food Crops	**149,119**	**81.47%**
Total Area under Non Food- Crops	**33,912**	**18.53%**

Source: Tamil Nadu Crop Report (2011-12)

Table 5-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield for Dharmapuri	Yield for Tamil Nadu
Cereals	12,726	12,136
Pulses	2,496	2,763
Sugarcane	73	101
Condiments	11,652	32,440
Vegetables	149,789	164,422
Mango	5,002	4,795
Cotton	316	368
Tobacco	1,093	1,524
Oil Seeds	23,810	16,484

Source: Tamil Nadu Crop Report (2011-12)

5.3.2 Industry

Dharmapuri is a heavily forested, largely agrarian economy with a low level of industrialization. Heavy industries entered the region only with the establishment of the SIDCO Industrial Estate in Dharmapuri. The industries in this estate largely focus on textiles, silk, match production, printing and metal production. A second estate in the same taluk is under construction.

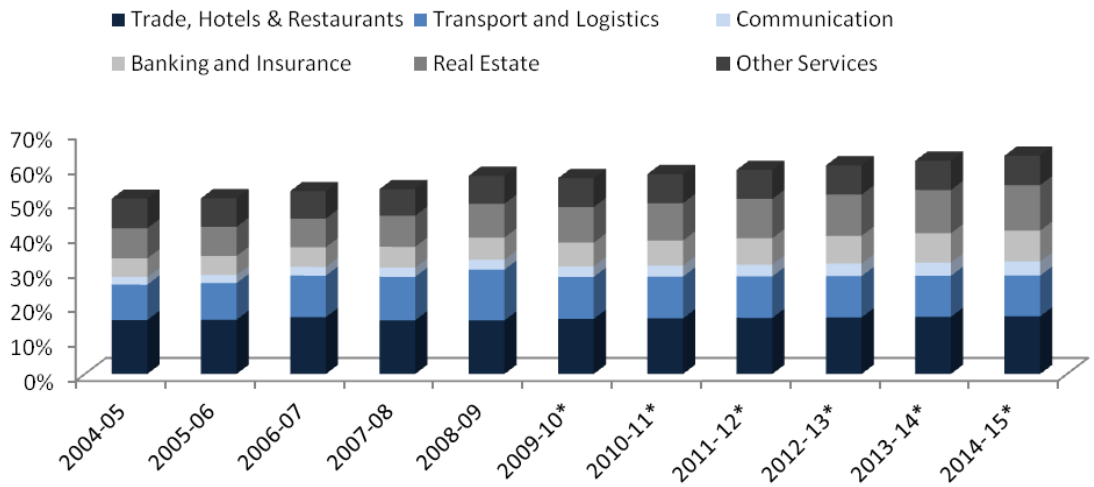
The predominant industry in Dharmapuri is largely agro processing based. Given the district's focus in the area of mango, tamarind, pulses, coconut and tapioca cultivation, allied industries like pulp processing, coir, flour mills and the like are the major focus sectors here. Interaction with the local employment office indicates that most of these agro processing units are set up on the borders of Krishnagiri and Dharmapuri, thereby resulting in limited employment opportunities. Further, these units are operational only during particular seasons of the year, leading to high levels of seasonal and marginal industrial employment. The district also has some mineral resources in the form of granite quarries, with 20 granite mines in the region. There are 19 granite polishing centres and 10 related government cooperative societies in the district.

Data on the SME sector indicates that food processing, textiles and small scale engineering units account for a majority of the activity in this sector. The presence of SMEs in forest produce processing is also of note.

Capex investment data confirms that planned investments in recent years continue to support agro based processing and automobile industries. In particular, the district is set to witness added capacities for the production of commercial vehicles.

5.3.3 Services

Figure 5.3: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The service sector has seen minimal growth in the district, with the exception of the transport and logistics sector, which is seen to have grown at a CAGR of 22% between 2004-05 and 2008-09.

The role of the services sector in Dharmapuri is relatively low, with 1.19 lakh people employed in the sector. The presence of a medical college gives some boost to the health sector. According to the District Statistical

Handbook, there were eight hospitals with bed strength of 207 in 2010-11. Overall, the healthcare infrastructure appears limited and widely distributed.

Bank networks remained relatively small in the district with 45 government bank branches, 21 private and 25 co-operative bank branches. Given the sparse population distribution and forested nature of the district, this may not be a large impediment growth, provided the concentration of these branches is centered on the developing industrial zones.

The district has over 1,700 km worth of road networks. Given the forested terrain, it is likely that there is potential for road development and conversion of a large network of un-surfaced roads to surfaced roads. Two major rail lines cut through the district, with a total track length of 136 kilometres. Given the agro based economy centered on small to medium sized producers and associated manufacturers, improving basic road infrastructure will be the key to improving market linkages and the growth of agro based SME sectors.

5.4 State of Education

The state of education is lackluster in Dharmapuri as compared to the rest of Tamil Nadu. The literacy rate is extremely low at 64%. While female literacy rose approximately 10% from 50.7% to 60.03%, male literacy actually declined from 71.6% to 69.16% between 2001 and 2011. The district accounts for about 3% of the total schools in the state. Enrolment ratios are slightly below the state average at 97.84% and 97.23% for primary and upper primary, respectively.

Table 5-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	50.70	60.03	0.18
Male	71.60	69.16	-0.03

Source: Census 2001, Census 2011(Provisional)

Table 5-7: Education Profile (2010-11)

Educational Statistics	Units in Dharmapuri	Units in Tamil Nadu
Primary	927	33,909
Upper primary	265	8,552
Secondary	93	4,436
Higher secondary	112	4,632
Primary age population		6,420,747
NER – Primary (%)	97.84	98
NER - Upper primary (%)	97.23	98
Dropout rate- Primary (%)	2.49	3.81
Dropout rate - Upper primary (%)	13.17	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 70,166, while enrolment in schools that had primary and upper primary classes was 60,524. Enrolment in upper primary schools was 211 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 46,644, while enrolment in schools with upper primary and secondary/ higher secondary classes was 45,644.

There are four engineering colleges and nine arts and science colleges in the district. There are three colleges providing hospitality education in the district. There is also a nursing college, a pharmacy college and a medical college. There are ten teacher training colleges and ten polytechnics. The combined capacity of all the ITIs and ITCs in the district is 2,919. The details of the major ITIs in the district are given in the appendix.

Table 5-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	4
Arts and science	9
Management	2
Medical	0
Dental	0
Nursing	1
Pharmacy	1
Other medical	1
Teacher training and education	10
Hospitality	3
Fashion technology	0
Polytechnics	10
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

5.5 Human Resource Availability

The current work force is estimated to be 6.28 lakh, which is estimated to grow to 8.08 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 85,000 and in 2017-22, the incremental availability is estimated to be 96,000.

Table 5-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	1,524	1,007	643	628		
2017	1,696	1,117	729	713	85	
2022	1,890	1,237	825	808		96

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level.

Table 5-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	59	9	17	85
2017-22	57	11	27	96

Source: Athena Research

5.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the unorganized sector and construction, mirroring state trends. Tourism and travel, transportation and logistics, retail, food processing, textiles and BFSI are expected to see a moderate increase in human resource requirements. The human resource requirement in the agriculture sector is expected to decline by 37,000 in 2012-17 and 32,000 in 2017-22.

Table 5-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-31	-1	-6	**-37**	-27	-1	-5	**-32**
Automobile	0	0	0	**0**	0	0	0	**0**
Chemicals and Pharmaceuticals	0	0	0	**0**	0	0	0	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	2	0	0	**2**	2	0	1	**3**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**0**	0	0	0	**0**
Handlooms & Handicrafts	0	0	0	**0**	0	0	0	**0**
Leather	0	0	0	**0**	0	0	0	**1**
Textiles	1	0	0	**2**	2	0	0	**2**
BFSI	0	1	2	**2**	0	1	2	**3**
Construction	18	4	2	**24**	41	8	4	**52**
Education	0	0	0	**0**	0	0	0	**1**
Healthcare	0	0	0	**1**	0	0	0	**1**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	0	0	1	**1**	0	1	1	**2**
Organized Retail	2	0	1	**3**	3	1	2	**5**
Real Estate	0	0	1	**1**	0	0	1	**1**
Tourism & Travel	1	3	3	**6**	1	5	4	**11**
Transportation & Logistics	3	1	0	**4**	3	1	1	**4**
Unorganized (excluding Agriculture and Construction)	27	14	19	**60**	32	21	25	**78**
TOTAL	**24**	**22**	**24**	**70**	**58**	**37**	**37**	**131**

Source: Athena Research

5.7 Skill Gap

The largest skill gap is at the semi skilled level at 14,000 in 2012-17 and 26,000 in 2017-22. There is estimated to be an excess availability of human resources at the unskilled level. However, with an increasing number of youth opting for skilling, this gap is expected to be neutralized by 2022. At the skilled level, the gap is estimated to be 7,000 in 2012-17 and 10,000 in 2017-22.

Table 5-12: Skill Gap in 000s

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	24	22	24	**70**	58	37	37	**131**
Incremental Human Resource Availability	59	9	17	**85**	57	11	27	**96**
Skill Gap	**-36**	**14**	**7**	**-15**	**0**	**26**	**10**	**36**

Note: Figures in negative indicate excess supply
Source: Athena Research

The pattern of skill gap suggests sustained increase in the human resource requirement at the semi- skilled and skilled level with the growth of sectors like construction and retail. This trend will continue in the next period, as human resource requirements grow with an expanding industry.

Qualitative Skill Gaps

Low quality of skills

The local employers displayed their dissatisfaction with the quality of labour from within the district. Owing to the high drop-out rates, most people in the district drop out of school after the 5th or 6th grade and go in search of employment or engage in agricultural activities. Thus most factory workers are usually uneducated and unskilled.

Lack of opportunities to pursue higher education

There are many schools in Dharmapuri, but compared to the other districts, the number is still relatively low. There are several colleges and institutes of higher education in the other districts, which is not the case for Dharmapuri. Those who wish to pursue education do have options within the district and people are compelled to enrol in institutes outside the district.

Inadequate investment in training institutes

There are a few training institutes in the district, such as the Apparel Training Design Centre. There are some government institutes to providing training as well. For the most part, however, only the women prefer to get trained, as they then find it easy to gain employment in spinning mills post training. A skill development institute for yield development techniques in agriculture has been proposed. But the process is long-drawn and there has not been much progress. There could be a training institute for gardeners, as an extension of agriculture. Women are keen to participate in such programs in order to gain employment in more productive areas. This demand must be met quickly

Lack of socio-economic development and job opportunities in the district

Dharmapuri is an under-developed district. Agriculture and industries are not well-developed in the district. Water problems further compound these issues by restricting the development of irrigation and subsequently, agricultural development. This also limits the development of energy sources and electricity sources for the district. Additionally, various government offices in the district have been formalized recently, which has led to a substantial delay in terms of decision making and policy implementation.

Unemployment is a major problem in the district. The low level of development restricts employment options in industries as well as agriculture. There is high outward migration from the district, often to Bangalore, where the district's inhabitants find employment in the construction sector. Those who do not migrate usually help their families with agriculture. Others find employment in textile units. In this scenario, there is very limited scope for development.

There is no incentive to acquire skills since there is not much industrial activity. Industries do not set up units within the district due to the lack of manpower and infrastructure.

5.8 Youth Aspirations

Table 5-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	**Low**
Employment Potential	**High**	Transport, Retail, Tourism & Travel	Food Processing, Construction
	Low	Electronics, Media and Communication	Agriculture, Handloom

Source: Athena Research

High inertia

Agricultural holdings are marginal, so the yield is very low. Furthermore, the youth were seen to be apprehensive about change, which complicates the execution of development plans. This acts as a disincentive for private investment. SIDCO has laid out some plans for setting up an estate in the district, but it is not definite. But the public is not very receptive. There is some apprehension that the locals' land will be taken away for developing such industrial estate

Low capability to absorb vocational curriculum

Recently there has been some development in school infrastructure, particularly for primary and middle school education. But most of the people prefer to migrate once they complete their basic education. The education sector is yet to fully meet the needs of the district's populace. Owing to the poor quality and access to primary and secondary education, the students were seen to display concerns about their capability to absorb the curriculum delivered in vocational training institutes

Financial insecurity, a disincentive for skill acquisition

Financial insecurity/economic compulsion were quoted as the most important factor driving dropout rates at the school level and was also responsible for the youth to enter to into the labour force without any formal training or skills.

High tendency to migrate

On average, students were seen to pursue education in the district until the 10th grade, after which they either move out of the district to pursue further studies or to find employment. In low income families, often the parents are engaged in menial jobs in Hosur or Bangalore. Conventionally these parents, send their children back to Dharmapuri to stay with their grandparents, finish their schooling and then move back to the place of work. Thus almost all the young girls and boys interviwed were certain of leaving the district for work after a certain point as the demand for skill development within Dharmapuri, is extremely low.

5.9 Recommendations

5.9.1 State

Improve quality and access to basic education

A major hindrance to low absorptive capacity of training among people is the lack of quality in the provision of basic education. Before reforming higher forms of education, the state should initiate reforms to enhance the quality of primary and secondary education to ensure strong fundamentals. This is evident from the district's high level of dropout rates. This calls for increased emphasis on improving the quality of basic education and to improve retention of students in school at least till the 10th grade and to ensure strong fundamentals, particularly in backward regions

Action Plan

d. Expand and rehabilitate basic educational infrastructure in backward regions to improve access
e. Build strong teacher training institutions, with a greater focus on the improvement of pedagogical methods and provide continuous training for contractual teachers
f. Use campaigns to improve community awareness and involvement to ensure the sustainability, maintenance and good management of the school and ensure that children stay in school at least until the 10th grade

Facilitate programs to encourage entrepreneurship

The lack of skill development opportunities coupled with the lack of incentives to foster entrepreneurship is a major problem in Dharmapuri. There is inadequate emphasis on grooming people to set up their own businesses. Given the low level of industrialization, entrepreneurship must be a priority area for the district.

Action Plan:

a. Train the youth in multiple skills, with greater emphasis on sectors which can support local self employment such as transport and hospitality
b. The Entrepreneurship Development Institute in the state must play a more proactive role in financing and regulating entrepreneurship programmes for youth in the district
c. Disburse seed capital to the youth based on a set of pre-determined criteria at a lower interest rate
d. Expand the voucher scheme to include multi-skilling and entrepreneurship programmes

5.9.2 Industry

Linking Wages with Skill Set

Industries could develop norms to increase wages and compensation with increase in skill level; subsequent promotions could also be designed for semi- skilled and skilled workers, thereby encouraging workers to take up skill development programs.

Action Plan:

a. Restructure the pay scales of semi-skilled labour with a variable component to incentivize performance
b. Incentivize semi-skilled employees to acquire additional skills on the job and incentivize the same trough additional pay post completion of the course
c. Encourage unskilled to acquire skills on the job and certify them based on experience/abilities to encourage vertical mobility within the organization and greater portability across organizations.
d. Establish a clear performance evaluation and appraisal system

On-the-Job Training

To avoid problems of high opportunity costs associated with taking up courses, the industry could provide options for short-term on-the-job learning programs in manufacturing sectors such as food processing electronics and automobiles. Other industries could set a training and induction period for workers at all skill levels.

Action Plan:

a. The industry should partner with skill training providers to offer short-term courses to employees at the work place
b. The industry should participate in providing inputs to training institutes on the curriculum
c. Campus recruitments from skill training institutes by large firms and off-campus recruitments by smaller firms is likely to strengthen the link between skill acquisition and employability, thereby incentivizing the youth to enrol in such programs.

5.9.3 Training Providers

Focus on up-skilling workers in the unorganized sector

Owing to the high dropout rates at various stages of the value chain starting from primary schooling in the district, a large number of people tend to enter the labour pool as unskilled or semi-skilled labourers. Most of these people are employed in the unorganized sector and tend to operate at low productivity levels and accrue poor wage rates. Thus there is a huge demand to up skill those who are already employed in the unorganized sector and provide them with the required certifications to transit into the formal sector.

Action Plan:

a. Identify the key employers of unskilled and semi-skilled labour in the district within the unorganized sector
b. Introduce short modular employability courses in trades that have high local or regional demand
c. Introduce flexible course timings
d. Certify and provide placement support to those graduating from the MES trades to catalyse transition into the formal sector

Improve the enrolment of girls

Surveys in the district indicate that a gender neutral approach towards delivering training has not worked very well in the backward regions of the district. Most of these areas are seen to register a low level of enrolment of

girls in higher education, owing to hesitation by their families to send the girls to an institution for training. There is a clear need to introduce mechanisms to encourage people to send girls to the training centre.

Action Plan:

a. Deploy female trainers in training centres in the backward regions. Women trainers provide safety and protection for the girl students and are seen to give them the confidence and opportunity to follow their own paths
b. Undertake community outreach drives and hold interactions with parents on the benefits of skilling their girl child

5.9.4 NSDC

Community learning initiatives for women in backward areas

The need for skill development is felt most among the women in the district, who subject to greater economic and social limitations. Skilling women workers engaged in informal labour is critical to their empowerment and transition into a formal system with better benefits. However, since most women are constrained by social factors from entering the formal training system, a set of community led initiatives must be designed to help skill women in the backward areas in the district.

Action Plan:

a. Design short training modules customized to suit the employment opportunities available for women in the district in the food processing and textile sectors
b. Collaborate with local Self Help Groups or Community based organizations to deliver the training modules
c. Facilitate the creation of Community Learning Centres in every district, to co-ordinate the activities of the Self Help Groups and provide the required support in terms access to funding and placement for the trained women

Use of Existing Infrastructure

The utilization of capacity at ITI Dharmapuri in 2012 was 64%, indicating that there is potential for making optimal use of existing infrastructure to provide training for growing service sectors such as transportation and logistics and construction, which are likely to see a high requirement for semi-skilled human resources.

Action Plan:

a. It is recommended that training programs for the services sector follow a dual apprenticeship system whereby a two-month internship is a mandatory part of the curriculum and an apprenticeship on completion of the course
b. Since the youth aspirations indicate willingness to migrate among the youth, training facilities should be located close to the place of employment
c. The investment in infrastructure may be minimized by using existing under-utilized capacity or by integrating training with employment, by partnering with industry to teach students on-the-job, along with weekly theoretical classes. This is likely to be effective for service sectors such as transportation and retail

6 Dindigul

6.1 Overview

Dindigul came into existence in 1985, when it was carved out of Madurai district for administrative and economic reasons. Located in west Tamil Nadu, the district is surrounded by the state of Kerala in the west, Tiruppur and Karur districts in the north, Trichy and Pudukkottai districts in the east and Madurai and Theni districts in the south. Administratively, the district is divided into three revenue divisions, comprising 8 taluks, 14 blocks and 358 revenue villages. These sub units are governed by 4 municipalities, 23 town panchayats and 306 village panchayats.

Table 6-1: Basic Information

District Information	Dindigul	Tamil Nadu
Number of inhabited villages	337	15,400
Area (Sq Km)	5,930	127,905
% of state area	4.64	100
Area rank	5	-
Revenue divisions	3	-
Taluks	8	-
Blocks	14	-
Corporation & municipalities	4	-
Town panchayats	23	-
Revenue villages	358	-
Panchayat villages	306	-

Source: District Statistical Handbook (2010-11)

6.2 Demographic Profile

With a population of over 21 lakh, the district contributes 3% to the total state population. However, owing to the large geographical area, the population density of the district is contained at a medium level of 364 persons per sq.km. The district is relatively rural, with only 37.36% of its population residing in urban areas, while the annual population growth rate is stable at 1.35%. The WPR is 45.03%, which is considerably lower than the working age proportion of the population.

With respect to development, the district has a healthy sex ratio of 998 females per 1000 males. Its overall HDI and GDI indicators are substantially lower than the state average, reflecting lower levels of development within the rural areas of the district. However, primary research suggests that the district has witnessed some significant improvements over the past few years, which have led to a rising trend in growth and development. The current phase of transition observed in the district is projected to give way to high levels of development in the future.

Table 6-2: Demographic Indicators

Population	Dindigul	Tamil Nadu
Population	2,161,367	72,138,958
Share of state population (in %)	3	100
Population density (per sq. km.)	364.47	564
Urban population percentage	37.36	48.45
Total population annual growth rate (in %)	1.35	2
Urban population	807,559	34,949,729
Sex ratio (number of females per 1000 males)	990	995

Source: Census 2011 (Provisional)

6.3 Economic Profile

Although Dindigul's GDP has been growing consistently over the last few years, its contribution to the state GDP has declined over the years, from over 3% in 1999, to about 2.8% in 2006-07. This statistic might be an indicator of the slow pace of economic growth in the district, vis-a-vis other districts in the state. Average per capita income in the district is far lower than the state average, at INR 41,226. The district is further characterized by a vast rural-urban divide, with urban areas garnering 63 times the income of rural areas.

Table 6-3: Per Capita Income (2011-12)

Human Development Indicators	Dindigul	Tamil Nadu
Per capita urban income	52,000	100,600
Per capita rural income	34,800	39,400

Source: Indicus Analytics (2011-12)

6.3.1 Agriculture

As a primarily agrarian economy, a majority of the workforce is engaged in agricultural activities. About 32% of the workforce is engaged as agricultural labor, indicating higher numbers of wage laborers as compared to landholders. Further, 86% of the workers are employed for a major part of the year, reflecting low seasonal unemployment patterns. Interaction with various district level officials reveals the lack of employment options faced by the locals in Dindigul. Low presence of industries has left the district's inhabitants with no choice but to pursue agrarian activities.

Around 54% of the total sown area is under cereals, 13% under pulses and 25% under fruits and vegetables. About 64% of the area under non food crops goes to non food crops such as sugarcane, cotton, tobacco while oil seeds has the major share at 23% of the remaining area. Yield is higher than the state for cereals, pulses, sugarcane, condiments, mango, cotton and oil seeds, while it is lower than the state for tobacco and vegetables.

Lower number of landholders possibly results in larger land holdings, which generates higher agricultural productivity. All the major crops sown in the district, with an exception of onion, have higher yield rates than the state averages. Most of the agricultural land in the district is highly fertile, as evidenced by primary research. Further, these land areas are mostly large in size, which enables the farmers to employ relatively well developed agricultural techniques. This has ensured that although there are relatively larger numbers of people engaged in agricultural activities, productivity of agriculture continues to remain comparatively high.

Table 6-4: Major Crops: Area and Percentage Share Sown

Food Crop	Area Sown	Percentage of Area Sown
Cereals	96,124	0.54
Pulses	23,067	0.13
Condiments	6,186	0.03
Fruits and vegetables	44,439	0.25
Other	7,398	0.04
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	6,196	0.10
Cotton	1,281	0.02
Oil Seeds	14,856	0.23
Tobacco	1,338	0.02
Other	41,302	0.64

Source: Tamil Nadu Crop Report (2011-12)

Table 6-5: Major Crops: Yield in KG per Hectare

Crop	Dindigul	Yield for Tamil Nadu
Cereals	16,335	12,136
Pulses	2,922	2,763
Sugarcane	146	101
Condiments	33,614	32,440
Vegetables	161,874	164,422
Mango	4,917	4,795
Cotton	564	368
Tobacco	1,450	1,524
Oil Seeds	23,058	16,484

Source: Tamil Nadu Crop Report (2011-12)

6.3.2 Industry

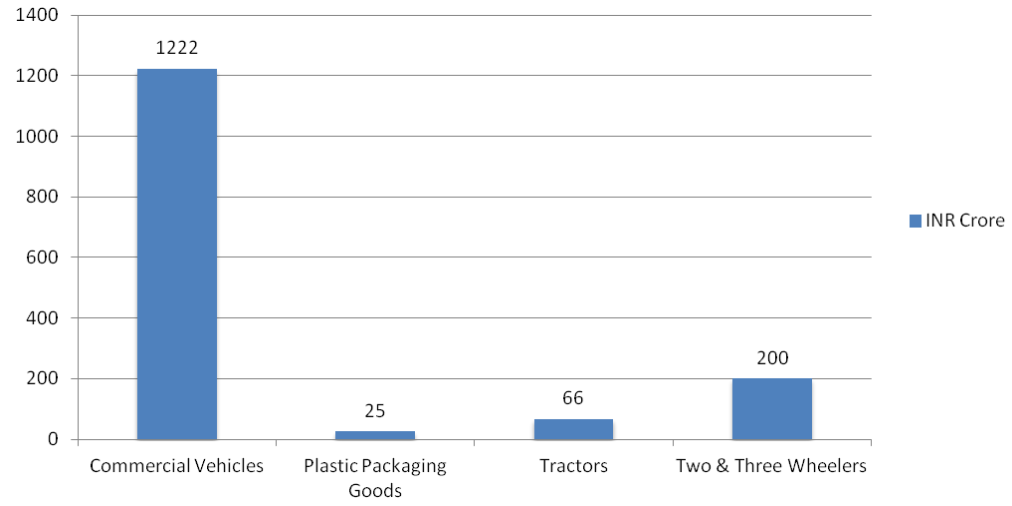
There are over 31,000 registered industrial units in Dindigul employing nearly 3.94 lakh people. There are 95 large and medium scale units, while the rest are small and micro industries. The combined turnover of industry in 2009-10 was over INR 52,000 lakh. The district is known for its textile spinning industry. Chinnalapatti is a well known centre for handlooms in the country. Dindigul is also known for its leather tanneries and lock industries. There are 60 leather tanneries and 50 lock making units situated in Dindigul. The district is also rapidly becoming a centre for food processing.

The aggregate investment until 2010-11 by all industrial units is more than INR 76,800 lakh. Major investments in the near future involve mainly food processing units and cement. In 2012, the state government has announced plans to invest INR 13.7 crore in a beverage unit, processed food units and commercial complexes. Chettinad Cement Corporation will invest INR 5.65 crore to expand its plant in the district. Rail and road transport infrastructure investments by the government will exceed INR 5,200 crore. Finally, investments worth

INR 100 crore are also being made in transport and logistics services for the food processing industry in the medium term.

However, over the recent years, the district has witnessed a rise in medium and small scale industrial activity with a number of small and micro industries operating within the sub sectors of coir production, agro processing and milk products. There are a considerable number of metallurgical industries operating in the district too. Of these industrial units, about 10% are unorganized – most of them choose to register with the DIC to leverage the various benefits and subsidies provided.

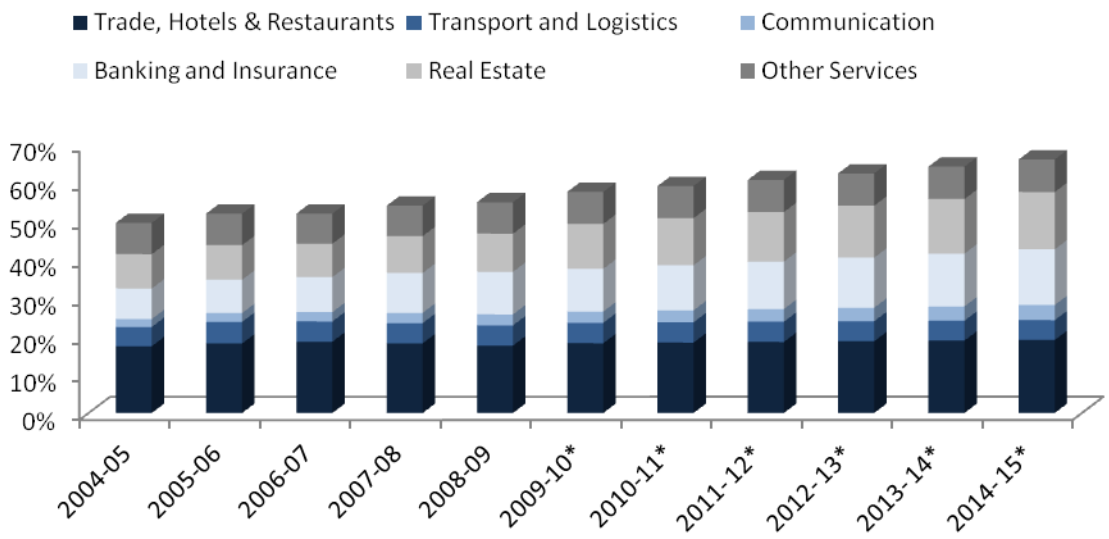
Figure 6.1: Investments in Dindigul (in INR crore)



Source: Capex, CMIE (2012)

6.3.3 Services

Figure 6.2: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The service sector has seen moderate growth and is expected to contribute to 63% of the district's output in 2012-13 as against the 50% contributed in 2008-09. At a CAGR of 17%, communication and banking are the fastest growing sectors in the district and is expected to contribute to 4% and 15% of district GDP respectively as on 2014-15.

Dindigul's service sector employs approximately 1.87 lakh people. Dindigul houses two prominent tourist destinations: the famous temple of Lord Kartikeya located in Palani, which attracts more than 70 lakh religious pilgrims every year, and Kodaikanal, a famous tourist hill station that attracts a considerable number of foreign tourists. However, the hospitality sector continues to be largely unorganized. There appears to be a general decline in the level of tourism post 2005, with a decline in the absolute number of foreign tourist arrivals.

Spurred by the growing industrial development, the financial infrastructure of the district is well developed, with 123 government bank branches, 35 private bank branches and 31 co-operative banks. There are a considerable number of hospitals and health care centres too; however, the population to doctor ratio is quite low, with one doctor available for every 7,040 persons in the district. Transport infrastructure too is well developed within the district, with over 361 kms of roads connecting various parts of the district. The intra district connectivity is further enhanced by approximately 67 kms of railway route length and 18 railway stations across the district. Inter district connectivity however, seems to be low, with no major national or state highways passing through the district.

6.4 State of Education

Literacy levels are low in the district, with an overall literacy rate of 77%. However, literacy levels have improved over the past decade, especially for the females in the district. Female literacy has risen by 10%, from 58.92% in 2001, to 68.82% in 2011. Male literacy too, has improved from 79.8% to 84.91%. Although these figures depict an improvement, gender literacy gap is higher for Dindigul than other comparable districts, reflecting poor levels of gender development.

Table 6-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	58.90	68.82	0.17
Male	79.80	84.91	0.06

Source: Census 2001, Census 2011

Analysis of schooling education data suggests a far lower completion rate in primary schools as opposed to upper primary schools. The dropout rate, on the other hand, is higher for upper primary schools as opposed to primary schools. This suggests that the value of higher education is lower than the earning opportunities available. A number of cultural and economic constraints lead to early drop outs from schools, thereby revealing a failure to capitalize the available schooling infrastructure.

There are a total of 1789 schools; a majority of them are primary schools. A significant deviation from the state trend is observed with Net Enrolment Ratios; NER for primary schools is lower than NER for upper primary schools, suggesting that a significant number of children remain uneducated in the district, which could be explained by the high poverty levels. Another possible explanatory factor can stem from social and cultural patterns – high gender disparity levels in the district suggest unwillingness on the part of the district's inhabitants to educate girl children.

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 1,10,424, while enrolment in schools that had primary and upper

primary classes was 80,899. Enrolment in upper primary schools was 502 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 39,721, while enrolment in schools with upper primary and secondary/ higher secondary classes was 65,410.

Table 6-7: Education Profile (2010-11)

Educational Statistics	Units in Dindigul	Units in Tamil Nadu
Primary	1,290	33,909
Upper primary	239	8,552
Secondary	129	4,436
Higher secondary	131	4,632
Primary age population	214,724	6,420,747
NER – Primary (%)	97.9	98
NER - Upper primary (%)	98.22	98
Dropout rate- Primary (%)	4.73	3.81
Dropout rate - Upper primary (%)	7.19	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

Table 6-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	12
Arts and science	9
Management	2
Medical	0
Dental	0
Nursing	1
Pharmacy	0
Other medical	0
Teacher training and education	12
Hospitality	5
Fashion technology	0
Polytechnics	13
Agriculture	2

Source: UGC, AICTE, MHRD Database (2010-11)

Higher education is moderately represented in the district. There are two universities, 16 arts and science colleges and 17 engineering colleges in the district. There are a number of vocational educational institutions too; most of them are ITIs set up by the existing industrial units, focusing on garnering enough skilled manpower for their factory operations. The combined capacity of all the ITIs and ITCs in the district is 3,591. These ITIs are mostly concentrated around the industrial estates, which might not facilitate skill development in all the areas of the district.

6.5 Human Resource Availability

The current work force is estimated to be 8.99 lakh, which is estimated to grow to 10.73 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 83,000 and in 2017-22, the incremental availability is estimated to be 91,000.

Table 6-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	2,182	1,443	920	899		
2017	2,352	1,548	1,004	981	83	
2022	2,541	1,661	1,096	1,073		91

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level.

Table 6-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	42	7	33	83
2017-22	63	8	21	91

Source: Athena Research

6.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the unorganized sector. Tourism, hospitality and travel and construction will also show strong growth, mirroring state trends. Food processing is expected to grow on account of the plan to set up a food park in the district. Textiles is expected to show more rationalized growth. Support services such as transportation and logistics, retail and BFSI are expected to see a moderate increase in human resource requirements. The human resource requirement in the agriculture sector is expected to decline by 41,000 in 2012-17 and 36,000 in 2017-22.

The long term growth sectors for Dindigul are food processing and construction. The development of an enabling environment for the food processing sectors will take several years, which is why the growth of human resource requirements in food processing is relatively low, but is high for construction. Traditional industries like textiles and leather will continue strong growth on the back of an increasing export base. Competitive pressures in these sectors from other developing districts will also contribute to enhanced growth.

Table 6-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-34	-1	-6	**-41**	-30	-1	-5	**-36**
Automobile	0	0	0	**0**	0	0	0	**0**
Chemicals and Pharmaceuticals	0	0	0	**0**	0	0	0	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	5	0	1	**6**	7	1	2	**9**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**0**	0	0	0	**0**
Handlooms & Handicrafts	-1	0	0	**-1**	-1	0	0	**-1**
Leather	2	1	1	**3**	3	1	1	**4**
Textiles	5	1	1	**7**	7	1	2	**10**
BFSI	0	1	4	**6**	0	2	6	**8**
Construction	22	4	2	**29**	50	9	4	**63**
Education	0	0	1	**1**	0	0	1	**1**
Healthcare	0	1	1	**2**	0	1	1	**2**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	0	0	1	**1**	0	1	2	**3**
Organized Retail	3	1	2	**5**	4	1	3	**9**
Real Estate	0	0	1	**1**	0	0	1	**2**
Tourism & Travel	4	16	14	**34**	7	27	24	**58**
Transportation & Logistics	1	0	0	**2**	1	0	0	**2**
Unorganized (excluding Agriculture and Construction)	39	20	27	**87**	46	30	36	**112**
TOTAL	**48**	**45**	**50**	**142**	**95**	**74**	**77**	**245**

Source: Athena Research

6.7 Skill Gap

The largest skill gap is at the semi skilled level at 38,000 in 2012-17 and 66,000 in 2017-22. There is estimated to be a small gap in unskilled human resource in 2012-17, which is expected to grow in 2017-22. This indicates an overall increase in the need for lower level skills since the unskilled category includes all those with less than 10th plus 3 years of education. The skill gap at the skilled level is expected to grow significantly from 17,000 in 2012-17 to 56,000 in 2017-22.

Table 6-12: Skill Gap

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	48	45	50	**142**	95	74	77	**245**
Incremental Human Resource Availability	42	7	33	**83**	63	8	21	**91**
Skill Gap	**5**	**38**	**17**	**59**	**32**	**66**	**56**	**154**

Source: Athena Research

The pattern of skill gap suggests a widening gap for workers across skill levels. In 2012-17, traditional industries are expected to employ a large number of unskilled workers and remain competitive by cost cutting. However, in order to maintain competitive advantage in the long term, operating at low costs alone will not be sufficient; industries would have to invest in skill development. Service sector growth will necessitate increasing demand for skilled workers in the same period. Manufacturing industries employing semi-skilled human resources, and increasing productivity and competitiveness in traditional industries will lead to increasing demand for semi-skilled and skilled human resources in 2017-2022.

Qualitative Skill Gaps

Inadequate formalization of skills

In terms of skill development, most of the workers have basic education, but very few workers enrol in vocational training programs. Formal education does not prepare the workers for work and the transition to formal employment is difficult for them. There are a few vocational training institutes and ITIs in the district. They do not usually attract many people, because of their high fees. There are not many government-funded ITIs in the district, and people are unwilling to pay for diploma education, especially when they could pursue a bachelor's degree for the same amount

Career promotion at low skill levels not institutionalized

The lack of skilled labour supply leads to the industrial units becoming more mechanized. Higher levels of mechanization also lead to lower costs and greater productivity, thereby cushioning them from the possible fallout caused by the unavailability of labourers with specific skills. This trend is holds the risk of driving levels of unemployment in the future, which will limit the district's potential for inclusive growth and development.

Low emphasis on grooming skills for local demand

Dindigul has always been an agrarian economy. Although the last few years have seen a decline in the interest to pursue agriculture, rising unemployment figures have left the district's residents with no choice but to pursue agricultural activities. The soil is fertile and the quality of agricultural land is well-suited to increased agricultural production. Agricultural productivity is high and contributes to a significant chunk of the district economy. Despite this there are no skilling initiatives in the district to groom the population to cater to local demand.

6.8 Youth Aspirations

Table 6-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	Hospitality, BFSI, transport	Food Processing, Construction
	Low	IT, education	Gems & Jewellery, Handloom

Source: Athena Research

Skill sets and abilities do not match educational attainment

Dindigul is going through an interesting phase right now; the district is on the verge of becoming an industrialized district, much like its neighbours – Tiruppur and Coimbatore. Currently, however, the district is still primarily agrarian. But the level of industrialization is rising.

The district economy is heavily dependent on agriculture, and so a large part of the district's populace is still engaged in primary sector activities. Growing industrialization, however, means that the younger generation is averse to pursuing any form of agricultural activity. They attach a low status to jobs related to agriculture. They often seek employment in various industries. Recently, some of them have begun to set up their own enterprises.

Education levels in the district have seen significant improvement over the past five years. People usually choose to get educated at least until the 10^{th} or 12^{th} grade in the district. Although this increased preference for education is a significant development that will facilitate the long term growth of the district, in the short term, it causes unemployment amongst skilled youth. Jobs are being generated by the industries, but the requirements for these jobs often do not match the educational qualifications of the candidates. The mismatch is not purely quantitative; it is more qualitative in nature. Often, the locals are unaware of the qualifications required to gain employment in the industry. Even if they do finish college and gain a bachelor's degree, it does not make them employable if their skill sets do not meet industry demands.

This mismatch has led to an increase in unemployment figures for the district over the last few years.

Low dignity associated with vocational skills

Very few youth enroll in vocational training. Gaps in basic formal education prevent skills from being absorbed in a classroom setting. Low interest in skill development may be attributed to the absence of a clear link between skill training institutes and employment and low awareness about existing skill development initiatives.

Engineering is the most popular profession across the district. The youth display a strong interest in sectors such as IT-ITES, engineering goods and automobile. Low dignity is associated with jobs in the agriculture sector. There is a move away from traditional jobs such as handloom, leather and lock-making. Howere,there appears to be a relatively high level of interest in entrepreneurship.

Aspirations driven by the need for financial security and retain familial ties

The major factors that affect aspirations are financial security and family. Educational background and area of residence also influence availability of information on existing job opportunities, which, in turn, contributes towards the formation of aspirations. There is a high willingness to migrate to other districts for work.

6.9 Recommendations

6.9.1 State Government

Increase the efficiencies of employment exchanges

Employment exchanges continue to remain an important labor market institution. Despite the rising concerns of inefficiency across employment exchanges in the state, it continues to remain the main source of providing government jobs in most districts. Technology deficit, poor management coupled with the diminishing role of government in recruitment has led to the failure of employment exchanges in India. Nevertheless, their accessibility and awareness of the exchange among candidates is high. Through targeted interventions, these institutions can be empowered to significantly offset the problem of unemployment.

Action Plan:

a. Expand the functions performed by employment exchanges to include counselling, assessments, training and apprenticeships
b. Disseminate information regarding skill training initiatives through the exchanges
c. Reform the governance and management structures of employment exchanges in the district through greater involvement of the private sector through the PPP mode
d. Identify performance targets for employment exchanges

Career Counselling

The lack of guidance regarding skill development is cited as a major constraint to the achievement of aspirations in Dindigul. The opportunities for education are not well understood. Career counselling is essential given that youth aspirations are not entirely in line with human resource requirements.

Action Plan:

a. Provide career counseling at the school and college level is essential to facilitate better course and job match for the youth.
b. Information regarding skill training must be made available through district offices, employment exchanges, district websites and through direct interactions at the school level to facilitate appropriate career choices.
c. State and local government should focus on coordination between the relevant departments to impart basic skills suited to employability.
d. Focus on enabling the existing unskilled workforce to transition into vocational or higher education.

Unorganized Sector and Agriculture

With 77,000 people set to leave agriculture by 2022 in the district and nearly 2 lakh additional jobs to be created in the unorganized sector, the government needs to be ready to create an enabling environment for skill development for these workers.

Action Plan:

a. Initiate skill voucher schemes to encourage skill acquisition at the lower skill levels
b. Improve labor welfare measures in sectors such as construction for informal sector workers
c. Skill the unskilled population to enter labor-intensive industries such as leather, textiles, food processing and construction

6.9.2 Industry

Partnerships to Train the Trainers

The linkage between industry and training institutes continue to remain weak, with the industry playing little or no role in the development of curriculum and pedagogy. As a consequence the curriculum delivered at most vocational training institutes remain outdated or of little relevance to industry requirements. As a consequence industries are increasingly faced with the prospect of hiring graduates who are not job-ready, resulting in large re-training costs. This is especially true of ITIs.

Action Plan:

a. Collaborate with ITIs/training institutes in the region and introduce industry relevant trades or courses
b. Incentivize greater emphasis on the practical component through paid internships for students during their course
c. Provide inputs on the nature of equipment to be used for training as well as the training delivery methods
d. Forge relationships with training institutes for the purpose of organizing meaningful training programs that can cater for on-job-training and off-job training
e. Organize workshops for faculty members, with a focus on equipment and technical information needed to develop new skills of relevance to industry

Industry norms on promotions for unskilled and semi-skilled workers based on experience and abilities

The vertical mobility of semi-skilled workers within an organization continue to remain limited. Currently there is no clear pay and career path for semi skilled workers in Industry. This is all the more visible in the case of unskilled workers who are predominantly recruited as contract labour.

Action Plan:

a. Restructure the pay scales of semi-skilled labour with a variable component to incentivize performance
b. Encourage unskilled to acquire skills on the job and certify them based on experience/abilities to encourage vertical mobility within the organization and greater portability across organizations.
c. Create a system for promotions based on clearly communicated performance criteria

6.9.3 Training Providers

Industry Collaboration

Industry tie ups for growing sectors such as food processing, textiles, leather retail and tourism and travel are recommended. With traditional sectors like textiles and tourism and travel set to get more competitive, greater organization between industry players in these sectors is expected.

a. A large proportion of the labor force in sectors such as transport and food processing chooses to acquire skills informally or on-the-job. However, in order to bridge the qualitative mismatch in skills, supplementary training programs may be instituted for logistics and cold storage. The purpose of such programs is to link employment to skill acquisition and encourage the acceptance of vocational training as an alternative to formal education.
b. Set up short-term courses for skilling in labor-intensive sectors such as leather and textiles in Dindigul. Short-term courses are preferred by the youth due to the low opportunity cost in terms of wages.

c. The courses should focus on up-skilling existing workers and provide flexible timings
d. Invite members of the industry to deliver guest lectures/ conduct industry visits

Strengthen labour market outcomes

The training institutes in the district continue to display poor placement performance, with apprenticeships remaining the largest component of on campus employment of students by Industry. The weak linkage between training institute and industry, coupled with the lack of adequate emphasis on creating and operating placement cells are the key factors contributing to the low placement performance of the institute.

Action Plan:

a. Create a placement cell with dedicated personnel. The cell must be responsible for organizing job fairs and strengthening the linkage between the industry and the institute through guest lectures and in-plant training and industry visits.
b. Display information on employment opportunities (appearing in newspapers, websites and important job sites) on the institute notice board
c. Create a feedback mechanism with industry to collect information on the relevance of the course and curriculum to industry needs
d. Impart live skills, including communication and human resources management
e. Facilitate interaction with student alumni to provide the students with a better perspective on the nature of employment

6.9.4 NSDC

Strengthen train the trainers programs

Primary surveys in the district reveal that most training institutes suffer from the lack of good quality instructors. There is also a lack of standardization of eligibility criteria for trainers both for entry and advanced levels resulting in varying criterion adopted by training institutes to select trainers. Government training institutions follow certain standard norms and procedures for selection of trainers while private training institutes and those run by NGOs follow their own modes of selection.

Action Plan:

a. Encourage modular courses for teachers, to help them up-skill themselves on the job
b. Collaborate with industry to design refresher programmes to skill faculty
c. Engage master trainers to support the development of teacher training modules
d. Identify and support teacher training institutes
e. Create standard norms for certification of trainers based on level of training and type of training under the ambit of the SSCs

Up-skilling workers in high growth sectors

Given the mismatch in youth aspirations, it is unlikely that fresh skilling initiatives may have difficulties in mobilizing students. The lack of industry orientation and the aspiration to transition into formal skilling also leads to high drop outs. Therefore, training initiatives should focus on up-skilling existing workers in high growth sectors such as food processing, textiles and construction.

Action Plan:

a. Provide technical training through short-term courses for the semi-skilled level for these sectors.
b. Encourage tie-ups with large industry players to ensure captive student base and absorption into the workforce on completion of training
c. Ensure conformity to SSC norms on curriculum and competency based evaluation

7 Erode

7.1 Overview

Formerly known as 'Periyar' district, Erode district came into existence in 1979 with the bifurcation of Coimbatore district. Erode is situated in east Tamil Nadu and is bordered by the Nilgiris and Coimbatore district in the east, Tiruppur and Karur districts in the south, Namakkal and Salem districts in the west and the state of Karnataka in the north. Administratively, the district is divided into 2 revenue divisions, comprising 5 taluks, 14 blocks and 368 revenue villages. These sub units are further administered by 11 municipalities, 53 town panchayats and 343 panchayat villages.

Table 7-1: Basic Information (2010-11)

District Information	Erode	Tamil Nadu
Number of inhabited villages	434	15,400
Area (Sq Km)	5,554	127,905
% of state area	4.34	100
Area rank	7	-
Revenue divisions	2	-
Taluks	5	-
Blocks	14	-
Corporation & municipalities	11	-
Town panchayats	53	-
Revenue villages	368	-
Panchayat Villages	343	-

Source: District Statistical Handbook (2010-11)

7.2 Demographic Profile

At a population figure of over 22.5 lakh, Erode contributes 3.13% to the total population of Tamil Nadu. The population density of the district is slightly on the higher side, at 407 persons per square kilometer. The annual population growth rate is 1.72%, slightly lower than the state average. About half of the district is urbanized, with over 51% of the population residing in urban areas. At 63.48%, WPR for the district is high, deviating from the trend observed in other districts of the state. The district fares well with respect to development too – its HDI and GDI indicators are slightly higher than the state average, at 0.658 and 0.656 respectively.

Table 7-2: Demographic Indicators (2011)

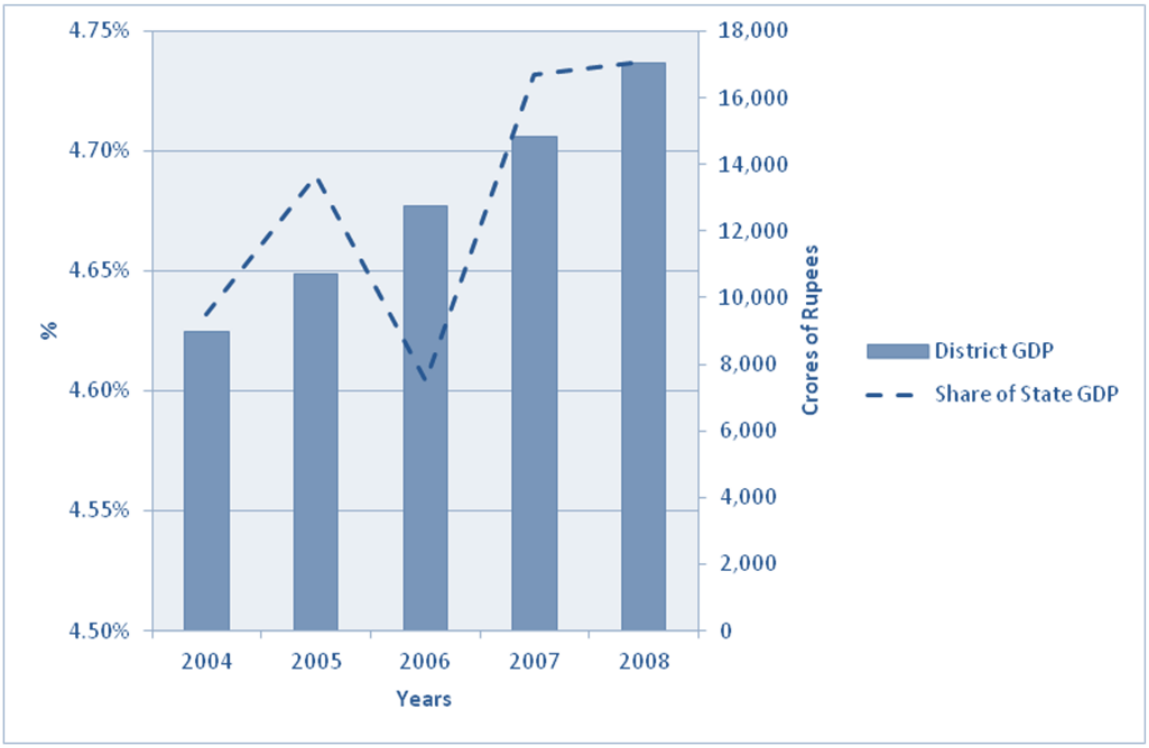
Population	Erode	Tamil Nadu
Population	2,259,608	72,138,958
Share of state population (in %)	3	100
Population density (per sq. km.)	406.88	564
Urban population percentage	51.22	48.45
Total population annual growth rate (in %)	1.72	2
Urban population	1,157,393	34,949,729
Sex ratio (number of females per 1000 males)	992	995

Source: Census 2011 (Provisional)

7.3 Economic Profile

The contribution of the district to state GDP has risen sharply in recent years and is about 4.7% in 2008-09. Per capita incomes are low relative to the state, and urban-rural disparity is wide. The district does moderately well on human development indicators like HDI and GDI, with scores of 0.64 for both, but still trails the state average.

Figure 7.1: District GDP Growth and % Share of State GDP for 2004-2008

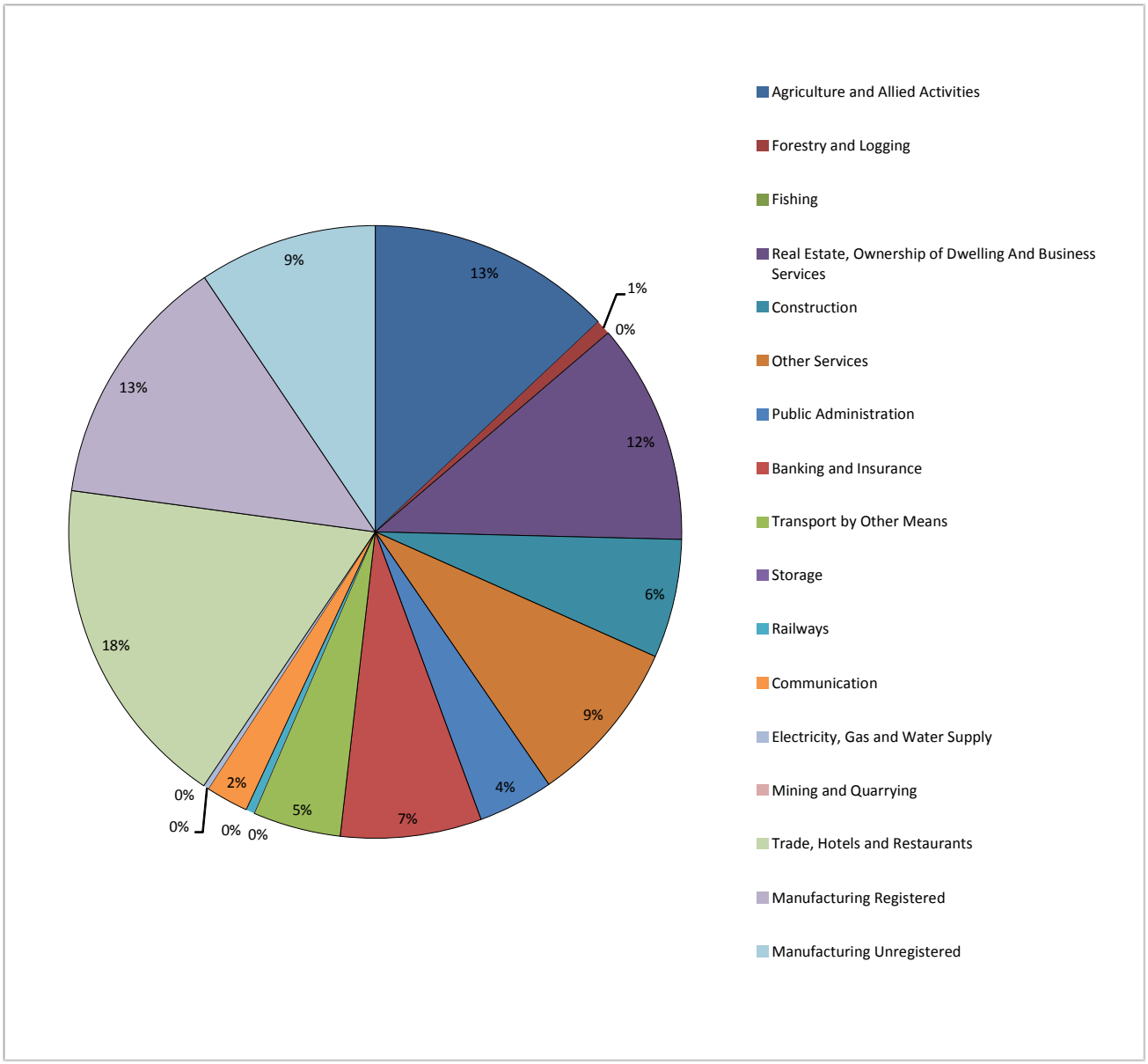


Source: Department of Economics and Statistics (2008-09)

Trade, hotels and restaurants accounted for 18% of district GDP, followed by real estate services at 12%. Agriculture accounts for 13% while forestry accounts for another 2%. Manufacturing accounts for 22%, of which

unregistered manufacturing accounts for about 40%. Other dominant sectors include banking and financial services, communication and railways.

Figure 7.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 7-3: Per Capita Income (2011-12)

Human Development Indicators	Erode	Tamil Nadu
Per capita urban income	73,500	100,600
Per capita rural income	51,400	39,400

Source: State Human Development Report (2003), Indicus Analytics: Market Skyline of India (2011-12)

7.3.1 Agriculture

There are equal numbers of workers and non workers in the district, with a significant portion of the work force engaged in marginal activity, hinting at high levels of seasonal unemployment. Although the proportion of work force engaged in agricultural activity is the highest, it is low as compared to other similar districts in the state.

About 53% of the total sown area is under food crops. Around 42% of this sown area is under cereals, 8% under pulses and 16% under fruits and vegetables. Non food crops include sugarcane, cotton, oil seeds and tobacco. About 47% of the total sown area is under non-food crops. Over 30% of this area goes to sugarcane while oil seeds have a share of 33% of the remaining sown area. Yield is higher than the state for all crops except mangos.

Table 7-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	63,363	42.10%
Pulses	12,834	8.53%
Condiments	9,723	6.46%
Fruits and vegetables	24,574	16.33%
Other	40,029	26.59%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	39,766	30.36%
Cotton	2,530	1.93%
Oil Seeds	43,171	32.96%
Tobacco	3,168	2.42%
Other	42,337	32.33%
Total Area under Food Crops	**150,523**	**53.47%**
Total Area under Non Food- Crops	**130,972**	**46.53%**

Source: Tamil Nadu Crop Report (2011-12)

Table 7-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield for Erode	Yield for Tamil Nadu
Cereals	15,212	12,136
Pulses	3,452	2,763
Sugarcane	101	101
Condiments	34,475	32,440
Vegetables	187,837	164,422
Mango	1,332	4,795
Cotton	745	368
Tobacco	1,586	1,524
Oil seeds	16,216	16,484

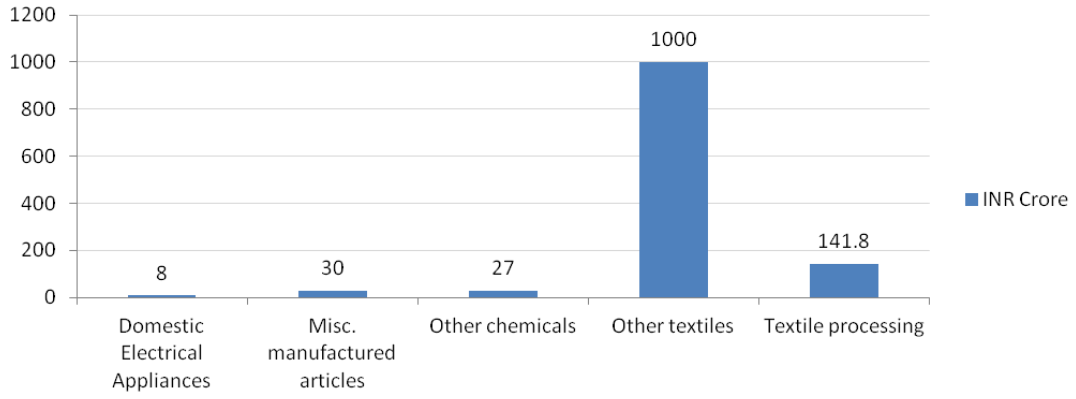
Source: Tamil Nadu Crop Report (2011-12)

7.3.2 Industry

There are 27 major industrial units in Erode, comprising textiles, coir products, rice mills, edible oils and engineering components. Together they employ over 4.83 lakh people. There are also 16 medium scale industrial units and over 20,000 small and cottage industrial units. These units are mainly clustered around the three SIDCO estates and one SIPCOT estate in the district. Capex data indicates further investments, amounting to more than INR 200 crore being channeled into textiles, chemicals and component manufacturing sub sectors.

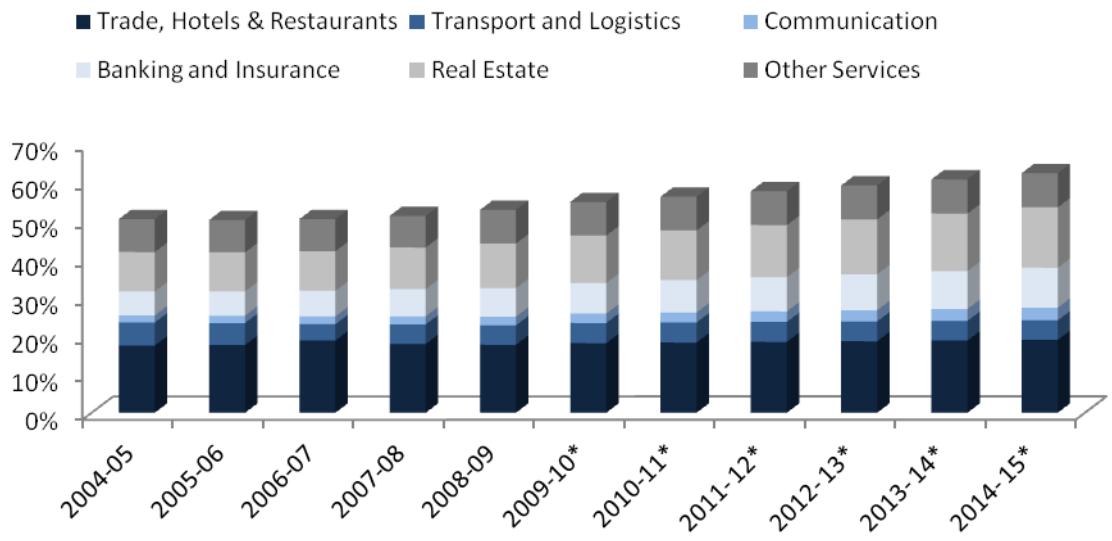
The large scale industries have a combined turnover of INR 1046.2 crore, and provide employment to about 7000 people, while the medium scale industries have a turnover of INR 279.8 crore and provide employment to approximately 2500 people. The small and cottage industries on the other hand, have lower turnovers, but employ 20,000 workers, far more than large and medium scale industries. This is indicative of high levels of automation in the large and medium scale units leading to high productivity, and higher labor intensities in small scale units, leading to lower productivity. Lack of skilled labor might be one of the major explanatory factors for high levels of technology intensity observed in the large and small scale industries. So, although these industries contribute to the district's economy by way of taxes, their economic growth has not led to a proportionate economic growth of the district. On the other hand, the continued low levels of productivity observed in small and cottage industries might well be associated with shortages in skilled human resource availability and a consequent inability to apply the latest production techniques.

Figure 7.3: Investments in INR crore



7.3.3 Services

Figure 7.4: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The service sector contributes to 50% of district GDP in 2008-09. This is expected to further rise to 62% in 2014-15. The rapid industrialization in the district has had a positive impact on per capita incomes which has inturn led to a real estate boom. Real estate is the fastest growing sector in the district and is expected to contribute to almost 16% of district GDP in 2014-15.

Owing to the large scale industrial development and the establishment of various industrial estates and SEZs, the district's transport infrastructure has developed rapidly and employs 3.14 lakh people. There are 424.883 km worth of national and state highways and 7649 km worth of other panchayat and municipal roads, enhancing inter and intra district connectivity. Ample availability of railway services in the form of 90 km worth of route length, and 11 railway stations has provided an additional boost to the transport infrastructure in the district. Health services however, fare poorly in the district. Although there are 21 hospitals and 353 health care units, the bed strength is only 1,170 while the population to doctor ratio is dismal, with one doctor available for every 12,148 persons in the district.

7.4 State of Education

In spite of the reasonably high development observed in the district, the overall literacy figure remains low, at 73%. There has been some progress on the literacy front over the past decade though, with female literacy rising from 55.2% in 2001 to 65.07% in 2011. Male literacy too, increased by about 5%, from 75.3% in 2001 to 80.81% in 2011. Like Dindigul, Erode is characterized by a significant gender literacy gap; although this gap has decreased by 5% over the last decade.

Table 7-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	55.20	65.07	0.18
Male	75.30	80.81	0.07

Source: Census 2001, Census 2011(Provisional)

There are 1,526 primary schools, 328 upper primary schools, 194 secondary and 215 higher secondary schools in the district. Net enrollment ratios are high for the primary level, at nearly 100%, but drop off to 98% for the upper primary level. Dropout rates are high at the primary level at 4.3% and at the upper primary level at 8%.

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 1,02,764, while enrolment in schools that had primary and upper primary classes was 81,818. Enrolment in upper primary schools was 146 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 79,784, while enrolment in schools with upper primary and secondary/ higher secondary classes was 71,725.

Table 7-7: Education Profile (2010-11)

Educational Statistics	Units in Erode	Units in Tamil Nadu
Primary	1526	33,909
Upper primary	328	8,552
Secondary	194	4,436
Higher secondary	215	4,632
Primary age population		6,420,747
NER – primary (%)	99.22	98
NER - Upper primary (%)	98.24	98
Dropout rate- Primary (%)	4.38	3.81
Dropout rate - Upper primary (%)	8.25	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12),

There are 15 engineering colleges and 19 arts and science college in the district. There is a medical college, four nursing colleges, five pharmacy colleges and two other medical colleges. There are 11 teacher training colleges and 12 polytechnics. The combined capacity of all the ITIs and ITCs in the district is 4,389. The details of the major ITIs in the district are given in the appendix.

Table 7-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	15
Arts and sciences	19
Management	3
Medical	1
Dental	0
Nursing	4
Pharmacy	5
Other medical	2
Teacher training and education	11
Hospitality	2
Fashion technology	0
Polytechnics	12
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

7.5 Human Resource Availability

The current work force is estimated to be 9.44 lakh, which is estimated to grow to 12.32 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 1.35 lakh and in 2017-22, the incremental availability is estimated to be 1.52 lakh.

Table 7-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	2,293	1,516	967	944		
2017	2,566	1,690	1,104	1,080	135	
2022	2,875	1,882	1,258	1,232		152

Source: Athena Research

Table 7-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	90	7	39	135
2017-22	143	8	1	152

Source: Athena Research

7.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the unorganized sector, construction and textiles. BFSI, transportation and logistics, retail and food processing are expected to see a moderate increase in human resource requirements. The human resource requirement in the agriculture sector is expected to decline by 40,000 in 2012-17 and 35,000 in 2017-22. Automobile and IT will also show significant growth, as the sector as a whole grows in Tamil Nadu.

Table 7-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-33	-1	-6	**-40**	-29	-1	-5	**-35**
Automobile	3	4	1	**8**	5	7	2	**14**
Chemicals and Pharmaceuticals	1	1	2	**0**	1	1	2	**0**
Electronics Hardware	0	0	0	**1**	0	0	1	**1**
Food Processing	5	0	1	**7**	7	1	2	**10**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	1	0	0	**2**	2	1	0	**2**
Handlooms & Handicrafts	-3	0	0	**-4**	-3	0	0	**-3**
Leather	4	1	1	**6**	5	2	2	**9**
Textiles	15	3	3	**20**	21	4	5	**30**
BFSI	0	1	4	**5**	0	2	6	**8**
Construction	21	4	2	**27**	47	9	4	**60**
Education	0	0	2	**2**	0	0	2	**3**
Healthcare	0	1	2	**4**	0	1	2	**4**
IT and ITES	0	1	8	**8**	0	1	10	**11**
Media & Entertainment	0	1	1	**2**	0	1	3	**4**
Organized Retail	4	1	3	**7**	7	1	5	**13**
Real Estate	0	0	2	**2**	0	0	2	**3**
Tourism & Travel	0	0	0	**0**	0	0	0	**0**
Transportation & Logistics	2	0	0	**3**	2	1	0	**3**
Unorganized (excluding Agriculture and Construction)	41	21	29	**91**	48	31	37	**117**
TOTAL	**61**	**40**	**56**	**152**	**113**	**63**	**80**	**252**

7.7 Skill Gap

The skill gap is at the semi skilled level at 33,000 in 2012-17 and 55,000 in 2017-22. There is estimated to be an excess availability of 29,000 at the unskilled level in 2012-17, which will grow to 30,000 in 2017-22, partly due to inward migration of unskilled resources from other states. However, with increasing requirements for skilled human resources in the service sectors and the outward migration of skilled human resources, the gap at the skilled level is expected to grow significantly in 2017-22.

Table 7-12: Skill Gap in 000s

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	61	40	56	**152**	113	63	80	**252**
Incremental Human Resource Availability	90	7	39	**135**	143	8	1	**152**
Skill Gap	**-29**	**33**	**17**	**17**	**-30**	**55**	**79**	**100**

Note: Figures in negative indicate excess supply
Source: Athena Research

The pattern of skill gap suggests sustained increase in the requirement for semi skilled and skilled human resources with the growth of traditional sectors like textiles and food processing. Service sectors are expected to become more formalized and substitute unskilled resources with skilled resources over time.

Qualitative Skill Gaps

Lack of diversity in vocational skills

There are a few ITIs set up near industrial estates, but they do not receive many applications. These vocational education institutions offer courses in a limited number of trades, which is perceived as an important factor contributing towards low enrolment. Trades related to textiles and food processing, may be more conducive for the economic growth of the district given the industrial composition.

Poor access to quality trainers

The lack of trainers is a problem for job-seekers, industry and skill training institutes. Quality trainers are difficult to identify because there is no standardized certification method. Further, owing to the poor remuneration, not many ITI/polytechnic graduates are willing to work as trainers.

Government freebies, a disincentive to skill building

Government schemes that give away items to the people for free are diluting the incentive to work, particularly in rural areas. People are seen to sell these items and make enough money and do not seem interested in devoting a great deal of energy towards building skills.

7.8 Youth Aspirations

Table 7-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	IT/ITES, Automobile	Food Processing, Construction
	Low	Education, Electronics Hardware	Chemicals, Furniture

Source: Athena Research

Unwillingness to Migrate

Most of youth interviewed from the district displayed lack of interest to migrate to locations away from their homes at the lower skill level, within the district. Resistance to migration and travel makes recruitment and retention of employees difficult. Often, recruiting from a vocational training institute is a complex process because very few candidates are willing to migrate to other parts of the district for work. However, this may be due to low compensation, since skilled youth are willing to migrate to other districts or states for employment.

The unwillingness to migrate to another part of the district for work, combined with high attrition, makes labour management very difficult for industries.

Unhealthy attitude towards work

There is a significant shortage of semi-skilled workers and middle managers in the district, particularly in the textile sector. Hiring ITI graduates is often perceived as a better option than hiring diploma-holders, because the former they do not have any preconceived notions, possess a healthier attitude towards work and are more willing to perform operator level jobs. On the contrary diploma holders often seem to want desk jobs, project development work or engineering jobs, which they do not have the skill or the knowledge to perform.

Low awareness on the benefits of Vocational Training

Vocational education is yet to be accepted as a viable alternative to formal education. Students do have academic aspirations in the district, but since a diploma is not treated at par with a degree, and it is difficult to transition from vocational education to formal education, very few students opt for the former.

Youth do not view traditional sectors like agriculture and handlooms favorably and do not wish to work in the unorganized sector. Youth view high technology industrial sectors like IT/ITES most favorably. They also view sectors like tourism and travel favorably. However, sectors like gems and jewellery, agriculture and leather are viewed unfavorably.

7.9 Recommendations

7.9.1 State Government

Promoting Skill Development

The state and local government should focus on promoting vocational education as a viable alternative to formal education. One of the major causes for outward migration is the unavailability of suitable employment. Mismatch between job profile and education are a major cause for discontent. Balanced skill development across skill levels can address this issue.

Action Plan:

a. Student mobilization should be a major priority for the district. At the same time, high performing students at the 12th grade should be encouraged with scholarships and incentives to take up tertiary education to bridge the gap at the skilled level.
b. Media campaigns to promote the dignity of labor and the employability through skill training. Street plays may be staged in backward blocks to ensure better reach.
c. Provide career counseling, along with information about skill development, at the school and college level is essential to facilitate better course and job match for the youth.
d. Make information regarding skill training available through district offices and employment exchanges will also facilitate appropriate career choices.

Establishment of a 'Skills Panchayat'

There is mismatch between requirement and availability of skilled human resource in the district, primarily due to the presence of high information asymmetries and the inability of small firms to recruit from vocational institutes. Only large firms recruit from ITIs and other education institutes. For smaller firms, conducting campus recruitments is not a viable option since their labour requirements are small and sporadic. Additionally, students who have completed diploma courses expect higher compensation even if their skill level does not match the job requirements and small firms are generally not in a position to meet such demands. Therefore, smaller firms find it difficult to source workers, and have to do so through informal methods.

Meanwhile, a large number of youth graduating out of ITIs and other vocational institutes join the unemployed labor pool, on account of lack of information about the various job opportunities that are available, especially in the MSME sector. Thus, the absence of a mechanism to help match requirements and availability of human resources is seen to create negative externalities.

Action Plan:

a. Set up a 'Skills Panchayat' within the framework of the District Skill Development Council in the district vested with the responsibility to:
    a. Aggregate data on the apprenticeship vacancies and employment opportunities in the district and display this information on a dedicated portal that can be accessed by students
    b. Undertake counselling for students graduating from ITIs and other vocational training institutes
    c. Organize central campus placements for registered skill training institutes
    d. Prepare students for job interviews
    e. Organize guest lectures and industrial visits
    f. Track the employment status of all students for a period of at least 6 months after graduation
b. The Skills Panchayat must consist of personnel from the district administration and local industries and should act as an aggregator of demand and supply in the region

7.9.2 Industry

Information on Labour Needs

The lack of adequate information on industry requirements is a pertinent factor contributing to low demand for skills and faulty educational choices. The youth in the district do not seem to have clarity on the skill requirements of industry located within the district.

Action Plan:

a. Co-ordinate with employment exchanges/ local district councils and publish the data on the employment requirements in the industry, along with a clear description of the job requirements and the necessary qualifications
b. Promote the creation of a central database which matches information on skill levels to compensation and presents a list of potential employers in the state for a certain skill type – this may be taken by industry associations in the state
c. Participate in campus recruitments at vocational training institutes in the vicinity to establish a strong connection between employment and skill acquisition
d. Undertake frequent interaction with students at vocational education institutes through projects, lectures or visits

Increase desirability of jobs in manufacturing sectors through improved work environment

The poor working conditions prevalent in most industries employing vocational labour is among the key factors contributing to a low preference for vocational education among the district youth. The poor working conditions seem to lower the self-esteem of people employed and lower employee morale. The poor level of health and safety standards in firms is another key concern.

Action Plan:

a. Efforts are to be made by the industry heads to improve the working conditions to suit the ILO conventions on safety, health and welfare to meet the needs, aspirations and requirements of employees– Industry Association can play a crucial role here to create awareness on the need for improvements in work conditions
b. Emphasize on the motivational aspect of working conditions also must be emphasized on through specific initiatives such as an employee feedback mechanism, which may provide employees with a forum to present their concerns
c. Introduce training and induction period for workers at all skill levels
    - Various educational and training programmes for building awareness of rights, duties and liabilities amongst the workers in relation to working condition regulations must be made.

7.9.3 Training Providers

Focus on Women

Female literacy rates in the district stand at 65 %, which is much lower than that of males (80%), necessitating gender specific polices. There is a need to focus on gender sensitization at educational institutes as well as the work place.

a. Self Help Group models have demonstrated successful results in a number of backward districts. It is possible to leverage local level information channels and networks to disseminate information regarding skill development.
b. Training for small industries and the unorganized sector may also be more financially viable under such a model, given the high expected growth of the sector.
c. Female trainers and institutes for women may encourage more girls to acquire skills.
d. Employers must be encouraged to conduct gender sensitization workshops and set up a grievance redressal mechanism for female employees

Introduction of a dual apprenticeship model

Apprenticeship is designed to help students acquire the much required practical experience and remains the key channel of connecting them with industry. In the district, apprenticeship has remained a nominal feature, with the students acquiring little or practical knowledge post completion of their course period. Further students who are employed as apprentices by the industry are rarely absorbed into the firm as full time employees, owing to the lack of practical experience built into their course curriculum and the high costs associated with training them on the job. Thus there is an urgent need to strengthen the practical component of training by introducing a dual apprenticeship model, wherein the student is expected to acquire industry experience both during the course and after completion.

a. Introduce a two month internship with local industries, embedded as a part of the course curriculum for industries such as automobile, electronics and textiles
b. Enter into an MOU with other local ITIs to ensure a continuous supply of trainees to industries
c. Create a student tracking system to follow the status of apprentices employed from the institute

7.9.4 NSDC

Create a pro-skills environment

Most of the youth in the district continue to perceive ‘skill acquisition’ poorly and consider enrolling in an ITI/ITC in the region as a last resort. Skills institutes in the district also suffer from a high drop-out rate owing to the perceived lack of benefits in acquiring a skill certificate.

Action Plan:

a. Undertake campaigns informing the youth about the benefits of acquiring vocational skills
b. Hold/ facilitate skill competitions and grant awards to improve the way skill acquisition if being perceived by students and create a pro-skills culture and attitude
c. Identify high-performing and motivated students and provide scholarships
d. Awareness campaigns at the village level in collaboration with NGOs and Community based organizations, with special emphasis on educating parents about the benefits of skill acquisition

Development of Skill Index – Definition of skills

There are a number of skill providers in the district, who display varying levels of quality and rigor. Thus, graduates passing out from a single trade display varying levels of skills based on the nature of institutes that they graduate from. This is particularly a problem in sectors such as IT and automobile. There is thus a need to define and standardize the tasks a person who has attained a certain skill level should be able to perform.

Action Plan:

a. Define and standardize the tasks a person who has attained a certain skill level should be able to perform for highly technical sectors such as automobile, IT and electronics hardware
b. Develop a skill index, which integrates and measures the overall skill prowess of the individual and enable training providers to evaluate students along this index to ensure comparability of qualifications
c. Certify the individual displaying the prescribed level of skill through SSCs

Capacity Creation

Capacity creation may be undertaken in the industrialized pockets of the district for growing service sector trades such as construction, retail, BFSI and transportation and logistics.

Action Plan:

a. Initiatives must focus on the semi-skilled level, since the district has high capacity at the skilled level
b. Qualitative gaps are more pronounced within the district. Comparability of certifications provided by different training providers must be ensured through conformity to SSC guidelines.
c. Service sector courses should be encouraged to build strong industry linkages, use existing infrastructure and provide short-term courses to minimize the opportunity cost from loss of employment.

8 Kancheepuram

8.1 Overview

Kancheepuram lies along the north east coast of Tamil Nadu, and is bordered by Vellore and Tiruvannamalai in the west, Thiruvallur and Chennai in the north and Viluppuram in the south. It is the 11th largest district by area and the most populous after Chennai. The district is divided into 4 revenue divisions, 10 taluks and 13 blocks. There are a total of 10 corporations, 24 town panchayats, 1137 revenue villages and 648 panchayat villages.

Table 8-1: Basic Information (2010-11)

District Information	Kancheepuram	Tamil Nadu
Number of inhabited villages	1035	15,400
Area (Sq Km)	4,780	127,905
% of state area	3.74	100
Area rank	11	-
Revenue divisions	4	-
Taluks	10	-
Blocks	13	-
Corporation & municipalities	10	-
Town panchayats	24	-
Revenue villages	1137	-
Panchayat Villages	648	-

Source: District Statistical Handbook (2010-11)

8.2 Demographic Profile

A highly populated district, Kancheepuram constitutes about 5.5% of the state's population. The growth rate is above the state average at 2.01% which suggests that the district is set to be even more densely populated in the future. With over 64% of the population living in urban centres, the district is highly urbanized. The population density stood at 835 people per square kilometers as per the provisional figures of the 2011 census, much above the state average. The sex ratio is lower than the state average at 995 females per 1000 males. Similarly, despite more than 63% of the total population being of working age, the worker participation rate is only about 28%.

Per capita incomes are significantly higher than the state average for both rural and urban population. Human development indicators are amongst the highest in the state at 0.712 and 0.710 for HDI and GDI respectively.

Table 8-2: Demographic Indicators (2011)

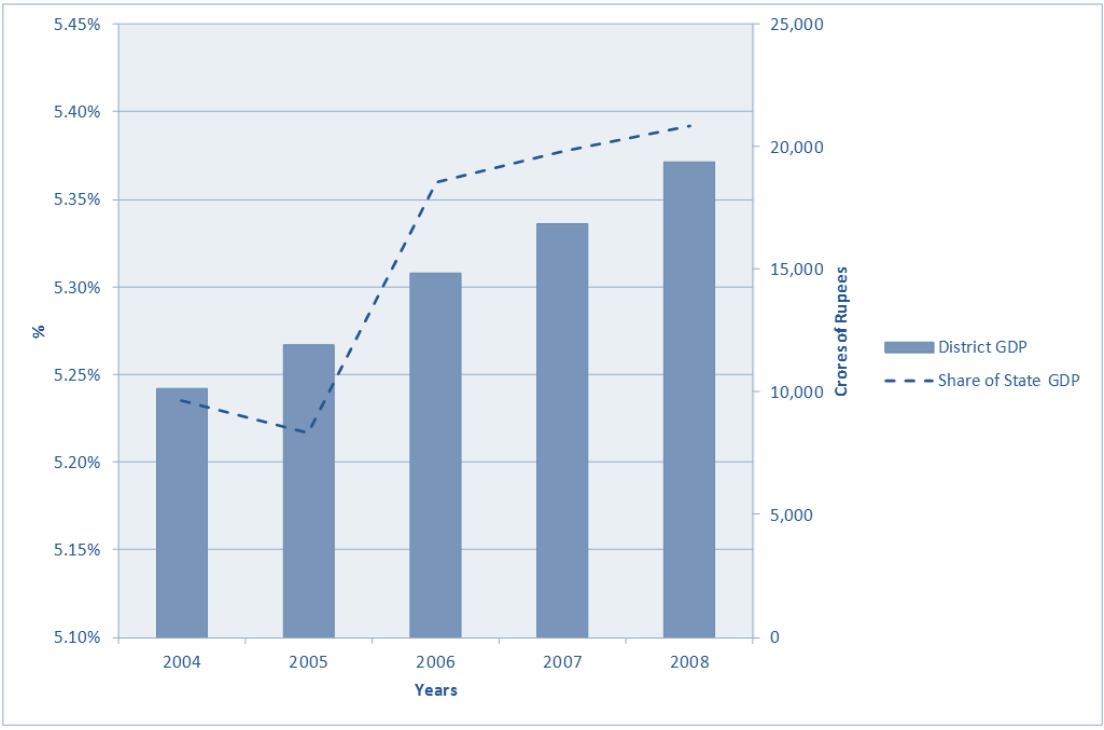
Population	Kancheepuram	Tamil Nadu
Population	3,990,897	72,138,958
Share of state population (in %)	6	100
Population density (per sq. km.)	834.93	564
Urban population percentage	63.59	48.45
Total population annual growth rate (in %)	2.01	2
Urban population	2,537,825	34,949,729
Sex ratio (number of females per 1000 males)	985	995

Source: Census 2011 (Provisional)

8.3 Economic Profile

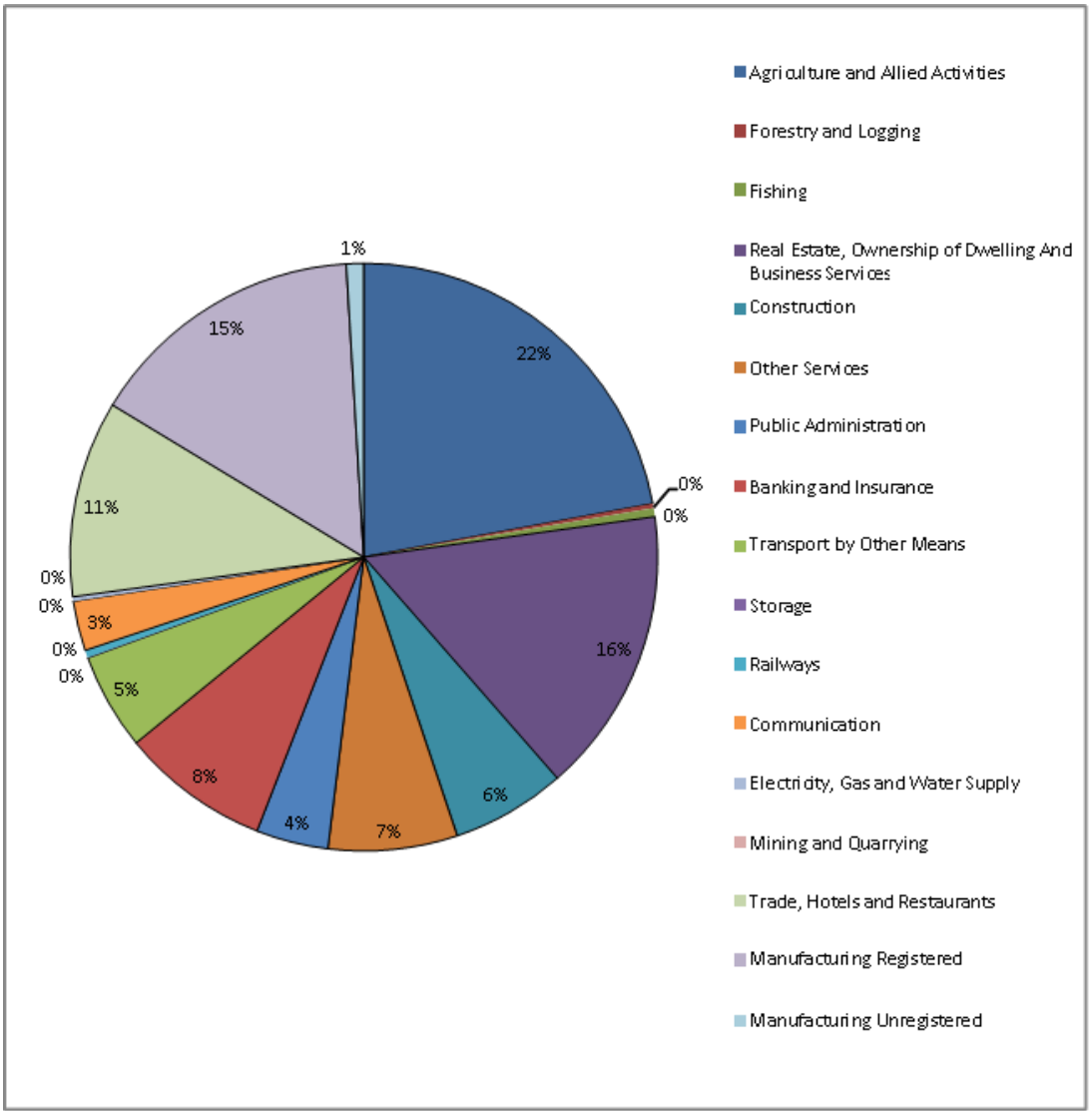
Kancheepuram is a major contributor to the state economy, accounting for over 5% of the state GDP. The share of the district has steadily grown over time towards 6%.The per capita income is high and both urban and rural incomes are comfortably above state levels. Agriculture is the predominant occupation of a majority of the work force. At the same time, proximity to Chennai has seen the emergence of heavy industrialization, with many large automobile, electronic and other manufacturers setting up shop here. Kancheepuram is historically significant to Tamil Nadu and is a major tourist hub, while IT services have also opened offices in the capital city of the same name.

Figure 8.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Figure 8.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 8-3: Per Capita Income (2011-12)

Human Development Indicators	Kancheepuram	Tamil Nadu
Per capita urban income	155,200	100,600
Per capita rural income	48,100	39,400

Source: State Human Development Report (2003), Indicus Analytics: Market Skyline of India (2011-12)

8.3.1 Agriculture

Nearly 47% of the working population in Kancheepuram is engaged in agriculture and sown agricultural land occupies over 29% of the land area. With the proportion of cultivable wastes, pastures and forest land being limited, it is likely that capacity building in agriculture in this district will have to be via technology inputs rather than expansion. The major crops grown are paddy, pulses, sugarcane and groundnut.

Around 90% of the total sown area is under cereals, 1% under pulses and 5% under fruits and vegetables. Non food crops include sugarcane, cotton, oil seeds and tobacco. About 65% of the area under non food crops goes to oil seeds, while sugarcane has a share of 11% of the remaining sown area. Around 22% of the sown area is under other non food crops. Yield is higher than the state for sugarcane and cotton, while it is lower than the state for cereals, pulses, condiments, fruits and vegetables and oil seeds.

Table 8-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	98,458	89.63%
Pulses	1,471	1.34%
Condiments	208	0.19%
Fruits and vegetables	5,954	5.42%
Other	3,761	3.42%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	3,741	11.29%
Cotton	29	0.09%
Oil Seeds	21,829	65.87%
Tobacco	0	0.00%
Other	7,543	22.76%
Total Area under Food Crops	**109,852**	**76.82%**
Total Area under Non Food- Crops	**33,142**	**23.18%**

Source: Tamil Nadu Crop Report (2011-12)

Table 8-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield for Kancheepuram	Yield for Tamil Nadu
Cereals	9,106	12,136
Pulses	2,641	2,763
Sugarcane	102	101
Condiments	12,581	32,440
Vegetables	64,949	164,422
Mango	1,825	4,795
Cotton	425	368
Tobacco	0	1,524
Oil seeds	15,430	16,484

Source: Tamil Nadu Crop Report (2011-12)

8.3.2 Industry

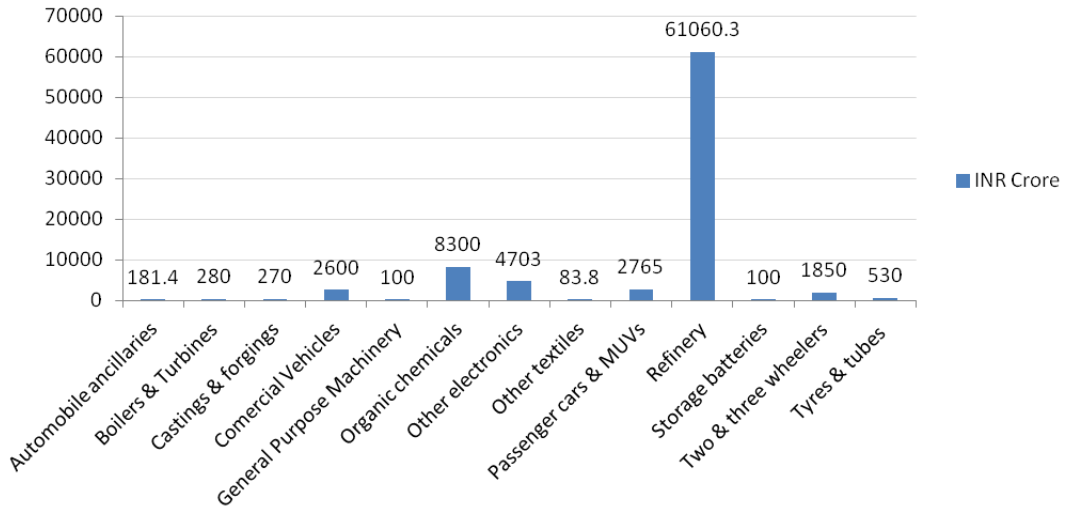
Proximity to Chennai and its strategic location along the eastern sea board of the country have made Kancheepuram an attractive destination for industry. Nearly 1.58 lakh people are employed in this sector. The district is home to companies like Hyundai, Ford, Mitsubishi, Nokia, Samsung, Dell and Saint Gobain. Hyundai and Saint Gobain have large manufacturing plants at Sriperumbudur while Ford has a plant at Maraimalainagar. There are a large number of industrial estates and SEZs in the district, engaged in the production of a vast variety of high tech goods.

Kancheepuram also has a large base of small scale industries, which are mostly clustered around the St. Thomas Mount, Kancheepuram and Kattankulathur blocks. The primary focus of these industries is in silk textiles and food processing; the historic occupation of the industrial class in Kancheepuram is in textiles. The first garment makers were supposed to have settled in this area 400 years ago, and the tradition that has flourished since then produces the finest silk sarees in India. Around 75% of the working population of the city of Kancheepuram is occupied in the silk garments sector. The district is not a major cultivator of silk; therefore, large parts of the workforce are purely artisans. The majority of factory workers are engaged in the manufacture of apparel, tanning and production of leather goods. Machinery, metals and chemicals also engage a more moderate number of the workforce.

Agro based industries focusing on the large livestock population and robust fishing industry also show much scope for growth, targeted at not only internal demand, but also export. Kattankulathur, St. Thomas Mount, Kundrathur and Walajabad blocks show potential to become centres of food processing.

Capex data on recent investments in the region show that automobile and organic chemicals account for a large proportion of investments, besides the refinery. Ancillary components manufacturers like boilers, castings, tubes, etc. also show strong investment.

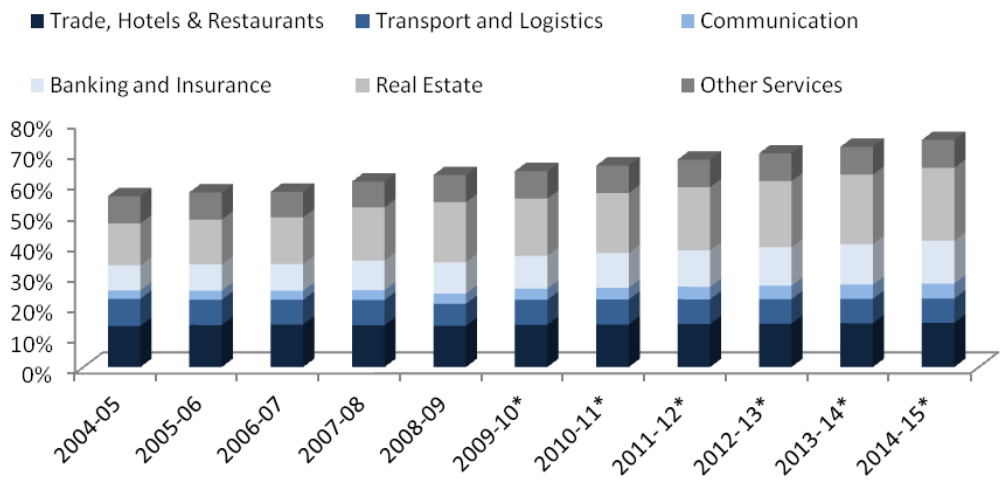
Figure 8.3: Investments in INR Crore



Source: Capex, CMIE (2011-12)

8.3.3 Services

Figure 8.4: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The service sector is expected to play a critical role in the district and is set to contribute to almost 74% of the district GDP in 2014-15. This growth is expected to be primarily driven by the real estate sector. By virtue of the large investments in IT and rising per capita incomes, the district is witnessing a real estate boom, with the real estate sector set to contribute to almost a quarter of the district GDP in 2014-15.

The services sector employs 7.95 lakh people in the district. Kancheepuram is one of the seven holy cities of India and is known as the land of a thousand temples. It is a place of much cultural and religious significance and is as such a major centre for tourism. In the period 2000-06, the number of domestic tourist arrivals in key

centres in the district has gone up from less than 15 lakh to more than 25 lakh. Recent years have shown a steep increase in the growth rate of domestic arrivals. More strikingly, the number of foreign tourist arrivals in the district has steadily risen over the same period to almost two lakh . The district also hosts several large IT firms like TCS, Wipro, Infosys, and Cognizant, situated along the IT highway on the east coast which leads up to Chennai.

Kancheepuram has good health infrastructure with about 32 hospitals with bed strength of 1857. There is also a healthy ratio of doctors to attendant staff. Banking and financial services are densely distributed in the district, with over 161 government bank branches, 36 private bank branches and 29 co-operative bank branches.

The transport infrastructure is well developed, in line with a heavily industrialized area, with a thick network of roads and railways. More than 2000 kilometers of state highways run through the district as well as 240 kilometers of national highways. Rail networks are also healthy, with about 221 kilometers in route length and 36 railway stations spread all over the district.

8.4 State of Education

The literacy rate is high at 85% which is above both state and national levels. Overall, the literacy has shown an increasing trend, with female literacy showing a dramatic increase from 68% to about 80% during 2001-2011, while male literacy rose from 84.17% to 90.34% in the same period. Net enrolment ratios were slightly below the state average of 98% at 97.23% and 97.92% for primary and upper primary respectively.

Table 8-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	68.80	80.17	0.17
Male	84.70	90.34	0.07

Source: Census 2001, Census 2011(Provisional)

There are 495 primary schools, 181 upper primary schools, 82 secondary and 96 higher secondary schools in the district. The net enrolment ratio is higher for primary schools as opposed to upper primary schools; however the dropout rates for upper primary schools are lower.

Table 8-7: Education Profile (2010-11)

Educational Statistics	Units in Kancheepuram	Units in Tamil Nadu
Primary	1149	33,909
Upper primary	388	8,552
Secondary	242	4,436
Higher secondary	262	4,632
NER – Primary (%)	97.23	98
NER - Upper primary (%)	97.92	98
Dropout rate- Primary (%)	3.61	3.81
Dropout rate - Upper primary (%)	7.04	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 1,27,515, while enrolment in schools that had primary and upper

primary classes was 96,018. Enrolment in upper primary schools was 252 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 1,78,897, while enrolment in schools with upper primary and secondary/ higher secondary classes was 86,699.

Table 8-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	40
Arts and sciences	10
Management	2
Medical	0
Dental	1
Nursing	0
Pharmacy	5
Other medical	2
Teacher training and education	0
Hospitality	0
Fashion technology	1
Polytechnics	11
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

Kancheepuram has four universities, ten arts and sciences colleges and two medical colleges. Technical education in the district is moderately represented - there are 40 engineering colleges, 37 ITIs and 11 polytechnics. The combined capacity of all the ITIs and ITCs in the district is 5,124.

8.5 Human Resource Availability

The current work force is estimated to be 16.88 lakh, which is estimated to grow to 25.53 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 4.01 lakh and in 2017-22, the incremental availability is estimated to be 4.64 lakh.

Table 8-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	4,098	2,709	1,729	1,688		
2017	4,926	3,247	2,135	2,089	401	
2022	5,893	3,863	2,605	2,553		464

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level due to the high inward migration in the district, while the lowest incremental availability is estimated at the semi-skilled level. The strong preference for formal education within the district will also lead to a relatively high availability of skilled human resources.

Table 8-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	280	13	108	401
2017-22	237	16	211	464

Source: Athena Research

8.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the construction, automobile, tourism and travel, IT/ITES and textiles. The human resource requirement in the agriculture sector is expected to decline by 36,000 in 2012-17 and 32,000 in 2017-22.

The long term growth sectors for Kancheepuram appear to be auto and auto components and IT/ITES. The IT/ITES sector is already well established in the district and is expected to grow rapidly. The auto and auto components and electronic hardware industries will require an enabling environment to grow, and are expected to expand rapidly over a span of several years. Traditional industries like leather are expected to continue robust growth, though there will be shifts in the nature of products produced as competing districts will erode the cost based competitiveness of these industries necessitating higher levels of technology and variety of products.

Table 8-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-30	-1	-5	**-36**	-26	-1	-5	**-32**
Automobile	13	17	6	**35**	22	29	10	**61**
Chemicals and Pharmaceuticals	6	8	12	**0**	5	8	12	**0**
Electronics Hardware	0	1	2	**4**	1	2	4	**6**
Food Processing	1	0	0	**2**	2	0	0	**3**
Furniture	1	0	0	**1**	1	0	0	**1**
Gems & Jewellery	1	0	0	**1**	1	0	0	**2**
Handlooms & Handicrafts	-1	0	0	**-1**	-1	0	0	**-1**
Leather	5	2	2	**9**	8	3	3	**13**
Textiles	12	2	3	**17**	17	3	4	**24**
BFSI	0	3	8	**11**	0	4	11	**16**
Construction	52	10	5	**67**	115	22	10	**147**
Education	0	1	6	**7**	0	1	7	**8**
Healthcare	1	3	5	**9**	1	3	5	**8**
IT and ITES	0	3	34	**36**	0	3	45	**49**
Media & Entertainment	1	3	5	**8**	1	5	9	**15**
Organized Retail	4	1	3	**8**	7	2	5	**14**
Real Estate	0	1	4	**5**	0	1	5	**7**
Tourism & Travel	9	32	28	**69**	14	55	49	**117**
Transportation & Logistics	4	1	1	**6**	4	1	1	**6**
Unorganized (excluding Agriculture and Construction)	73	37	51	**160**	85	55	66	**207**
TOTAL	**152**	**122**	**168**	**417**	**257**	**196**	**242**	**671**

Source: Athena Research

8.7 Skill Gap

The largest skill gap is at the semi skilled level at 1.09 lakh in 2012-17 and 1.8 lakh in 2017-22. There is estimated to be an excess availability of human resources at the unskilled level in 2012-17, primarily on account of high inward migration. However, with population growth stabilizing and a large number of youth opting for formal education, this gap is expected to be neutralized by 2022. At the skilled level, the gap is estimated to be 60,000 in 2012-17 and 31,000 in 2017-22.

Table 8-12: Skill Gap in 000's

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	152	122	168	**417**	257	196	242	**671**
Incremental Human Resource Availability	280	13	108	**401**	237	16	211	**464**
Skill Gap	**-128**	**109**	**60**	**16**	**20**	**180**	**31**	**207**

Note: Figures in negative indicate excess supply
Source: Athena Research

The pattern of skill gap suggests sustained increase in the requirement for skilled resources with the growth of the IT/ITES and BFSI sector. In this period, traditional industries like leather will employ a large number of semi-skilled workers and improve their production processes. This trend will continue in the next period, as employment grows with an expanding industry. The combined demand of IT/ITES and auto and auto components industries, along with new sectors like electronic hardware, will see a surge in the demand for semi skilled and skilled labour, leading to a large deficit in 2022.

Qualitative Skill Gaps

Low industry training provider collaboration

A large number of automobile firms and IT firms are clustered around Sriperumbudur. Despite the presence of these various industries, the interaction between the vocational training providers and the industries have remained minimal. As a consequence the curriculum delivered in these institutes is not relevant to industry needs and the graduates from these institutes are not considered industry-ready.

High variation in quality of workforce

Despite the rising industrialization and urbanization of the district, the district has not seen uniform development. The less developed areas have poor access to skilling and employment opportunities and the quality and intensity of skill acquisition is seen to vary widely within the district. More even development is required to ensure that the youth belonging to more backward regions of the district have adequate information and aspire to become more skilled.

8.8 Youth Aspirations

Table 8-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	**Low**
Employment Potential	**High**	IT, ITES, automobile	Leather, Construction
	Low	Electronic hardware	Agriculture, Handloom

Source: Athena Research

Low awareness on the benefits of skill development

The district is in a state of flux due to the aspirations of the people. Most of the people gain an engineering education and expect white collar jobs, which are not available. The proportion of people who drop out after Class 10 or Class 12 are either unaware about these opportunities or are unwilling to pay for private ITI education. So there are those who are completely unskilled and willing to take on a blue collar job, but cannot do so on account of their lack of skills; or there are highly skilled people, looking for white collar jobs, but being offered blue collar jobs instead.

Preference for White Collar jobs

The youth in the district tend to prefer white collar jobs, which are quite difficult to find in the district. There is a mismatch between the aspirations of the local population and the kind jobs being created. Youth view high technology industrial sectors like IT/ITES and auto and auto components most favorably. They also view sectors like textiles and electronic hardware favorably. However, sectors like leather and construction are not preferred by most students.

There are many blue collar jobs available throughout the year. But there are not many takers for these jobs among the locals. Typically, these blue collar jobs are taken up by migrant labourers from Bihar, West Bengal, Orissa and Bangladesh. These jobs require low levels of skills, which suit the migrant workers. The wages offered to them are also significantly higher than what they would otherwise earn.

High information asymmetry

There are vocational training institutes in the district, but these institutes have very low enrolment rates. A majority of the jobs being created in the district are blue collar jobs in the automobile manufacturing companies, which require low skill levels. Most of the people are unaware about these opportunities, and there is plenty of scope to create awareness in this regard.

Recommendations

8.8.1 State Government

Registration of skill training providers

Kancheepuram has a large number of private skill training providers. With the exception of ITIs and ITCs, which are registered with the state, most skill development institutes remain unregistered and unregulated. This has led to a high degree of variation in the quality of training provided, particularly in technical skills for sectors such as engineering, electronics, IT, automobile and textiles. There is a need to identify and register existing skill training providers to avoid duplication of effort and prevent unscrupulous players from exploiting students.

Action Plan:

a. Undertake a detailed survey and develop a database of training providers
b. Collate relevant data regarding number of years since establishment, number of students trained, nature of training provided, fee structure and placement statistics and make it available online
c. Identify a list of institutions in the district that do not meet the criteria and provide them with a moratorium period to comply with the regulatory and performance criteria defined
d. Develop evaluation guidelines for both theory and practicals for skill training providers and uniform course names based on modules offered

Promote greater interaction between formal and vocational education streams

The failure of vocational education courses at various levels to attract a substantial number of students has been attributed to the inability of these courses to provide employable skills, vertical mobility and technical competencies in terms of relevance and quality. Further, due to the changing nature of work and employment, individuals now look for more flexible and multi-skilling learning opportunities for mobility across employment sectors and geographic locations.

In order to ensure this, vertical mobility options must be provided to the vocational graduates through benchmarking of such diplomas with formal education. Primary research indicates that polytechnic diplomas are often seen as a means to gain entry into engineering colleges, indicating that vocational educational qualifications are not used for their intended purpose.

The NVEQF framework is attempting to develop this at the national level. At the district level, efforts must be made to catalyse the transition away from the current system to one where there is greater interaction between vocational and formal streams.

Action Plan

a. Inclusion of basic subjects covered in degree courses in vocational training courses to allow transition from vocational to formal education, should the student desire to make such a change.
b. Providing exposure on vocational education at the 10+2 level through presentations and discussions with school students to position skill training as an alternative to formal education.
c. Benchmarking vocational education diplomas and certificates with specific levels of formal educational attainment, similar to professional courses to make it possible for students to pursue further formal education, if they so desire.
d. Set up a vocational university or community resource centres to provide students with opportunities to pursue vocational degrees and advanced skills.

8.8.2 Industry

Skilling through Partnerships with Training Providers

Traditional high growth industries like textiles will maintain high levels of efficiency, but are expected to substitute unskilled workers with semi-skilled or skilled workers. High growth industries like construction will also witness an increase in human resource requirements. It is recommended that these industries build partnerships with schools and training providers to correctly align the skills of their future potential workforce. The lack of adequate information on industry requirements is contributing to the low interest in vocational training.

Action Plan:

a. Promote the creation of a central database which matches information on skill levels to compensation and presents a list of potential employers in the state for a certain skill type – this may be taken by industry associations in the state
b. Participate in campus recruitments at vocational training institutes in the vicinity to establish a strong connection between employment and skill acquisition
c. Provide inputs on the curriculum design and equipment to be adopted at training institutes
d. Set induction and training periods for new workers to reduce the potential opportunity cost associated with pursuing skill development courses

e. Undertake frequent interaction with students at vocational education institutes through live projects, lectures or visits

Increase desirability of jobs in manufacturing sectors through improved work environment

The poor working conditions prevalent in most industries employing vocational labour is among the key factors contributing to a low preference for vocational education among the district youth. The poor level of health and safety standards in firms is also a major concern.

Action Plan:

a. Efforts are to be made by the industry heads to improve the working conditions and ensure compliance to safety, health and welfare norms. Industry Association can play a crucial role here to create awareness on the need for improvement in work conditions
b. Emphasize on the motivational aspect of working conditions through specific initiatives such as an employee feedback and grievance redressal mechanisms
c. Various educational and training programmes for building awareness of rights, duties and liabilities amongst the workers in relation to working condition regulations must be made.

8.8.3 Training Providers

Upgrade and standardize curriculum

Skill development activities in India continue to remain largely unregulated, leading to huge qualitative gaps in the training provided and industry demand. Thus there is an urgent need to create awareness among training providers to upgrade their curriculum and align themselves with prescribed national occupational standards. When implemented this will help improve the comparability of trades and strengthen the marketability of courses.

Action Plan:

a. Map the relevance of existing curriculum to local and national demand through industry surveys
b. Identify gaps and upgrade the content and pedagogy as per the norms prescribed by Sector Skill Councils (SSCs)
c. Evaluate based on competency levels in performing specific tasks with greater emphasis on practical learning
d. Incorporate a review of basic concepts in curriculum design
e. Build partnerships with government and industry to set up flexible payment schemes like skill vouchers in traditional sectors such as textiles

Forge partnerships with Industry

The close collaboration of industry and institute can develop a competent and highly skilled workforce. The presence of a feedback loop, where the industry provides inputs regarding their perception of the quality and relevance of training delivered in a structured fashion is critical for the continuous development of the training facility. However, the linkage between the trainers and the industry is observed to be weak in the district.

Action Plan:

a. Map the set of industries that absorb students from the training institutes through on campus/ off-campus recruitments
b. Create a formal feedback mechanism for industries that participate in recruitments
c. Incorporate the feedback and upgrade curriculum and pedagogy to reflect industry demand
d. Invite members from the Industry to deliver guest lectures at the institute
e. Enter into MOUs with industry to ensure continuous placements of students
f. Introduce a two month internship with local industries, embedded as a part of the course curriculum

8.8.4 NSDC

Formal certification of informally acquired skills

A large number of the people in the district are seen to be engaged in the informal sector, whose skill levels are either native or are acquired informally. In the absence of formally certified skills these labourers tend to earn meagre wages. The formal vocational system is not accessible to these people as they often do not meet the basic education criteria prescribed

Action Plan:

a. Build a database of existing types of skills provided in the informal sector and design targeted training interventions to up-skill and certify those engaged in the informal sector
b. Design special training courses (e.g. fast track evening courses), as pilot projects, to enhance the skills of participants in the informal sector by providing them formal training using the existing vocational training infrastructure
c. Popularize the Recognition of Prior Learning (RPL) system in existing vocational centres. RPL allows for individuals to gain accreditation for their native skills and access formal retraining opportunities even if they do not fulfil basic educational criteria
d. Launch community-based training programmes, which provide demand driven and customized training programmes to cater to the needs of those in the district

Capacity Creation

Automobile, construction and tourism and travel are likely to see the largest increase in incremental human resource requirements at the semi skilled level in Kancheepuram. Skill training initiatives must have a strong focus on quality and relevance to industry to ensure that the existing qualitative gap is not further exacerbated.

a. Automobile initiatives should be encouraged to follow the dual apprenticeship system to ensure familiarity with the machinery, rationalized job expectations and practical application of training imparted in the classroom
b. Hospitality initiatives may be set up in more developed blocks of the district, partnering with large industry players to ensure adherence to quality requirements
c. Training initiatives for the construction sector must focus on up-skilling existing workers in partnership with industry to ensure applicability of skills and a commensurate increase in wages for the acquisition of skills

9 Kanniyakumari

9.1 Overview

Located in the southernmost part of India, Kanniyakumari is the second most urbanized district in Tamil Nadu, ahead of Coimbatore and Vellore. Spanning an area of 1.679 kms, it is the second smallest district of Tamil Nadu, constituting only 1.31% of the state's area. It is surrounded by the state of Kerala in the west, the district of Tirunelveli in the north, the Gulf of Mannar in the east, the Indian Ocean in the south and is often known as 'The Land's End.' The district comprises four taluks, nine blocks and four municipalities. The 4 taluks are further divided into 99 village panchayats and 56 special category village panchayats.

Table 9-1: Basic Information (2010-11)

District Information	Kanniyakumari	Tamil Nadu
Number of inhabited villages	69	15,400
Area (Sq Km)	1,679	127,905
% of state area	1.31	100
Area rank	31	-
Revenue divisions	2	-
Taluks	4	-
Blocks	9	-
Corporation & municipalities	4	-
Town panchayats	56	-
Revenue villages	81	-
Panchayat Villages	99	-

Source: District Statistical Handbook (2010-11)

9.2 Demographic Profile

Kanniyakumari is densely populated, constituting 3% of the state's population. At a population of about 18 lakh, and a relatively smaller area, population density of the district is high at 1110 persons per square kilometer. Although 64% of its population falls between the ages of 15 and 59, the worker participation rate is quite poor at 29.42%. Of the total worker share, majority of the workers are employed in secondary and tertiary sectors, with a marginal amount of the population choosing agriculture as their vocation.

Kanniyakumari is also one of the most urbanized districts with over 80% of its population residing in urban areas. The district is relatively developed, with a higher sex ratio than the state average -1010 females for every 1000 males. The HDI and GDI figures for the district too are on the higher end, 0.711 and 0.708 respectively, much above the state average.

Table 9-2: Demographic Indicators (2011)

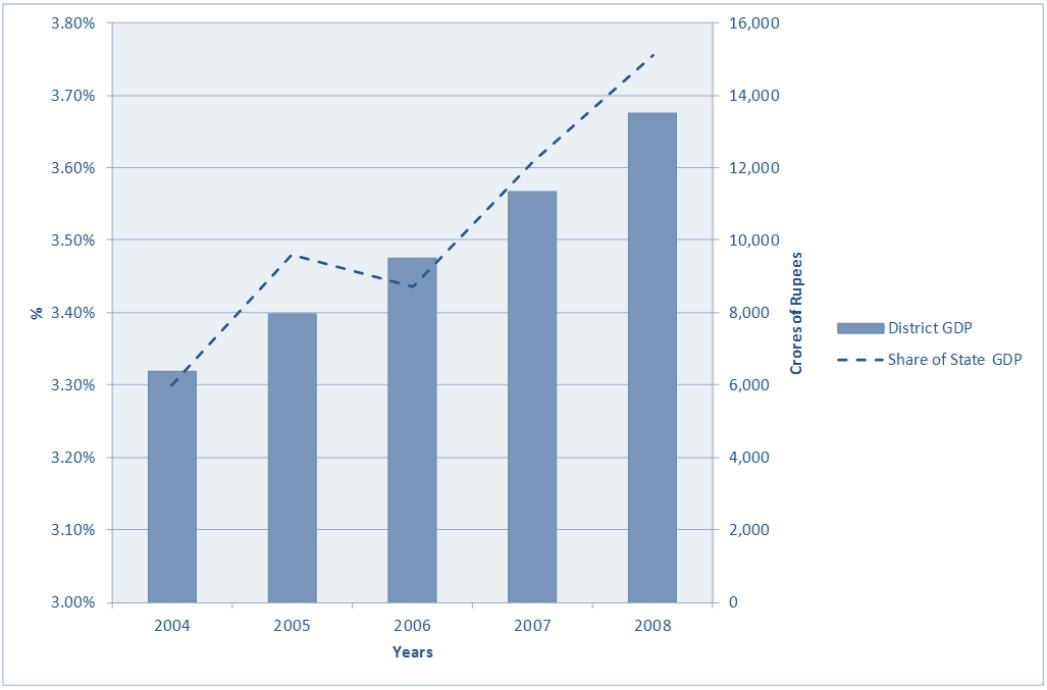
Population	Kanniyakumari	Tamil Nadu
Population	1,863,174	72,138,958
Share of state population (in %)	3	100
Population density (per sq. km.)	1109.96	564
Urban population percentage	82.47	48.45
Total population annual growth rate (in %)	1.05	2
Urban population	1,536,558	34,949,729
Sex ratio (number of females per 1000 males)	1010	995

Source: Census 2011 (Provisional)

9.3 Economic Profile

The economy of the district has seen a steady rise over the past decade; its contribution to the state GDP increasing from just about 2% to over 3.8% in 2008-09. The total per capita income for the district is slightly lower than the state average. The disparity between urban and rural per capita income is also relatively lower – the rural per capita income, in particular, is significantly higher than the state average.

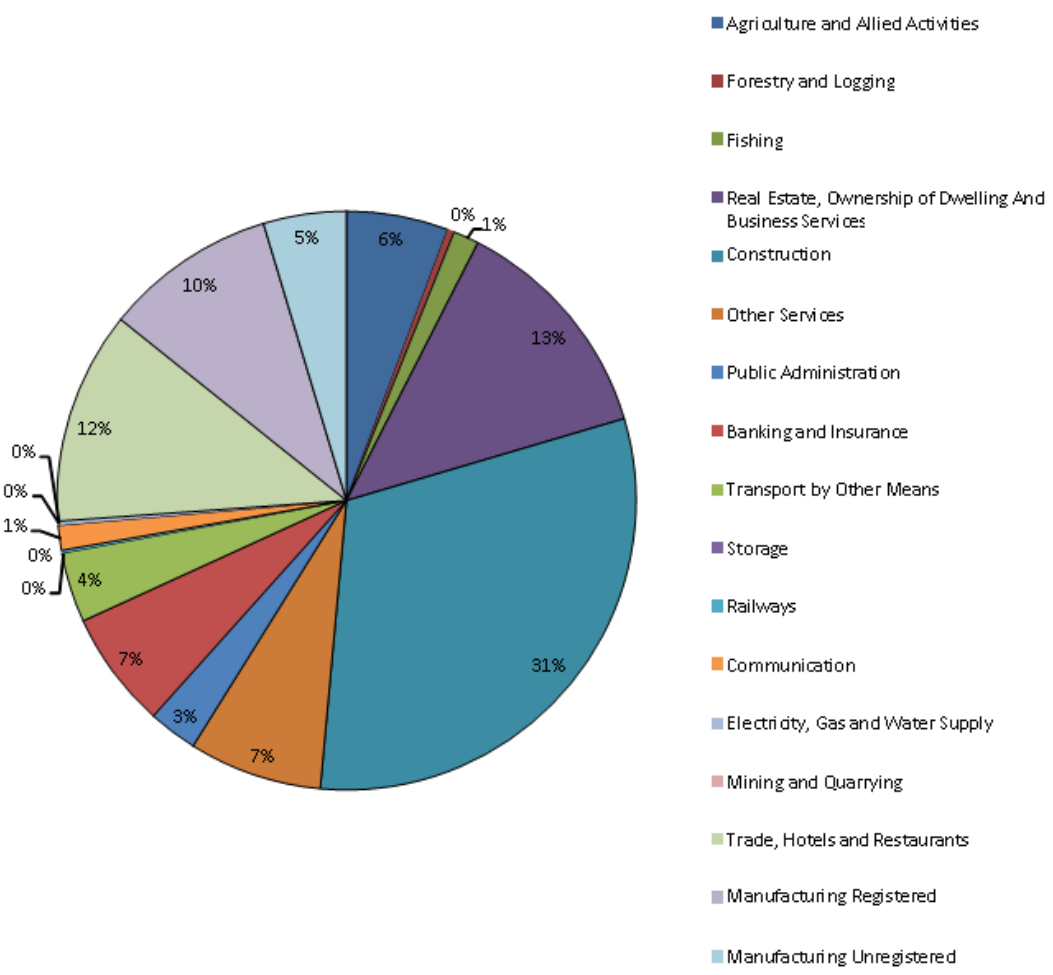
Figure 9.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Transport and logistics account for a large portion of the district's income, contributing more than 44% of the total income. Manufacturing contributes 15% to district GDP, with unregistered manufacturing accounting for more than 30% of total manufacturing. Agriculture has just a 6% share in district income and services - mostly tourism and travel and communication- occupies the rest.

Figure 9.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 9-3: Per Capita Income (2011-12)

Human Development Indicators	Kanniyakumari	Tamil Nadu
Per capita urban income	64,500	100,600
Per capita rural income	45,000	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

9.3.1 Agriculture

There are 3,30,053 holdings in the district, with an average of holding of 0.30 hectares per person. Of the 84,837 hectares operated agriculturally, about one fourth of the cultivated area is irrigated through various sources. Farmers also engage in other supplementary activities such as horticulture, floriculture and sericulture owing to the wealth of natural and forest resources available in the district. Rare medicinal herbs are available in

abundance in the district, prompting the locals to collect, package and sell these herbs to the visiting tourists and various other ayurvedic companies.

Nearly 48% of the total sown area is under food crops. Around 46% of this sown area is under cereals, 3% under pulses and 42% under fruits and vegetables. Non food crops include sugarcane, cotton, oil seeds and tobacco. About 52% of the total sown area is under non food crops. Almost 100% of this area goes to other crops while oil seeds have a share of 0.05% of the remaining sown area. Yield is higher than the state for only oilseeds, while it is lower than the state for all other major crop groups.

Table 9-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	19,792	45.63%
Pulses	1,187	2.74%
Condiments	1,507	3.47%
Fruits and vegetables	18,163	41.88%
Other	2,725	6.28%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	3	0.01%
Cotton	11	0.02%
Oil Seeds	23	0.05%
Tobacco	0	0.00%
Other	47,113	99.92%
Total Area under Food Crops	**43,374**	**47.91%**
Total Area under Non Food- Crops	**47,150**	**52.09%**

Source: Tamil Nadu Crop Report (2011-12)

Table 9-5: Major Crops: Yield in KG per Hectare in 2011-12

Crop	Yield for Kanniyakumari	Yield for Tamil Nadu
Cereals	4,405	12,136
Pulses	920	2,763
Sugarcane	101	101
Condiments	24,724	32,440
Vegetables	61,049	164,422
Mango	4,268	4,795
Cotton	340	368
Tobacco	584	1,524
Oil seeds	17,085	16,484

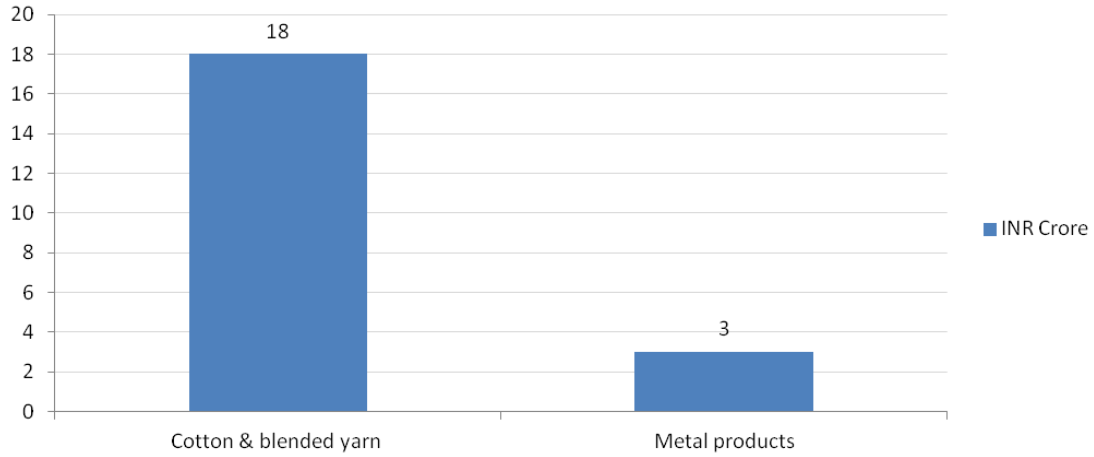
Source: Tamil Nadu Crop Report (2011-12)

9.3.2 Industry

Approximately 1.14 lakh people are employed in the industry sector. There are five large scale industries in the district, with two spinning mills for the textile sector and one 'tac floor' to manufacture coir mat allied finished products. A large amount of mineral deposits found in the sands of Kanniyakumari has led to the growth of 'India Kare Earth Limited' at Manavalakurichi, which produces the largest amount of limenite in the world. It also produces substantial quantities of thorium and uranium used in India's nuclear programme and nuclear power reactors.

The abundant supply of raw materials such as rubber, tapioca, bamboo of all kinds, coconut products among others, helps promote medium and small scale industries. The last few years have witnessed the growth of rubber and coir industries in the district, with additional investments in the textile and mining sectors being planned for the future.

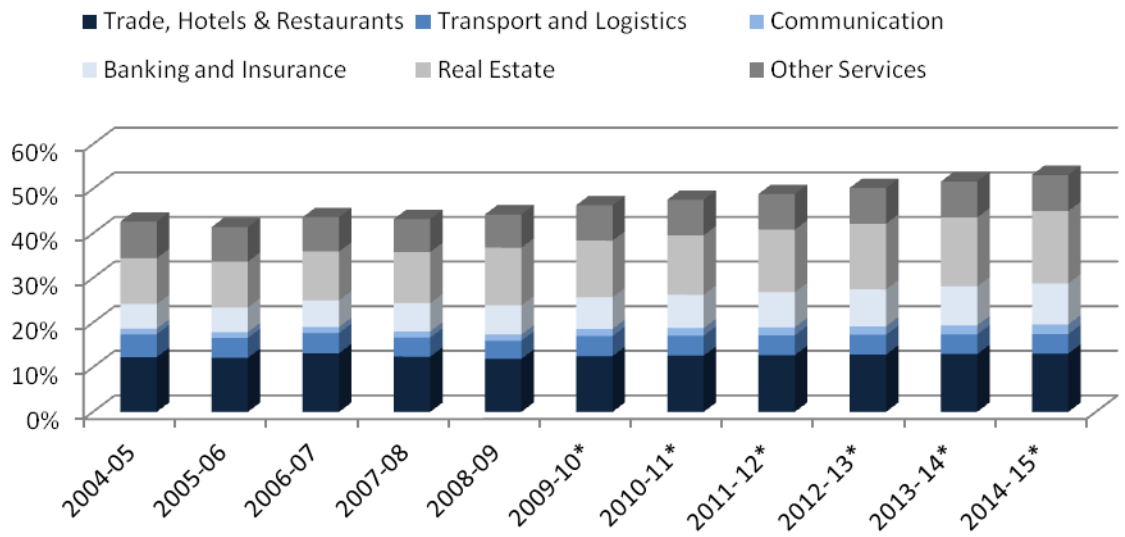
Figure 9.3: Investments in INR Crore



Source: Capex, CMIE (2011-12)

9.3.3 Services

Figure 9.4: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The service sector in Kanniyakumari contributes close to 44% of the district GDP as on 2008-09 and is expected to grow up to 50% of district GDP in 2013-14, with the growth primarily being led by the real estate sector. The district has witnessed a consistent rise in tourist activity, which has helped sustain the real estate growth at a CAGR of 20%.

The services sector employs 2.49 lakh people. Owing to the fact that Kanniyakumari was declared a 'tourist district' in 2006-07, the tourism industry has witnessed remarkable growth. Along with an initial INR 20 lakh tourism development fund, the district government in collaboration with private players also set up a number of resorts and cottages with a sun set view point worth at least INR 1 crore.

The various tourist spots such as the Vivekananda Rock Memorial, Thiruvalluvar Statue, Gandhi Memorial, Kumari Amman Temple, attract about 1500 visitors on an average, every day. On non working days, this number rises eightfold. Every year, about 19 lakh people come to view the Vivekananda Rock Memorial alone. The increased tourist numbers have led to an upsurge of hotels and restaurants – there are currently 29 hotels, 33 restaurants and 27 travel agents arranging custom made tours for the various visiting groups.

The rise in tourism has also led to the development of financial and physical infrastructure of the district. There are a number of commercial, state and private banks in the district, with deposits worth INR 5,000 crore. These financial institutions have been instrumental in providing credit to the various sectors of the district, ensuring faster economic progress. Additionally the district also has 6,430 kilometers of roads and over 30,000 registered vehicles. It has considerable railway infrastructural services too, with the tracks covering a length of 78 kilometers with 11 stations between them. Health care services, however, are not as well developed, with only 25 hospitals and bed strength of 1,359. Population to doctor ratio is low too, with one doctor catering to 5300 persons in the district.

The various industrial developments are supported through energy infrastructure projects in the district. There are two hydroelectric power stations at Kodayar, generating about 100 MW of power for the district. In

addition, the wind power project set up at Aralvaimozhi is the largest wind generating plant in Asia, supplying the local farmers and other small and medium industries in the vicinity with enough power to ensure uninterrupted production process.

9.4 State of Education

Kanniyakumari has the highest literacy rate in the state of 92%. The past decade has brought about some very tangible changes in the literacy levels of the district. Female literacy in particular, rose from 84% to 90%, almost double the increase in male literacy.

Table 9-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	84.80	90.45	0.07
Male	90.40	93.86	0.04

Source: Census 2001, Census 2011(Provisional)

There are also a number of school education facilities for the residents of the district; a total of 1071 schools serve the growing school going population. The Net Enrollment Ratios are slightly higher than the state average at 99.64% for the primary level and 98.8% for the upper primary level. The dropout rates too, are below the state average, at about 2% and 3% for the primary and upper primary levels respectively.

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 72,575, while enrolment in schools that had primary and upper primary classes was 33,312. Enrolment in upper primary schools was 73 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 81,562, while enrolment in schools with upper primary and secondary/ higher secondary classes was 53,772.

Table 9-7: Education Profile (2010-11)

Educational Statistics	Units in Kanniyakumari	Units in Tamil Nadu
Primary	515	33,909
Upper primary	206	8,552
Secondary	195	4,436
Higher secondary	214	4,632
NER – Primary (%)	99.64	98
NER - Upper primary (%)	98.8	98
Dropout rate- Primary (%)	1.92	3.81
Dropout rate - Upper primary (%)	2.29	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12

The district is also home to a number of higher education institutions. There are 26 engineering colleges and 8 polytechnics for technical education. Medical education is represented by two medical colleges, one dental college, two nursing colleges, one Pharmacy college and five other medical institutions. There are 12 arts and science colleges. In other types of vocational education institutions, there is a hospitality management institute in the district.

Table 9-8: Education Profile (2010-11)

Field	No. of Colleges
Engineering	26
Arts and sciences	12
Management	0
Medical	2
Dental	1
Nursing	2
Pharmacy	1
Other medical	5
Teacher training and education	0
Hospitality	1
Fashion technology	0
Polytechnics	8
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

Details of industrial training institutes and centers in the district are given in the appendix. There are two government ITIs in the district, one of which is solely for women. The majority of the trades are for auto repairs or civil engineering jobs. Computer programming, dress making, stenography, etc. also see some representation. The combined capacity of all the ITIs and ITCs in the district is 4,368.

9.5 Human Resource Availability

The current work force is estimated to be 7.74 lakh, which is estimated to grow to 9.09 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 64,000 and in 2017-22, the incremental availability is estimated to be 71,000.

Table 9-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	1,879	1,242	793	774		
2017	2,012	1,324	858	838	64	
2022	2,160	1,411	929	909		71

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level in 2012-17. High outward migration of skilled human resources was observed in the district and falling natural population growth is likely to lead to a relatively low availability of skilled and semi-skilled human resources.

Table 9-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	42	10	12	64
2017-22	46	11	14	71

Source: Athena Research

9.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the construction, the unorganized sector and tourism and travel. Food processing, textiles, BFSI, healthcare, media and retail are expected to see moderate growth.

The tourism and travel industry is already well established in the district and is expected to grow rapidly. Traditional industries like food processing and textiles are expected to continue robust growth, though there will be shifts in the nature of products produced as competing districts will erode the cost based competitiveness of these industries necessitating higher levels of technology and variety of products.

Table 9-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-5	0	-1	**-5**	-4	0	-1	**-5**
Automobile	0	0	0	**0**	0	0	0	**0**
Chemicals and Pharmaceuticals	1	1	2	**0**	1	1	1	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	2	0	0	**2**	2	0	1	**3**
Furniture	1	0	0	**1**	1	0	0	**1**
Gems & Jewellery	0	0	0	**0**	0	0	0	**1**
Handlooms & Handicrafts	-1	0	0	**-1**	-1	0	0	**-1**
Leather	0	0	0	**1**	1	0	0	**1**
Textiles	4	1	1	**6**	6	1	1	**9**
BFSI	0	1	3	**5**	0	2	5	**7**
Construction	62	12	6	**80**	137	26	12	**175**
Education	0	0	2	**2**	0	0	2	**3**
Healthcare	0	1	2	**4**	0	1	2	**3**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	0	1	3	**4**	0	2	5	**7**
Organized Retail	2	1	2	**4**	4	1	3	**8**
Real Estate	0	0	1	**2**	0	0	2	**3**
Tourism & Travel	7	26	23	**57**	11	45	40	**97**
Transportation & Logistics	1	0	0	**2**	2	0	0	**2**
Unorganized (excluding Agriculture and Construction)	34	17	24	**75**	40	26	31	**97**
TOTAL	**111**	**62**	**68**	**238**	**202**	**107**	**105**	**410**

9.7 Skill Gap

The largest skill gap is at the unskilled level due to the high expected growth of less skill-intensive sectors such as textiles and construction. In spite of an increasing number of youth opting for skilling, the skill gap is expected to be grow over the next decade at the semi-skilled as well as the skilled level due to high outward migration of skilled human resources.

Table 9-12: Skill Gap in 000's

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	111	62	68	**238**	202	107	105	**410**
Incremental Human Resource Availability	42	10	12	**64**	46	11	14	**71**
Skill Gap	**69**	**53**	**56**	**174**	**156**	**96**	**91**	**340**

Source: Athena Research

The pattern of skill gap suggests sustained increase in the requirement for semi-skilled human resources with the growth of traditional sectors like transport, food processing and tourism and travel. In this period, traditional industries will employ a large number of unskilled workers. The slow growth of high technology and skills industries like electronic hardware and IT/ITES and the mismatch in youth aspirations may lead skilled human resources to seek suitable opportunities elsewhere.

Qualitative Skill Gaps

Limited formalization of skills

Kanniyakumari's handloom industry is clustered around Nagercoil. The sector is largely unorganized and most of the craftsmen, artisans and weavers acquire skills traditionally from their families. The wages received in such industries are very low, which is causing people to seek employment elsewhere. The predominance of native skills and the limited emphasis on formalizing the skills has prevented these artisans and weavers from earning better wages.

Low emphasis on agricultural skilling

Agriculture is one of the key contributors to district economy and employment. However, the productivity of people engaged in the agricultural sector remains low on account of the highly fragmented nature of holdings and the lack of emphasis on up skilling farmers in modern agricultural practices.

Youth Aspirations

Table 9-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	Hospitality, retail	Construction, Textiles
	Low	IT/ITES	Agriculture, Furniture

Source: Athena Research

Low propensity to acquire training in industrial skills

There are very few workers who possess the requisite skills to work in industrial units. There are quite a few technical training institutes in the district, but engineering outnumbers every other stream of education. Engineering is the most popular course among the youth, and a substantial proportion of the district's population opts to enrol in engineering colleges. This has created a shortage of people who are semi-skilled and skilled in industrial vocations. While the lack of skills can be addressed with training, the unwillingness to learn complicates operations and restricts growth.

High preference for formal education

There are is a very high preference for education in Kanniyakumari. This district, in particular, has over 40 engineering colleges, possibly the highest in Tamil Nadu. Even in rural areas, people give precedence to obtaining a good education and express interest in pursuing further education. Moreover, a number of people, on completion of basic education in the district, go abroad for further educational and employment opportunities. While this is a positive trend, it has created a deficit for vocationally trained skilled and semi-skilled labourers within the district.

9.8 Recommendations

9.8.1 State Government

Establishment of ' Skills Panchayat'

There is mismatch in the availability and requirement of skilled human resource in the district, mainly due to the presence of high information asymmetries and the inability of small firms to recruit from vocational institutes. The unavailability of suitable employment opportunities has led to high outward migration. Additionally, students who have completed diploma courses expect higher compensation even if their skill level does not match the job requirements and small firms are generally not in a position to meet such demands. Therefore, smaller firms find it difficult to source workers, and have to do so through informal methods.

A large proportion of youth graduating out of ITIs and other vocational institutes join the workforce at the same wage level as unskilled workers, on account of the lack of recognition of skills imparted by government and private institutes.

Action Plan:

a. Set up a 'Skills Panchayat' under the District Skill Development Council vested with the responsibility to:
   g. Aggregate data on the apprenticeship vacancies and employment opportunities in the district and display this information on a dedicated portal that can be accessed by students
   h. Undertake counselling for students graduating from ITIs and other vocational training institutes
   i. Organize campus placements, ensuring a match between the training imparted and the job profile
   j. Prepare students for job interviews
   k. Organize guest lectures and industrial visits
   l. Keep track of the employment status of all students for a period of at least 6 months after graduation
b. The Skills Panchayat must consist of personnel from the district administration and local industries and should act as an aggregator of demand and supply in the region

Strengthen training infrastructure at ITIs/ITCs through the introduction of reform linked schemes

The training infrastructure of ITIs/ITCs, a key contributor of skilled manpower in the district, does not meet industry standards. Most ITIs do not have enough space and the infrastructure is observed to be decrepit. The ability of ITIs to deliver quality skills is restrained by the absence of well maintained and functional infrastructure and inventory.

The PPP scheme introduced by the Ministry of Labour and Employment in the year 2007, seeks to improve the infrastructure of select ITIs in the country through the provision of a grant of Rs 2.5 crore channelized through a special entity called the Institute Management Committee. While the availability of additional funds from the centre is seen to have had a positive impact on the quality of infrastructure, most ITIs are still far away from meeting the standards required to meet industry demands. This calls for a set of concerted initiatives to reform and improve the status of infrastructure across ITIs.

Action Plan:

a. Develop a manual prescribing standard architectural norm for all ITIs/ITCs, to ensure optimal use of space
b. Evaluate the level of compliance among existing ITIs/ITCs to the prescribed architectural standards and identify gaps
c. Revise the equipments prescribed under NCVT norms and make them more relevant to industry requirements
d. Create a toolkit to enable ITIs to undertake a self-assessment of the status of their training infrastructure and submit annual reports to the Tamil Nadu Skill Development Mission
e. Introduce reform-linked schemes to incentivize ITIs/ITCs to improve the status of training infrastructure

9.8.2 Industry

Rationalizing the wage norms for skills

The wages for basic vocational skills in the state, on an average continue to remain lower than the average cost of acquiring training (time and money cost), particularly for traditional sectors such as textiles and food processing, making skill acquisition an unattractive proposition for the youth. The presence of a large number of intermediaries between the employer and the employee further drives down the actual wage level, owing to the higher costs of transactions. There is an urgent need to rationalize the wage levels for different skills levels in the district.

Action Plan:

a. Revise the minimum wage rate for graduates acquiring vocational training by taking into account the consumer price index number for industrial workers. Ensure that the starting wage is equal to or above the cost of acquiring training
b. Create a pay and career path for graduates coming out of vocational institutes
c. Incentivize the youth to acquire advanced or specialized skills by providing higher wage rates
d. Engage in off-campus recruitments by directly contacting training providers

Industry norms on promotions for unskilled and semi-skilled workers based on experience and abilities

The vertical mobility of semi-skilled workers within an organization continues to remain limited. Currently there is no clear pay and career path for semi skilled workers in Industry. This is all the more visible in the case of unskilled workers who are predominantly recruited as contract labour in sectors such as construction.

Action Plan:

a. Restructure the pay scales of semi-skilled labour with a variable component to incentivize performance
b. Incentivize semi-skilled employees to acquire additional skills on the job and incentivize the same trough additional pay post completion of the course
c. Encourage unskilled workers to acquire skills on the job and certify them based on experience/abilities to encourage vertical mobility within the organization and greater portability across organizations.
d. Create a clear pay and career path for all semi-skilled employees and link promotions to pre-determined performance criteria
e. Establish a clear performance evaluation and appraisal system

9.8.3 Training Providers

Emphasis on Basic Skills and Portability of Skills

A number of industries are set to achieve high growth rates in the coming decade which is associated with a high requirement for semi-skilled workers. Factoring fluctuations in business climate and changes in taste and preferences, it is advisable to offer courses that train workers in basic skills that could be applied to a multitude of industries, providing greater portability of skills. Training providers are recommended to form partnerships with schools, local bodies and NGOs to this end.

Action Plan:

a. Identify the key employers of unskilled and semi-skilled labour in the district
b. Introduce short modular employability courses in trades that have high local or regional demand
c. Introduce flexible course timings
d. Certify and provide placement support to those graduating from the MES trades to catalyse transition into the formal sector

Collaboration with Industry

The close collaboration of industry and institute can develop a competent and highly skilled workforce. The presence of a feedback loop, where the industry provides inputs regarding their perception of the quality and relevance of training delivered in a structured fashion is critical for the continuous development of the training facility. However, the linkage between the trainer and the industry is observed to be weak in the district.

Action Plan:

a. Map the set of industries that absorb students from the ITI through on campus/ off-campus recruitments
b. Create a formal feedback mechanism – Undertake an annual survey to extract feedback on the quality and relevance of training delivered in the institute
c. Incorporate the feedback and upgrade curriculum and pedagogy to reflect industry demand
d. Invite members from the Industry to deliver guest lectures at the institute
e. Enter into MoUs with industry to ensure continuous placements of students

9.8.4 NSDC

Align youth aspiration to industry demand

The mismatch between youth aspirations and industry demand remains among the most critical factors contributing to the large skill gap in the district. The choices that the youth make are seen to deviate from policy and market incentives and depend on social factor such as prestige. Furthermore, the absence of information on the changes taking place in the domestic and international labour markets has led to youth in the district making faulty educational choices.

Action Plan:

a. Undertake media campaigns to promote skill development and training at the semi-skilled level. Primary research suggests that parents strongly influence education decisions, and must also be targeted by the campaign.
b. Set up a counselling and career guidance centre at the district to conduct aptitude tests and counsel students on the various vocational options that will suit them and the corresponding employment opportunities available
c. Create an online portal, which will serve as a common forum for students and skill development professionals and experts to exchange thoughts and opinions
d. Set up a hot-line to allow to students to obtain greater clarity of the various skills development options available to them

Encourage multi-skilling and local level collaboration

There appears to be a strong preference for flexibility in terms of education in the district. The youth tend to favour courses that will enable them to transition to any sector of their choice. Therefore, there is a need to set up multi-skilling initiatives focusing on growing sectors such as hospitality, retail, construction and textiles. Such courses are also likely to be favoured since there is a high requirement for human resources in these industries at the state level, and a large proportion of the youth tend to migrate to other districts in search of better employment opportunities.

Action Plan:

a. Encourage multi-skilling for allied growing sectors such as hospitality and retail
b. Undertake campaigns among students to make them aware about the benefits of acquiring multi-skills
c. Provide financial support either in the form of voucher to those who are already employed, but inclined on acquiring multiple skills
d. Encourage collaboration with local NGOs and workers' associations to reach workers in unorganized sectors such as construction
e. Allow certification of informally acquired skills by NSDC partners under evaluation systems developed as per SSC guidelines to permit workers to obtain formal certification for existing skills

10 Karur

10.1 Overview

Karur was formed in 1995, by carving it out of the erstwhile Tiruchirappalli district. Karur lies in the central part of Tamil Nadu and is bordered by Namakkal and Erode in the north, Tiruchirappalli in the West, Dindigul in the South and Tiruppur in the east. The district is divided into two revenue divisions, five taluks and eight blocks. There are four corporations, 11 town panchayats, 203 revenue villages and 158 panchayat villages.

Table 10-1: Basic Information (2010-11)

District Information	Karur	Tamil Nadu
Number of inhabited villages	175	15,400
Area (Sq Km)	2,551	127,905
% of state area	1.99	100
Area rank	28	-
Revenue divisions	2	-
Taluks	5	-
Blocks	8	-
Corporation & municipalities	4	-
Town panchayats	11	-
Revenue villages	203	-
Panchayat villages	158	-

Source: District Statistical Handbook (2010-11)

10.2 Demographic Profile

At a population of over ten lakhs, the district contributes about one percent to the total state population. Population density is moderate at about 422 people per sq km, which is lower than the state average. The growth rate of population is low at 1.04% annually, which suggests a stable population scenario. The sex ratio is significantly above the state level at 1,015 females per 1000 males. The majority of the population lives in rural areas, while the urban population accounts for only about 40.33% of the total population. About 37.89% of the workforce is engaged in agricultural and allied activities. More than 66% of the population is in the working class age group, but the WPR is low at only 46.11%.

Table 10-2: Demographic Indicators (2011)

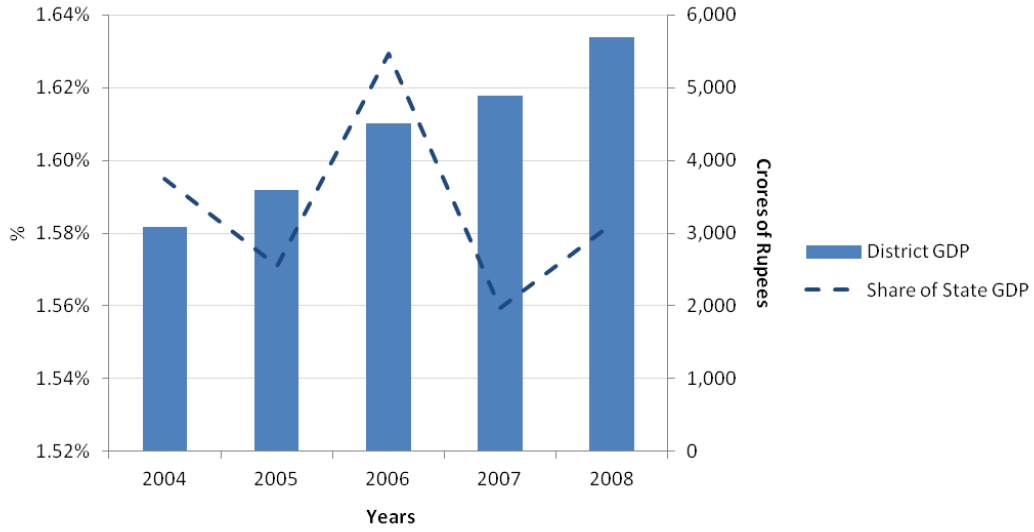
Population	Karur	Tamil Nadu
Population	1,076,588	72,138,958
Share of state population (in %)	1	100
Population density (per sq. km.)	422.06	564
Urban population percentage	40.33	48.45
Total population annual growth rate (in %)	1.04	2
Urban population	434,173	34,949,729
Sex ratio (number of females per 1000 males)	1015	995

Source: Census 2011 (Provisional)

10.3 Economic Profile

The contribution of the district to state GDP has varied between a high of 3.3% and a low of 3.05%. The contribution has moderated in recent years and is steady at about 3.15% in 2008-09. Per capita incomes are low relative to the state, and urban rural disparity is wide. The district does moderately well on human development indicators like HDI and GDI, with scores of 0.64 for both, but still trails the state average.

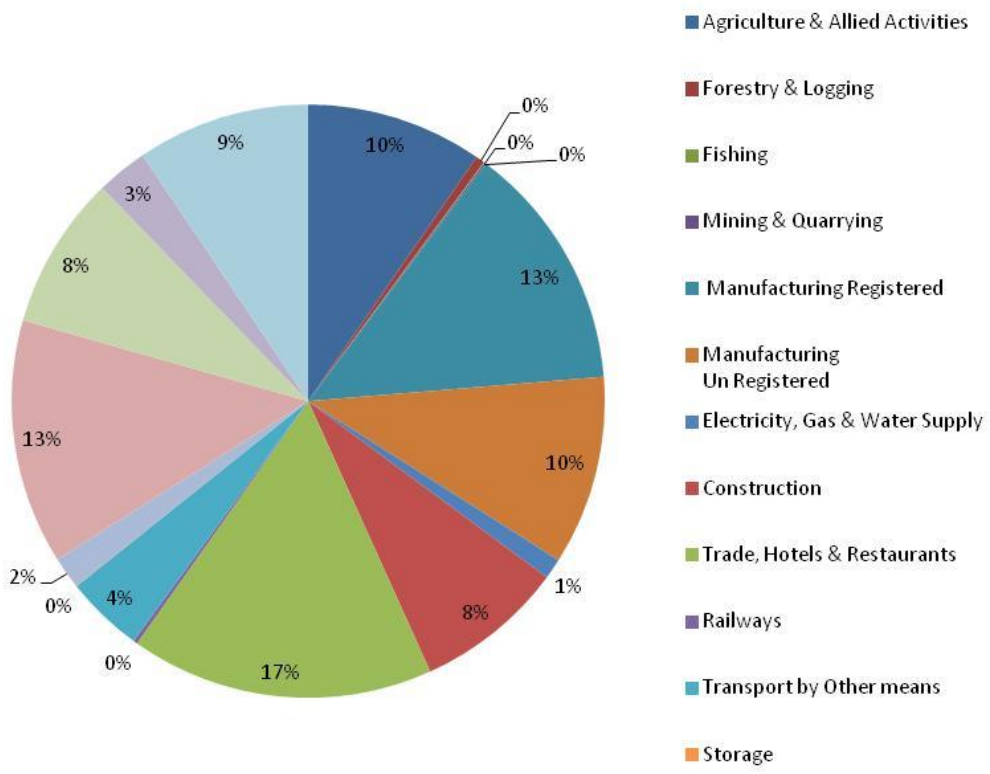
Figure 10.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Trade, hotels and restaurants accounted for 17% of district GDP, followed by real estate services at 15%. Agriculture accounts for nine percent while fishing activities accounts for another two percent. Manufacturing accounts for just eight percent, of which the majority is unregistered manufacturing. Other dominant sectors include banking and financial services, communication and railways.

Figure 10.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 10-3: Per Capita Income (2011-12)

Human Development Indicators	Karur	Tamil Nadu
Per capita urban income	71,800	100,600
Per capita rural income	44,100	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

10.3.1 Agriculture

At 46.11%, the proportion of total working population is low in Karur. Employment patterns capture the transformation in district economy. While 50% of the workers are engaged in agricultural activities, nearly 35% are currently employed in the secondary or tertiary sector. Only ten percent of the population is engaged as marginal workers, hinting at low levels of seasonal unemployment in the district.

About 65% of the total sown area is under food crops. Around 64% of this sown area is under cereals, eight percent under pulses and 15% under fruits and vegetables. Non food crops include sugarcane, cotton, oil seeds and tobacco. Nearly 35% of the total sown area is under non-food crops. Almost 19% of this area goes to sugarcane while oil seeds have a share of 37% of the remaining sown area. Yield is higher than the state for sugarcane and oilseeds, while it is lower than the state for all other major crop groups.

Table 10-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	42,403	64.41%
Pulses	5,598	8.50%
Condiments	1,196	1.82%
Fruits and vegetables	10,004	15.20%
Other	6,636	10.08%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	6,553	18.51%
Cotton	141	0.40%
Oil Seeds	12,990	36.70%
Tobacco	2	0.01%
Other	15,712	44.39%
Total Area under Food Crops	**65,837**	**65.03%**
Total Area under Non Food- Crops	**35,398**	**34.97%**

Source: Tamil Nadu Crop Report (2011-12)

Table 10-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield for Karur	Yield for Tamil Nadu
Cereals	14,636	12,136
Pulses	2,083	2,763
Sugarcane	90	101
Condiments	10,861	32,440
Vegetables	95,058	164,422
Mango	4,795	4,795
Cotton	443	368
Tobacco	668	1,524
Oil seeds	18,101	16,484

Source: Tamil Nadu Crop Report (2011-12)

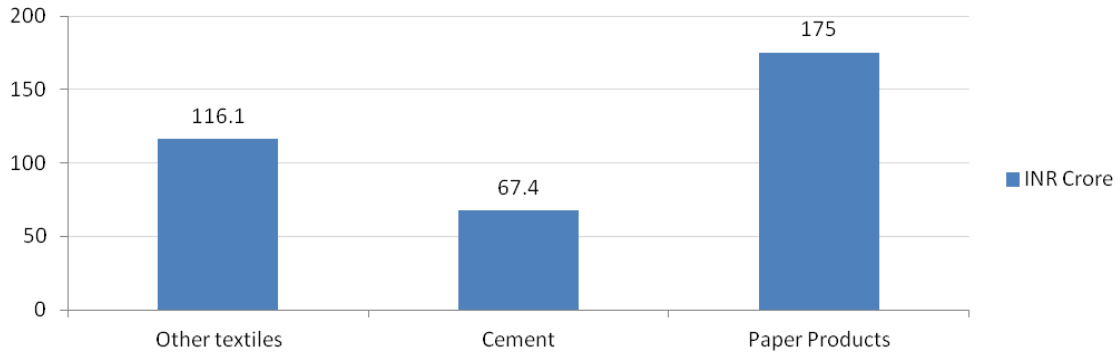
10.3.2 Industry

The industry sector employs more than 85,000 people in the district. There are three large scale industries in the district – paper, sugar and cement. Tamil Nadu Newsprints and Paper Ltd, in particular, have set up a paper mill in Pugalur, which is the largest of its kind in Asia. The availability of sugarcane in the district serves as a raw material to the sugar mills in the district, thereby providing the sugarcane farmers with almost assured customers for their crops and lowering the transport costs for the large scale industries.

Apart from these large scale industries, the district also houses a number of small and micro enterprises engaged in a variety of activities ranging from the manufacturing of textiles to rubber and plastic products.

Capex data indicates that sizeable investments are currently being funneled into the large scale sub sectors of paper products and cement. The medium and small scale units engaged in textile production too, are all set to receive investments worth INR 116.1 crores from various private and government players in the medium term. Clusters and industrial estates are also being planned for the textile units, in order to better organize the various textile activities and create robust vertical and horizontal linkages.

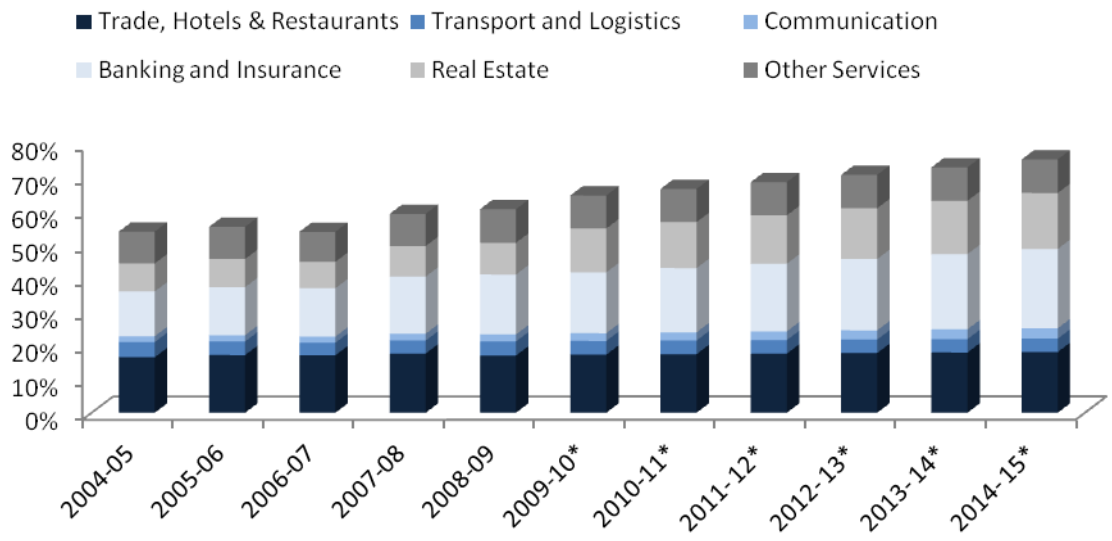
Figure 10.3: Investments in INR Crore



Source: Capex, CMIE (2012)

10.3.3 Services

Figure 10.4: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The service sector plays a critical role in the district and is expected to contribute to 71% of GDDP in 2012-13 as against 61% in 2008-09. Rising income levels and the corresponding increase in the spending capacity of the middle class has spurred the growth of the banking sector. At a CAGR of 19%, the banking and insurance sector has been the key driver of growth and is expected to contribute to almost a quarter of the district's GDP in 2014-15

The services sector employs nearly 1.57 lakh people in the district. Owing to the presence of several large scale industries and upcoming investments, transport infrastructure has been improved to increase the connectivity between various players involved in the production activity. There are 243.546 kms of highways for enhanced inter district connectivity, and over 1000 kms of municipal and panchayat roads to facilitate effective intra district connectivity. Railways too, have a substantial presence in the district, with 93.85 kms of route length covering 13 railway stations. Health infrastructure facilities are relatively less developed, with about 49 hospitals and 140 health care centres and a moderate population to doctor ratio of one doctor per 2774 persons.

10.4 State of Education

The literacy rate is 76%, lower than the state average of 80%. Both male and female literacy rose in the period 2001-2011 from 56.8% and 79.6% to 67.05% and 84.86% respectively. The rise in female literacy has been over ten percent, while at five percent, the growth of male literacy has been half of the female literacy.

Table 10-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	56.80	67.05	0.18
Male	79.60	84.86	0.07

Source: Census 2001, Census 2011(Provisional)

There are 660 primary schools, 147 upper primary schools, 95 secondary and 62 higher secondary schools in the district. Net enrollment ratios are high for the primary level, at nearly 98%, but drop off to 93% for the upper primary level. Dropout rates are high at the primary level at six percent but high at the upper primary level at 13%. According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 43,364, while enrolment in schools that had primary and upper primary classes was 34,035. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 30,978, while enrolment in schools with upper primary and secondary/ higher secondary classes was 31,218.

Table 10-7: Education Profile (2010-11)

Educational Statistics	Units in Karur	Units in Tamil Nadu
Primary	660	33,909
Upper primary	147	8,552
Secondary	95	4,436
Higher secondary	62	4,632
NER – Primary (%)	98.24	98
NER - Upper primary (%)	93.83	98
Dropout rate- Primary (%)	6.22	3.81
Dropout rate - Upper primary (%)	12.79	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12

There are nine engineering colleges and nine arts and sciences colleges in the district. There are seven polytechnics. The combined capacity of all the ITIs and ITCs in the district is 1,155. Details of major ITIs in the district are given in the appendix.

Table 10-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	9
Arts and sciences	9
Management	0
Medical	0
Dental	0
Nursing	0
Pharmacy	0
Other medical	0
Teacher training and education	0
Hospitality	2
Fashion technology	0
Polytechnics	7
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

10.5 Incremental Human Resource Availability

The current work force is estimated to be 4.49 lakh, which is estimated to grow to 5.54 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 50,000 and in 2017-22, the incremental availability is estimated to be 56,000.

Table 10-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	1,089	720	459	449		
2017	1,190	784	510	498	50	
2022	1,304	853	566	554		56

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level, mirroring state level trends.

Table 10-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	30	2	18	50
2017-22	34	2	20	56

Source: Athena Research

10.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the unorganized sector and construction. The presence of auto component manufacturing firms is expected to grow in the district. Traditional sectors such as textiles and food processing will see moderate but steady growth. The human resource requirement in the agriculture sector is expected to decline by 19,000 in 2012-17 and 17,000 in 2017-22.

Table 10-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-16	0	-3	**-19**	-14	0	-2	**-17**
Automobile	1	1	0	**3**	2	2	1	**5**
Chemicals and Pharmaceuticals	0	0	0	**0**	0	0	0	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	0	0	0	**1**	1	0	0	**1**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**0**	0	0	0	**0**
Handlooms & Handicrafts	-1	0	0	**-1**	-1	0	0	**-1**
Leather	0	0	0	**0**	0	0	0	**1**
Textiles	3	1	1	**5**	5	1	1	**7**
BFSI	0	1	4	**6**	0	2	6	**8**
Construction	11	2	1	**14**	25	5	2	**32**
Education	0	0	1	**1**	0	0	1	**1**
Healthcare	0	1	1	**2**	0	1	1	**2**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	0	0	1	**1**	0	1	2	**2**
Organized Retail	1	0	1	**3**	3	1	2	**5**
Real Estate	0	0	0	**1**	0	0	1	**1**
Tourism & Travel	0	0	0	**0**	0	0	0	**0**
Transportation & Logistics	1	0	0	**1**	1	0	0	**1**
Unorganized (excluding Agriculture and Construction)	20	10	14	**43**	23	15	18	**56**
TOTAL	**22**	**17**	**22**	**60**	**44**	**27**	**31**	**102**

Source: Athena Research

The long term growth sectors for Karur appear to be automobile, construction and textile. The textile industry is already well established in the district with medium and small firms and is expected to grow. Food processing and BFSI industries will require an enabling environment to grow, and are expected to expand rapidly over a span of several years.

10.7 Skill Gap

The largest skill gap is at the semi skilled level at 15,000 in 2012-17 and 25,000 in 2017-22. There is estimated to be an excess availability of human resources at the unskilled level. However, with an increasing number of youth opting for skilling, this gap is expected to be neutralized by 2022. At the skilled level, the gap is estimated to be 4,000 in 2012-17 and 11,000 in 2017-22.

Table 10-12: Skill Gap in 000's

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	22	17	22	**60**	44	27	31	**102**
Incremental Human Resource Availability	30	2	18	**50**	34	2	20	**56**
Skill Gap	**-8**	**15**	**4**	**10**	**10**	**25**	**11**	**47**

Note: Figures in negative indicate excess supply

Source: Athena Research

The pattern of skill gap suggests sustained increase in the requirement for semi skilled and skilled human resources with the growth of sectors such as textiles and construction. This trend will continue in the next period, as human resource requirements rise with overall industry growth. The growth of skill-intensive industries such as automobile and BFSI will mean that skilled human resources will have opportunities within the district.

Qualitative Skill Gap

Low emphasis on formal skill acquisition

Formal skill acquisition is relatively low in the district. Most of the people learn the skills required for work on the job. There is some interest in skill development, but there should be greater interaction between skill training providers and industry to ensure that the curriculum is more relevant to their work. There is also a need for more focused training for fungible skills, such as masonry, carpentry and electrical work.

Difficulties in mobilizing students at the lower skill levels

There are a number of bus body building and textile units in the district, with a large demand for semi- skilled and skilled workers. There are also many industry sponsored ITIs and training institutes in the district. Despite the presence of local demand, ITIs find mobilizing students for L1 and L2 level trades very challenging, owing to the rising preference for white collar jobs and formal education in the district.

Unavailability of quality trainers

The World Bank-funded Pudhu Vaazhvu Project has recently proposed training for Women Self Help groups. The project is expected to commence soon. The government is also currently looking to partner with organizations that can help provide training courses for trades such as masonry and carpentry. However, the impact has been subdued, owing to non-availability of quality trainers in the district.

10.8 Youth Aspirations

Table 10-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	**Low**
Employment Potential	**High**	Automobile, BFSI	Construction, Textiles
	Low	Electronics, Education	Agriculture, Handloom, Chemicals

Source: Athena Research

Lack of mobility between formal and vocational streams

The youth are fairly well-informed about market demand and opportunities and the districts enjoys fairly high education levels. However, the enrolments in the vocational institutes have been low. Students interviewed in the focused group discussions identified the lack of vertical mobility options and the poor wages associated with vocational skilling as being the primary reason for low enrolment or high drop outs from vocational institutes

Preference for formal education

The district being less developed; witnesses a large presence of traditional industries creating a high preference for firms like textiles and construction among the youth. This necessitates the need to promote skill development and its associated benefits in the district. Interviews with students revealed that sectors like agriculture and chemicals were least preferred by the youth due to unfavorable working conditions in these industries and also due to the general lack of interest in the agricultural sector across the state. There is a high preference for formal education since large industries are the only ones that typically hire off campus.

10.9 Recommendations

10.9.1 State Government

Integration between formal and vocational education streams

The state and local government should focus on promoting vocational education as a viable alternative to formal education. Student mobilization should be a major priority in the district. At the same time, highly performing students at the 12th standard level should be encouraged with scholarships and incentives to take up tertiary education to bridge the gap skilled workers.

The strong preference for formal education causes the youth to avoid enrolling in vocational education. Vertical and horizontal mobility to the vocational graduates through benchmarking of such diplomas with formal education should be provided. The NVEQF framework is attempting to develop this at the national level. At the district level, efforts must be made to catalyse the transition away from the current system to one where there is greater interaction between vocational and formal streams.

Action Plan

d. Media campaigns to promote vocational education
e. Inclusion of basic subjects covered in degree courses in vocational training courses to allow transition from vocational to formal education, should the student desire to make such a change.
f. Providing exposure on vocational education at the 10+2 level through presentations and discussions with school students to position skill training as an alternative to formal education.
g. Benchmarking vocational education diplomas and certificates with specific levels of formal educational attainment, similar to professional courses to make it possible for students to pursue further formal education, if they so desire.

Focus on Women

Female literacy rates in the district stand at 71 %, which is lower than that of males (86.8%), necessitating gender specific polices. Self Help Group models have demonstrated successful results in a number of backward districts.

Action Plan:

a. Focus on training women in backward blocks.
b. Leverage local level information channels and networks to disseminate information regarding skill development.
c. Training for small industries in sectors such as textiles and food processing may be undertaken on this mode.
d. Upgrade training infrastructure and facilities at existing ITIs through the provision of hostels and other basic facilities to encourage enrolment.

10.9.2 Industry

Partnerships for Up-Skilling

The future high growth sectors like textiles, automobiles, BFSI and construction are clustered in the industrial areas of the district. It is possible to form partnerships with training providers to provide on-site programs to up-skill existing workers.

Action Plan:

a. It is recommended that industry partner with training providers in industrial clusters by partnering with them or creating captive training schools.
b. Provide inputs on curriculum and equipment to be used.
c. Up-skill existing workers through short-term training modules provided on-site to minimize investment in additional infrastructure.

Increase desirability of jobs in manufacturing sectors through improved work environment

The preference for formal education is driven by the association of vocational education with blue collar jobs, which often have poor working conditions and low adherence to health and safety norms. The mismatch in youth aspirations may be addressed by increasing the desirability of jobs at the lower skill levels through improved working conditions.

Action Plan:

a. Industry Association should create awareness on the need for improvements in work conditions
b. Industries, especially in high risk sectors such as construction, must emphasize on the motivational aspect of working conditions through employee feedback, performance appraisal systems, part compensation in kind, etc.
c. Introduce training and induction period for workers at all skill levels

10.9.3 Training Providers

Improve the quality of instructors

The unavailability of quality trainers is a deterrent to enrolling in vocational training. In the absence of good instructors to deliver the training, the overall student morale is observed to be low and the absorption from skill training initiatives is limited.

Action Plan:

a. Revise and standardize the qualifications of teachers to suit the new curriculum standards
b. Induct teachers into the new curriculum and conduct a set of orientation courses to equip the teachers to deliver the new curriculum
c. Raise compensation for trainers to attract quality trainers and restructure the pay scales with a larger variable component linked to performance
d. Undertake training sessions in-house to up-skill instructors on courses.

Improve the enrolment of girls

Surveys in the district indicate that a gender blind approach towards delivering training have not worked very well in the backward regions of the district. Most of these areas are seen to register a very low level of enrolment of girls, owing to hesitation by their families to send the girls to an institution for training. There is a clear need to introduce mechanisms to encourage people to send girls to the training centre.

Action Plan:

a. Deploy female trainers in training centres in the backward regions. Women trainers provide safety and protection for the girl students and are seen to give them the confidence and opportunity to follow their own paths
b. Undertake community outreach drives and hold interactions with parents on the benefits of skilling their girl child

10.9.4 NSDC

Strengthen train the trainers programs

Instructors are the fulcrum of a training institute and are the most critical input into the performance of the institute. Primary surveys in the district reveal that most training institutes suffer from the lack of good quality instructors. Further, there is lack of standardization of eligibility criteria for trainers both for entry and advanced levels resulting in varying criterion adopted by training institutes to select trainers. Government training institutions follow certain standard norms and procedures for selection of trainers while private training institutes and those run by NGOs follow their own ways of selection

Action Plan:

a. Undertake interviews to identify the issues, challenges and gaps in the trainers skills in the district, particularly for the automobile sector
b. Promote modular courses for teachers, to help them up-skill themselves on the job
c. Collaborate with industry to design refresher programmes to skill faculty
d. Engage master trainers to support the development of teacher training modules
e. Identify and support teacher training institutes
f. Create standard norms for certification of trainers based on level of training and type of training

Facilitate optimal pricing of training programmes

Primary surveys reveal that several youth in district do not enroll into vocational programs as they perceive the cost of training to be much higher than what they can earn post completion of the programme. Therefore, pricing the training delivered appropriately is a critical component.

Action Plan:

a. Focus on high growth sectors such as automobile, construction, BFSI and textiles
b. Map the various courses delivered in the district and the likely wages associated with each
c. Undertake a 'willingness to pay' survey among the students for different types of trades. Use the information to compare how students perceive the utility of different trades as against how the market behaves.

d. Capture the actual fee charged for every trade and correct for any distortion based on market reality
e. Disseminate information among students on the ideal charges for different types of trade and the likely wage rates

11 Krishnagiri

11.1 Overview

Krishnagiri was carved out of Dharmapuri in 2004 as the 30th district of Tamil Nadu. The name means Black rock, hinting at the vast granite resources in the district. The patterns observed in Dharmapuri largely carry over to Krishnagiri. It is the eight largest district, with over four percent of the total land area, and is sparsely populated. Most of the land is under forest cover. The district is strategically close to Bangalore, and houses the important industrial town of Hosur. It is divided into five taluks and ten blocks with two corporations. There are seven town panchayats, 636 revenue villages and 337 panchayat villages.

Table 11-1: Basic Information (2010-11)

District Information	Krishnagiri	Tamil Nadu
Number of inhabited villages	0	15,400
Area (Sq Km)	5,325	127,905
% of state area	4.16	100
Area rank	8	-
Revenue divisions	0	-
Taluks	5	-
Blocks	10	-
Corporation & municipalities	2	-
Town panchayats	7	-
Revenue villages	636	-
Panchayat villages	337	-

Source: District Statistical Handbook (2010-11)

11.2 Demographic Profile

Krishnagiri is a not a particularly populous district and contains about two percent of the state's population. The growth rate too is low at 1.18% per annum which indicates that the demographic scenario looks to be stable in the near future. The majority of the population in Krishnagiri lives in rural areas while the urban population accounts only for 23% of the total. The sex ratio is significantly worse than the state average at 960 females per 1000 males. The proportion of the working age population is below state norms at 61%. The combination of low population growth, agrarian population and low working age population indicate a slowing rate of growth for the district. Despite the non availability of data on Human development indices, the similarity with Dharmapuri suggests levels of human development are also similar.

Table 11-2: Demographic Indicators (2011)

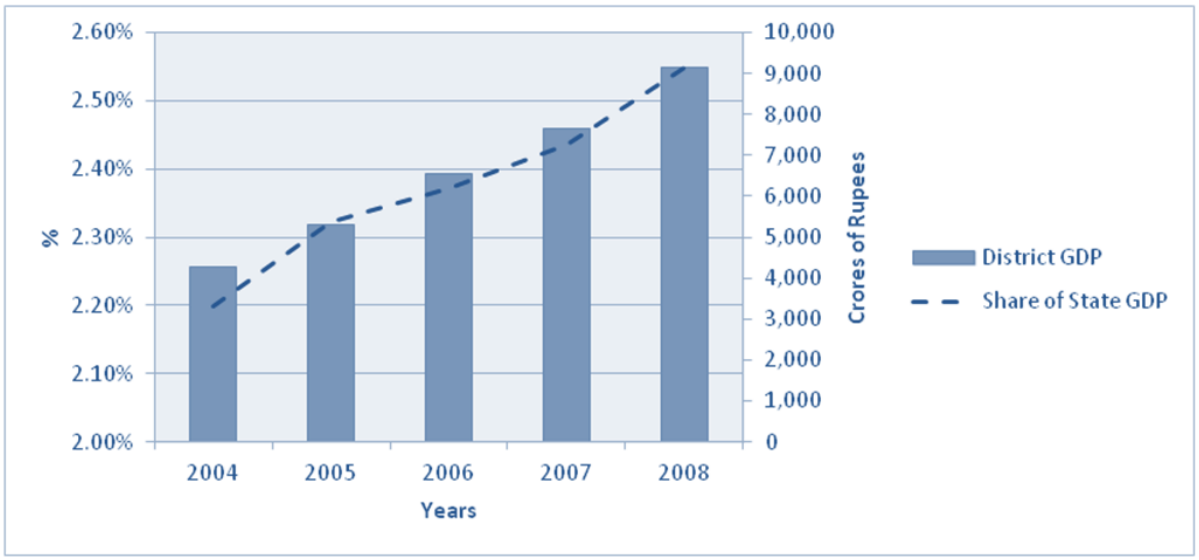
Population	Krishnagiri	Tamil Nadu
Population	1,883,731	72,138,958
Share of state population (in %)	3	100
Population density (per sq. km.)	353.77	564
Urban population percentage	22.75	48.45
Total population annual growth rate (in %)	1.18	2
Urban population	428,480	34,949,729
Sex ratio (number of females per 1000 males)	956	995

Source: Census 2011 (Provisional)

11.3 Economic Profile

The contribution of the district to state GDP has varied between a high of 3.3% and a low of 3.05%. The contribution has moderated in recent years and is steady at about 3.15% in 2008-09. Per capita incomes are low relative to the state, and urban rural disparity is wide. The district does moderately well on human development indicators like HDI and GDI, with scores of 0.64 for both, but still trails the state average.

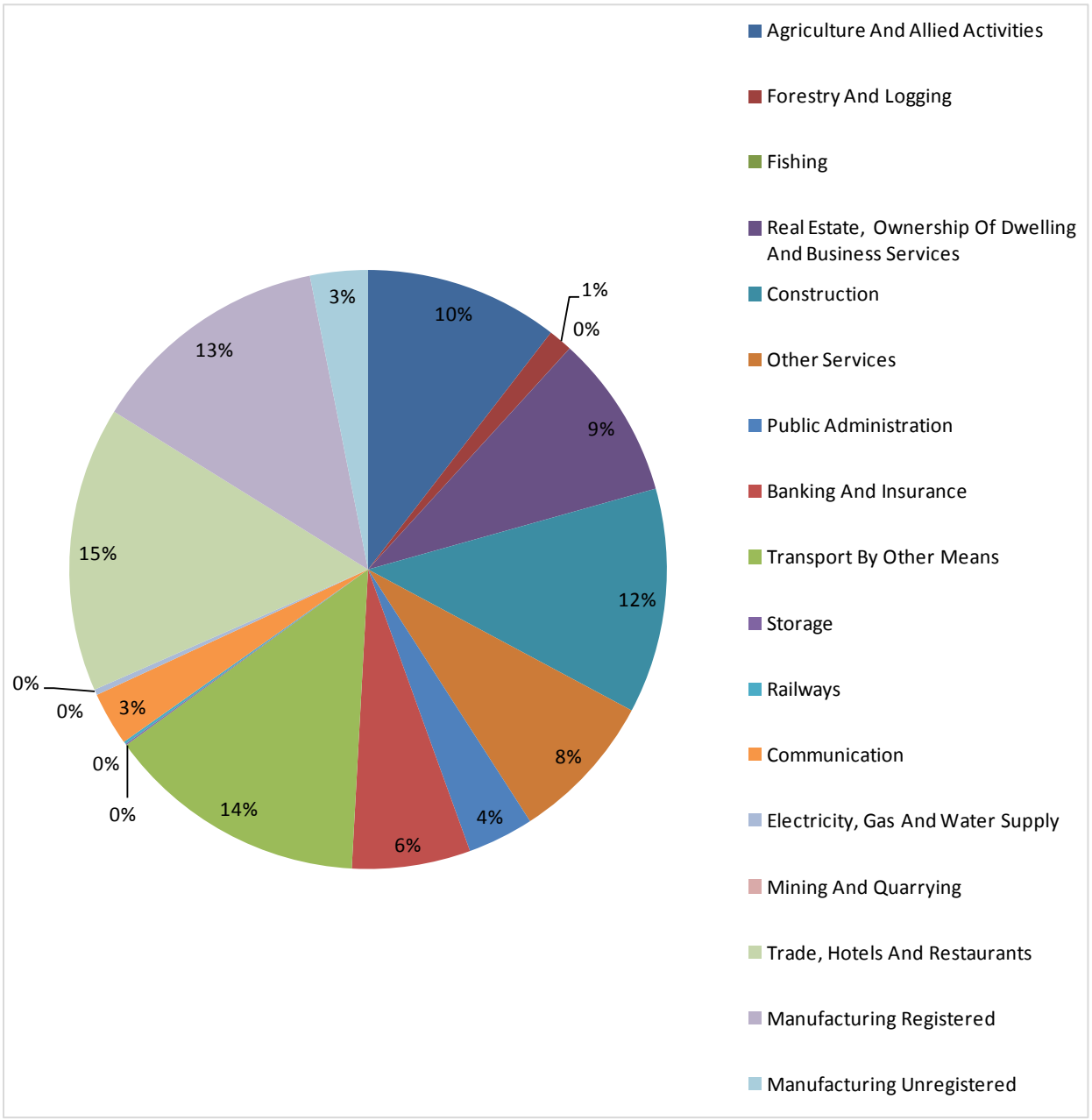
Figure 11.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Transport accounts for 14% of district GDP, followed by railway services at 12%. Agriculture accounts for ten percent while fishing activities accounts for another two percent. Manufacturing accounts for 28%, of which nearly half is unregistered manufacturing. Other dominant sectors include real estate and communication.

Figure 11.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 11-3: Per Capita Income (2011-12)

Human Development Indicators	Krishnagiri	Tamil Nadu
Per capita urban income	62,100	100,600
Per capita rural income	27,400	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

11.3.1 Agriculture

Krishnagiri is a primarily agricultural district. The majority of the labour force is engaged in agricultural activity. The labour force engaged in industrial activity accounts for only about one percent of the total in almost all the taluks. Denkanikottai has about two percent of the total labour force engaged in industrial activity. There is a large proportion of labour engaged in unregistered or unclassified activities in all the taluks. This likely represents the unorganized or small scale industries sector. It can be seen that 46% and 53% of the labour force in Krishnagiri and Hosur fall under this category, whereas it is only about 30-40% for the other taluks. This suggests that there are clusters of small scale industries like food processing supporting the major economic activities in these cities.

Nearly 76% of the total sown area is under food crops. About 49% of this sown area is under cereals, 16% under pulses and 29% under fruits and vegetables. Non food crops include sugarcane, cotton, oil seeds and tobacco. Around 24% of the total sown area is under non-food crops. Almost 6% of this area goes to sugarcane while oil seeds have a share of 41% of the remaining sown area. Yield is higher than the state for cereals, vegetables and fruits, cotton and oil seeds, while it is lower than the state for all other major crop groups.

Table 11-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	72,200	49.58%
Pulses	24,337	16.71%
Condiments	2,817	1.93%
Fruits and vegetables	43,526	29.89%
Other	2,746	1.89%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	2,512	5.58%
Cotton	1,527	3.39%
Oil Seeds	18,652	41.47%
Tobacco	0	0.00%
Other	22,291	49.56%
Total Area under Food Crops	**145,626**	**76.40%**
Total Area under Non Food- Crops	**44,982**	**23.60%**

Source: Tamil Nadu Crop Report (2011-12)

Table 11-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield for Krishnagiri	Yield for Tamil Nadu
Cereals	14,701	12,136
Pulses	2,552	2,763
Sugarcane	89	101
Condiments	14,543	32,440
Vegetables	184,212	164,422
Mango	6,943	4,795
Cotton	392	368
Tobacco	0	1,524
Oil seeds	21,659	16,484

Source: Tamil Nadu Crop Report (2011-12)

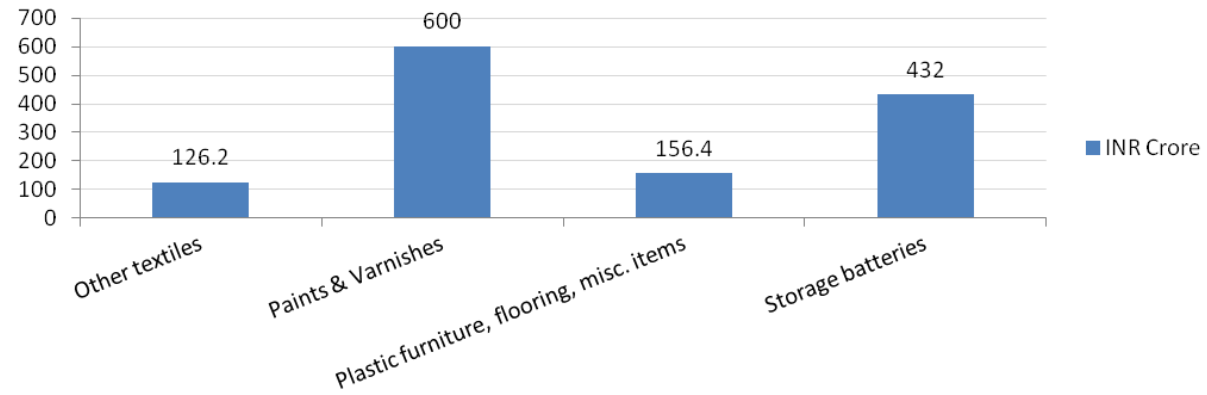
11.3.2 Industry

Over 50,000 people are employed in the industry sector in Krishnagiri. SIPCOT has developed large industrial complexes at Hosur and Bagyar with plans, in association with SIDCOT, to develop the area for more than 500 industries. The major sectors represented in this complex are automobiles, heavy machines, chemicals and metals. The Tata Group and TIDCO have a joint venture in the region in the form of a Titan manufacturing plant, producing watches, clocks and jewellery. Besides this, the district has a low level of industrialization, with existing industries primarily focused in the agro processing space.

There are a number of granite quarries clustered around Hosur. The granite found in this region is known as 'paradise' and is famously multi coloured. It is a major source of exports to the European Union. The suitability of the district for horticulture and sericulture indicate the potential for growth in small scale industries based on these sectors.

The proximity to Bangalore and good connectivity through the northern industrial belt of Tamil Nadu indicates the potential for further industrial development. Capex data indicates significant investments in paint, textiles, plastics and batteries, likely in the existing cluster around Hosur.

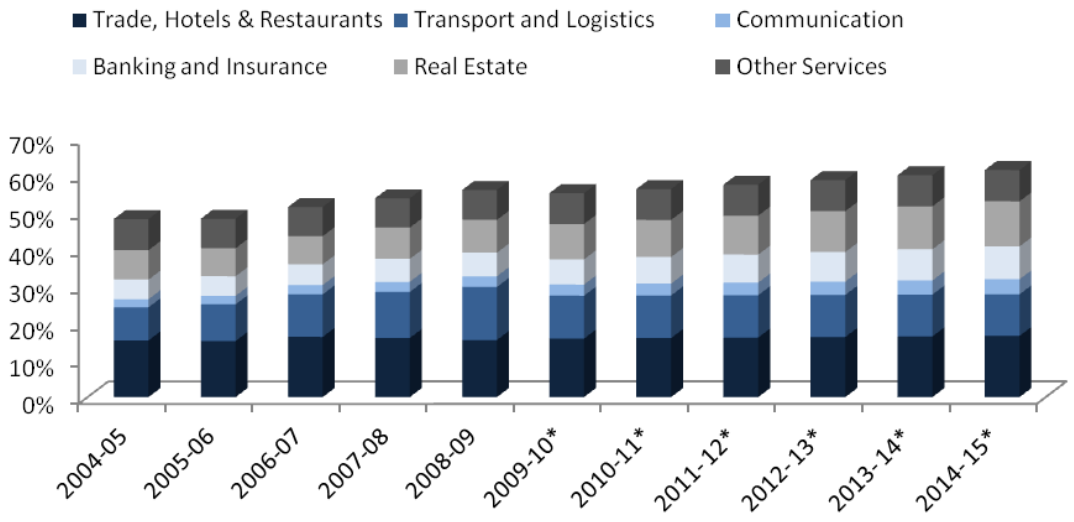
Figure 11.3: Investments in INR Crore



Source: Capex, CMIE (2012)

11.3.3 Services

Figure 11.4: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The service sector is expected to grow at a moderate rate and contribute to almost 59% of district GDP in 2012-13 as against 56% in 2008-09. While the overall growth is not very impressive, the transport and logistics sector in the district has remained a statistical outlier and has recorded a CAGR of 27% between 2004-05 and 2008-09 and contributed to almost 14% of the district GDP as on 2008-09.

Approximately 1.18 lakh people are employed in the services sector. The lack of urbanization leads to an extremely low level of services in the district. The existing services primarily support the agro based economy in the form of logistics. There are about ten hospitals, 39 dispensaries and 238 primary health centres in the region with a bed strength of 577. There are 135 branches of various commercial banks distributed about the district, mainly concentrated around its main cities, Hosur and Krishnagiri.

Transport infrastructure is similar to its parent Dharmapuri, but more concentrated around the important industrial town of Hosur. The region's lone airport is located at Hosur and serves domestic flights. 1643.968 km of roads run through the district, with national highways passing through Krishnagiri and Hosur towards Andhra Pradesh and Karnataka. There is 105 km worth of rail tracks, with a major route passing through Hosur.

11.4 State of Education

The literacy rate in Krishnagiri is significantly higher than its parent district Dharmapuri, though still much below the state average at 72%. Female literacy in 2011 stood at 65% and male literacy was 80%.

Table 11-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	NA	64.86	-
Male	NA	79.65	-

Source: Census 2001, Census 2011(Provisional)

There are 1,094 primary schools, 307 upper primary schools, 159 secondary and 199 higher secondary schools in the district. Net enrollment ratios are high for the primary level, at nearly 99%, but drop off to 94% for the upper primary level. Drop out rates are high at the primary level at 16% and the upper primary level at 11%.

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 90,389, while enrolment in schools that had primary and upper primary classes was 69,275. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 83,642, while enrolment in schools with upper primary and secondary/ higher secondary classes was 52,661.

Table 11-7: Education Profile (2010-11)

Educational Statistics	Units in Krishnagiri	Units in Tamil Nadu
Primary	1094	33,909
Upper primary	307	8,552
Secondary	159	4,436
Higher secondary	199	4,632
NER – Primary (%)	98.59	98
NER - Upper primary (%)	94.54	98
Dropout rate- Primary (%)	6.03	3.81
Dropout rate - Upper primary (%)	10.98	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

There are seven engineering colleges and four arts and sciences colleges in the district. There are four polytechnics. The ITI at Hosur has an intake capacity of 372. In 2012, 217 students were enrolled.

Table 11-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	7
Arts and sciences	4
Management	0
Medical	0
Dental	0
Nursing	0
Pharmacy	0
Other medical	0
Teacher training and education	0
Hospitality	2
Fashion technology	0
Polytechnics	4
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

11.5 Incremental Human Resource Availability

The current work force is estimated to be 7.87 lakh, which is estimated to grow to 10.13 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 1.07 lakh and in 2017-22, the incremental availability is estimated to be 1.2 lakh.

Table 11-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	1,910	1,263	806	787		
2017	2,126	1,400	913	893	107	
2022	2,369	1,551	1,034	1,013		120

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level.

Table 11-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	80	3	23	107
2017-22	90	3	27	120

Source: Athena Research

11.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the unorganized sector, construction, textiles, food processing and automobile. Transportation and logistics is also likely to see a significant rise in human resource requirements. The human resource requirement in the agriculture sector is expected to decline by 35,000 in 2012-17 and 30,000 in 2017-22.

Table 11-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-29	-1	-5	**-35**	-25	-1	-5	**-30**
Automobile	1	1	0	**3**	2	2	1	**5**
Chemicals and Pharmaceuticals	0	0	0	**0**	0	0	0	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	1	0	0	**2**	2	0	0	**2**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**0**	0	0	0	**1**
Handlooms & Handicrafts	0	0	0	**0**	0	0	0	**0**
Leather	0	0	0	**0**	0	0	0	**0**
Textiles	6	1	1	**8**	8	2	2	**11**
BFSI	0	1	2	**3**	0	1	3	**4**
Construction	25	5	2	**32**	55	10	5	**70**
Education	0	0	1	**1**	0	0	1	**1**
Healthcare	0	0	1	**1**	0	0	1	**1**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	0	1	1	**2**	0	1	2	**3**
Organized Retail	2	0	1	**4**	4	1	3	**7**
Real Estate	0	0	1	**1**	0	0	1	**1**
Tourism & Travel	0	0	0	**0**	0	0	0	**0**
Transportation & Logistics	3	1	1	**5**	4	1	1	**5**
Unorganized (excluding Agriculture and Construction)	34	17	24	**76**	40	26	31	**98**
TOTAL	**45**	**27**	**31**	**102**	**90**	**45**	**45**	**179**

Source: Athena Research

11.7 Skill Gap

The largest skill gap is at the semi skilled level at 24,000 in 2012-17 and 41,000 in 2017-22. There is estimated to be an excess availability of human resources at the unskilled level in 2012-17. However, with an increasing number of youth opting for skilling, this gap is expected to be neutralized by 2022. At the skilled level, the gap is estimated to be 7,000 in 2012-17 and 18,000 in 2017-22, with the growing trend towards raising the overall skill level of the workforce.

Table 11-12: Skill Gap in 000s

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	45	27	31	**102**	90	45	45	**179**
Incremental Human Resource Availability	80	3	23	**107**	90	3	27	**120**
Skill Gap	**-35**	**24**	**7**	**-5**	**1**	**41**	**18**	**60**

Note: Figures in negative indicate excess supply

Source: Athena Research

The pattern of skill gap suggests sustained increase in the demand for semi skilled and skilled labour. Traditional industries such as food processing and textiles will continue to be large employers of unskilled workers. However, with modernization of production processes, there will be a trend towards employing more skilled workers. This trend will continue in the next period, as industry expands. The growth of high technology and skills industries like automobile will create requirements for skilled workers within the district itself.

Qualitative Skill Gaps

Lack of emphasis on basic skills

The district is currently facing an acute shortage of workers with basic skills to function in the capacity of welders and fitters. There is also a shortage of CNC machine operators. Additional skilling capacity in these areas is essential for industrial growth. Interactions with government stakeholders suggest that significant growth in the demand for skilled workers is expected over the next five years in industries such as food processing and readymade garments, particularly at the L1 and L2 levels. One of their main concerns is that Krishnagiri has seen limited industrial growth concentrated around specific areas. Industrial development in all parts of the district is considered a prerequisite for creating incentives for acquiring skills.

Low Propensity to acquire Basic, lower level skills

Very few of the locals are willing to work in the industries, particularly at the L1 and L2 levels. Most of the employees in industrial units are migrant workers. A large number of casual labourers belong to north-eastern states such as Assam, Manipur and Mizoram. There is also a high level of migration from other districts of Tamil Nadu such as Madurai, Tirunelveli, Thiruvannamalai and Dharmapuri. However, this has not had a significant impact on the cost of labour since accommodation is still affordable in Krishnagiri, even in industrial centres like Hosur.

High attrition prevents assimilation of skills

High attrition makes operations very complex. Frequent change of jobs prevents the workers from acquiring specific technical skills. Employees often leave jobs without notifying the employer and firing workers leads to unrest in the district. This has encouraged contract labour and prevented the local community from evolving and assimilating their skills.

11.8 Youth Aspirations

Table 11-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	Automobile, Transport	Construction, Food Processing
	Low	IT/ITES	Agriculture

Source: Athena Research

Skill sets and abilities do not match educational attainment

Students from polytechnics or engineering colleges have higher expectations but do not have the necessary skills to perform the jobs they want. Further, students who go to polytechnics or engineering colleges are unable to find jobs. One of the major constraints is the lack of soft skills, particularly the knowledge of English and the ability to operate computers.

Quality of students enrolling in vocational institutes very poor

A majority of the students enrolled in Industrial Training Institutes (ITIs) belong to Economically Weaker Sections (EWS). Monetary incentives are provided to students at government ITIs. Students who have the resources to pursue education prefer to enrol in engineering colleges or polytechnics. The rise of private engineering colleges has led to a decline in the quality of students enrolling in vocational courses over time.

Further, students who seek training in vocational trades are students who have not performed well academically, often school dropouts. There is a shortage of masons and electricians in the district, but only those who are unable to pursue formal education invest in such skills

The industry prefers multi-skilled people, but students who enrol in vocational training are typically those who did not perform well academically or did not have access to good schools. As a result, they are unable to cope with more demanding courses that are tailored to industry requirements, leading to high dropout rates.

Preference for unorganized sector jobs

Very few of those who undergo vocational training are self-employed. Further interviews with the youth revealed that many of them choose to work in the unorganized sector since they are paid on a daily basis and have a more flexible work routine.

11.9 Recommendations

11.9.1 State Government

Improve ITI infrastructure and performance

Primary research reveals that ITI graduates are often treated at par with 10th pass workers by employers, indicating no returns to investment in skilling. This must be addressed by revamping the ITIs.

Action Plan:

a. Upgrade existing infrastructure to provide hostels and other facilities to make it possible for students from far off blocks to pursue training at ITIs.
b. Upgrade equipment used for training delivery to ensure relevance of learning to industry needs. Introduce modules on basic numeracy in advanced courses to bridge the gap between basic and vocational education.
c. Provide refresher courses and tutorials for weak students.
d. Obtain feedback from industry on suitable modules and training delivery methods to ensure relevance.

Facilitate private sector participation in training

While there are a number of government schemes such as the PPP scheme for ITIs, the industry appears to be unaware of such initiatives and private sector participation in skill development is relatively low.

Action Plan:

a. Make details of all schemes soliciting private sector participation available online
b. Disseminate information through industry associations
c. Encourage private training providers by providing standardized curriculum, accreditation based on adherence to infrastructure norms, etc.

11.9.2 Industry

Short-term courses

For less skill intensive jobs in sectors such as food processing and construction, which have shown steady growth in the district, industry may up-skill existing workers and skill potential candidates through partnerships with local NGOs or training providers.

Action Plan:

a. Identify blocks where the availability of human resources is high.
b. Partner with local NGOs and training providers to engage in community outreach to raise awareness about skill development.
c. Offer short-term training courses to equip students with the basic skills required for the industry.
d. Ensure upward revision of wages on completion of the course to incentivize students to enroll.

Improve working conditions

The low preference for blue collar jobs and high attrition must be addressed through targeted measures to improve the work environment.

Action Plan:

a. Ensure adherence to health and safety standards for factory floor jobs, particularly in sectors such as automobile.
b. Institute employee feedback systems and grievance redressal mechanisms
c. Provide part compensation in kind to reduce attrition - this is already practiced to some extent in the construction sector.
d. Offer bonus for staying for one year to incentivize staying at the same job, thereby facilitating assimilation of skills on the job.

11.9.3 Training Providers

Use of existing infrastructure

Since the youth do not show much resistance to migration, skilling may be carried out at the industrial hubs. For sectors such as construction, food processing and retail, training may be imparted at the work place.

Action Plan:

a. Institute courses that impart training on the job in partnership with industry. Such courses may offer theoretical training once a week combined with hands on experience for the rest of the week.
b. Adopt short training modules to minimize opportunity cost to students.
c. Include soft skills and organizational behavior in the curriculum to address issues regarding attitude to work.

Focus on quality

The qualitative gaps in skilling were apparent in the course of the primary research. It is important, therefore, to make a conscious effort to improve quality of training.

Action Plan:

a. Obtain approval for curriculum and pedagogy from the relevant SSC.
b. Partner with industry to ensure placements for the students.
c. Facilitate alumni interactions to rationalize job expectations.
d. Create standardized evaluation systems in consultation with the SSCs and the state government to ensure uniformity in the level of ability indicated by the possession of vocational training qualifications.

11.9.4 NSDC

Capacity Creation

There is a need for focused capacity creation for sectors such as automobile, electronics and logistics.

Action Plan:

a. Set up training facilities in industrialized parts of the district to ensure proximity to potential employers.
b. While the youth do not show much resistance to migration, adequate infrastructure and facilities must be provided at the training location to incentivize them to enroll in vocational training.
c. Focus on semi skilled level courses for sectors such as automobile.
d. Offer career counseling to control drop outs from the institute and attrition from industry.

Quality control

Since the development of training infrastructure is relatively low in the district, the SSCs may play a proactive role in standardization of quality for additional capacity created in the district.

Action Plan:

a. Develop standardized content by industry, mandating the inclusion of specific topics in the courses.
b. Accredit institutions that comply with SSC guidelines.
c. Maintain a database of skill training providers in the district.
d. Develop and disseminate a standardized evaluation framework based on competency benchmarks.
e. Bridge information gaps among industry, students and training providers through the Labor Market Information System.

12 Madurai

12.1 Overview

Situated in the Southern part of Tamil Nadu, Madurai covers an area of about 3886 square kms, and is bordered by the district of Theni in the West, Dindigul and Tiruchirappalli districts in the North, Sivaganga district in the East and Virudhunagar in the South. On the administrative front, the district is divided into two revenue divisions, comprising of seven taluks, 51 firkas and 669 villages. The various cities and villages of the district are administered by the three municipalities, 15 town panchayats and 431 village panchayats.

Table 12-1: Basic Information (2010-11)

District Information	Madurai	Tamil Nadu
Number of inhabited villages	550	15,400
Area (Sq Km)	3,886	127,905
% of state area	3.04	100
Area rank	17	-
Revenue divisions	2	-
Taluks	7	-
Blocks	13	-
Corporation & municipalities	7	-
Town panchayats	12	-
Revenue villages	664	-
Panchayat villages	431	-

Source: District Statistical Handbook (2010-11)

12.2 Demographic Profile

Madurai is one of the most populated districts of Tamil Nadu, contributing about four percent to the total state population. The annual population growth rate however, is lower than the state average at 1.16%. The district is mostly urbanized, with over 60% of the population residing in urban areas. The proportion of SC and ST population too, is far lower than most of the other districts in Tamil Nadu at 10.63% and 0.2% respectively.

A majority of the district's population lies in the working age category, higher than the state average. The worker participation rate however, is only about 50% of the working age population. Agriculture seems to be a significant source of employment for the residents of the district, contributing over 30% to the total employment figure. The district is also relatively well developed, with both its HDI and GDI figures higher than the state average at 0.661 each.

Table 12-2: Demographic Indicators (2011)

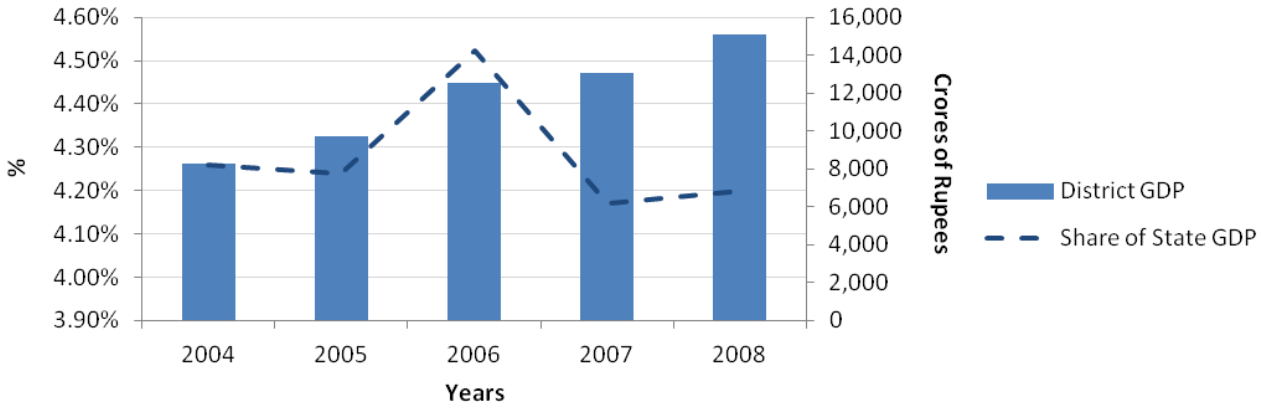
Population	Madurai	Tamil Nadu
Population	3,041,038	72,138,958
Share of state population (in %)	4	100
Population density (per sq. km.)	782.66	564
Urban population percentage	60.64	48.45
Total population annual growth rate (in %)	1.16	2
Urban population	1,844,209	34,949,729
Sex ratio (number of females per 1000 males)	990	995

Source: Census 2011 (Provisional)

12.3 Economic Profile

The contribution of the district to state GDP has varied between a high of 4.5% and a low of 4.2%. The contribution has moderated in recent years and is steady at about 4.2% in 2008-09. The per capita income of the district is approximately INR 60,000, which is lower than the total state average, but comparatively higher than most of the other districts in Tamil Nadu. However, there is a vast difference between the rural and urban incomes of the district, with rural incomes constituting just about 50% of the urban income levels. The district does moderately well on human development indicators like HDI and GDI, with scores of 0.66 for both, greater than the state average.

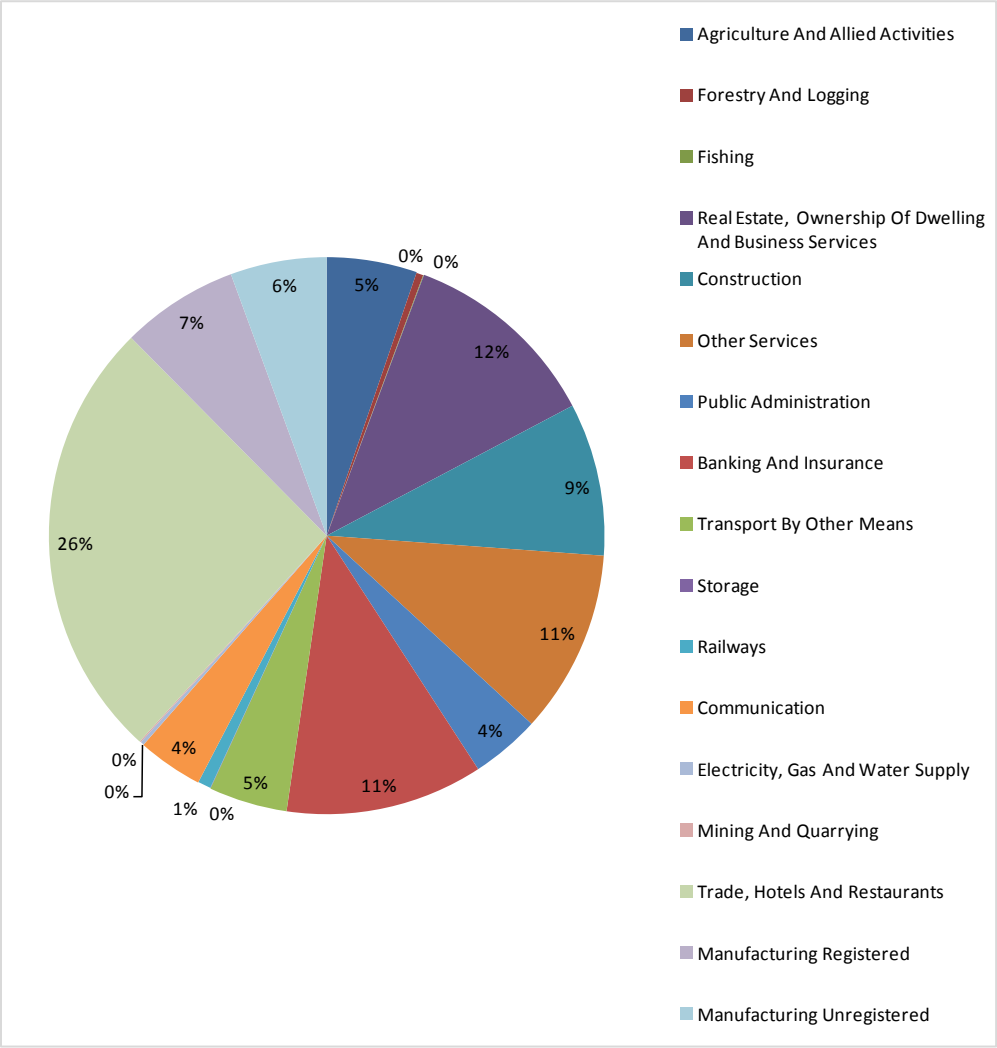
Figure 12.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Trade, hotels and restaurants accounted for 17% of district GDP, followed by real estate services at 12%. Agriculture accounts for five percent. Manufacturing accounts for just 13%, of which nearly half is unregistered manufacturing. Other dominant sectors include banking and financial services, communication and railways.

Figure 12.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 12-3: Per Capita Income (2011-12)

Human Development Indicators	Madurai	Tamil Nadu
Per capita urban income	75,500	100,600
Per capita rural income	36,800	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

12.3.1 Agriculture

Agricultural laborers constitute about 30% of the total workers, while cultivators account for 11%. Furthermore, majority of the working population is constituted by main workers, which indicates that work was available for major part of the year for over 87% of the total workforce in the district.

Around 78% of the total sown area is under food crops. About 74% of this sown area is under cereals, seven percent under pulses and 11% under fruits and vegetables. Non food crops include sugarcane, cotton, oil seeds and tobacco. Nearly 22% of the total sown area is under non-food crops. Almost 16% of this area goes to sugarcane, 25% is under cotton while oil seeds have a share of 18% of the remaining sown area. Yield is higher than the state for pulses, while it is lower than the state for all other major crop groups.

Table 12-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	86,588	74.15%
Pulses	8,970	7.68%
Condiments	2,657	2.28%
Fruits and vegetables	13,273	11.37%
Other	5,282	4.52%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	5,035	15.79%
Cotton	8,065	25.29%
Oil Seeds	5,858	18.37%
Tobacco	0	0.00%
Other	12,934	40.56%
Total Area under Food Crops	**116,770**	**78.55%**
Total Area under Non Food- Crops	**31,892**	**21.45%**

Source: Tamil Nadu Crop Report (2011-12)

Table 12-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield for Madurai	Yield for Tamil Nadu
Cereals	11,862	12,136
Pulses	2,754	2,763
Sugarcane	68	101
Condiments	9,014	32,440
Vegetables	73,788	164,422
Mango	3,298	4,795
Cotton	245	368
Tobacco	0	1,524
Oil seeds	15,921	16,484

Source: Tamil Nadu Crop Report (2011-12)

12.3.2 Industry

Over 84,000 people are employed in the focus industry sectors. Although the past few years have brought about significant industrial policy changes, Madurai's industrial growth still remains slow leading to vast disparities within the district. Most of the existing industries within the district are either small or medium scale industries, focusing mainly on food processing, textiles and metals. Textiles form a major part of the small scale industries,

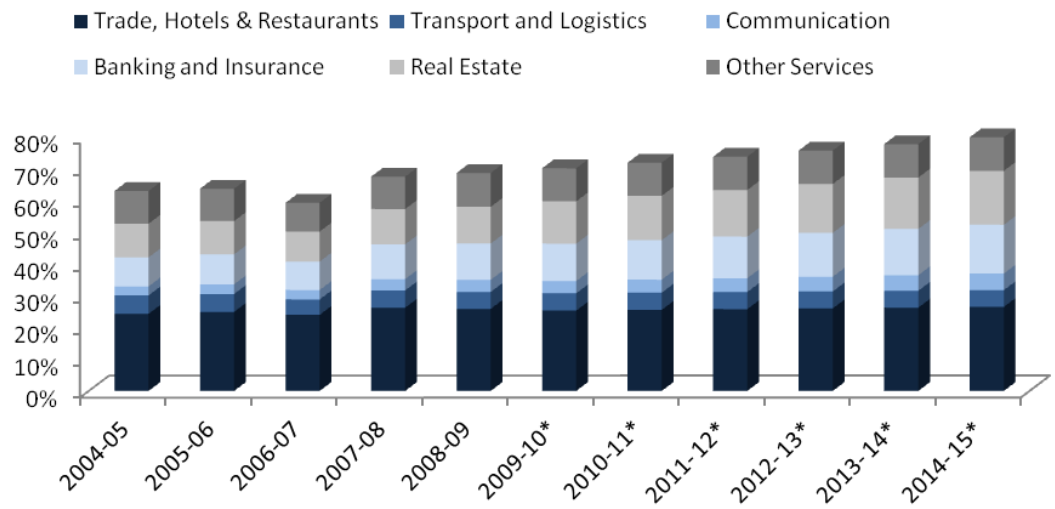
with more than 3500 units, while metal and metal products manufacturing follows closely, with about 3000 operational units. Although machine manufacturing doesn't form a major part of the industrial set up, a proposed investment of INR 1,00 crores suggests that the subsector will witness significant growth in the future.

Over the past few years, various industrial estates have been established in the district for fostering balanced development of the Small Scale Industry sector in the district. There are five industrial estates functioning in the district, three in Madurai and two in Kappalur. There are two SIDCO Industrial Estates in Madurai, totaling an area of about 192 acres. The other two industrial estates in Kappalur have been set up for a more target oriented development of specific sectors. One of them, the Electrical and Electronic Industrial Estate in Kappalur is owned by the Department of Industries and Commerce and covers a total area of 35 acres, with 105 developed plots. The second industrial estate is an Automobile Co-operative Industrial Estate, wherein the owners of automobile service centers have a paid up share capital amounting to INR 22.07 lakhs. There are a total of 209 members in this co-operative society, engaged in various activities related to automobile manufacturing.

Madurai city is one of the few rubber producing areas of Tamil Nadu. The abundant availability of this raw material has led to the set up of several large scale rubber based manufacturing industries in the district such as TVS Srichakra, Sundaram Industries, Fenner India, Hi-Tech Arai Ltd., among others. These companies supply their products to large and well known automobile companies such as General Motors, Ford, Toyota and Honda.

12.3.3 Services

Figure 12.3: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The services sector is a key contributor to the district output of Madurai and is expected to contribute to 76% of district GDP in 2012-13 as against 69% in 2008-09. The communication sector followed by banking and insurance are the key drivers of growth and are seen to register CAGRs of 18% and 16% respectively between 2004-05 to 2008-09.

Over 5.09 lakh people are employed in the service sectors. The presence of Meenakshi Amman temple located along the river Vaigai in Madurai attracts an average of 15,000 visitors on a working day and close to 25,000 visitors on holidays and religious occasions. The 2,500 year old history coupled with a multitude of temples and mosques are important factors, significantly boosting the tourism and hospitality sub sectors' earnings every year. Madurai city, in particular, has witnessed a rise in tourism levels since 2002. However, primary research reveals that a major part of the hospitality sector is unorganized, thereby failing to contribute to the productive growth of the district's economy.

12.4 State of Education

The district fares reasonably well, with a total literacy rate of 82%, increasing by over five percent in the last decade. The male and female literacy rates have also shown an upward trend – female literacy in particular, has increased over ten percent in the last ten years. Similarly, male literacy figures have increased by about five percent, from 83.1% in 2001 to 88.61% in 2011.

Table 12-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	69.40	76.74	0.11
Male	86.20	86.55	0.00

Source: Census 2001, Census 2011(Provisional)

There are 1,311 primary schools, 344 upper primary schools, 185 secondary and 243 higher secondary schools in the district. Net enrollment ratios are high for the primary level, at nearly 98%, but drop off to 96% for the upper primary level. Dropout rates are low at the primary level at 2.6% but high at the upper primary level at six percent.

Table 12-7: Education Profile (2010-11)

Educational Statistics	Units in Madurai	Units in Tamil Nadu
Primary	1311	33,909
Upper primary	344	8,552
Secondary	185	4,436
Higher secondary	243	4,632
NER – Primary %)	98.11	98
NER - Upper primary (%)	96.8	98
Dropout rate- Primary (%)	2.69	3.81
Dropout rate - Upper primary (%)	6.28	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 1,40,506, while enrolment in schools that had primary and upper primary classes was 1,08,066. Enrolment in upper primary schools was 243 in the same period. For schools with

primary, upper primary and secondary/ higher secondary classes, total enrolment was 1,06,711, while enrolment in schools with upper primary and secondary/ higher secondary classes was 76,874.

There are 14 engineering colleges and 43 arts and sciences colleges in the district. There are also two nursing colleges, six pharmacy colleges and two other medical colleges. There are 14 polytechnics and two agricultural colleges. The combined capacity of all the ITIs and ITCs in the district is 4,914. Details of major ITIs in the district are given in the appendix.

Table 12-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	14
Arts and sciences	43
Management	8
Medical	0
Dental	0
Nursing	2
Pharmacy	6
Other medical	2
Teacher training and education	0
Hospitality	17
Fashion technology	0
Polytechnics	14
Agriculture	2

Source: UGC, AICTE, MHRD Database (2010-11)

12.5 Incremental Human Resource Availability

The current work force is estimated to be 12.69 lakh, which is estimated to grow to 16.23 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 1.67 lakh and in 2017-22, the incremental availability is estimated to be 1.87 lakh.

Table 12-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	3,082	2,038	1,300	1,269		
2017	3,420	2,252	1,469	1,436	167	
2022	3,800	2,487	1,658	1,623		187

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level.

Table 12-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	97	9	61	167
2017-22	111	9	67	187

Source: Athena Research

12.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the unorganized sector, construction and tourism and travel. The expected growth of BFSI, organized retail points to service sector led growth for the district economy. Among the manufacturing sectors, the textiles sector is expected to see a moderate increase in human resource requirements. The human resource requirement in the agriculture sector is expected to decline by 33,000 in 2012-17 and 29,000 in 2017-22.

The long term growth sectors for Madurai appear to be construction. The textile industry is already well established in the district and is expected to grow rapidly. IT/ITES will require an enabling environment to grow, and are expected to expand rapidly over a span of several years.

Table 12-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-27	-1	-5	**-33**	-24	-1	-4	**-29**
Automobile	0	0	0	**1**	0	1	0	**1**
Chemicals and Pharmaceuticals	2	3	4	**0**	2	3	4	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	2	0	0	**3**	3	0	1	**4**
Furniture	1	0	0	**1**	2	0	0	**2**
Gems & Jewellery	0	0	0	**0**	0	0	0	**0**
Handlooms & Handicrafts	-1	0	0	**-1**	-1	0	0	**-1**
Leather	1	0	0	**1**	1	0	0	**2**
Textiles	5	1	1	**8**	8	2	2	**11**
BFSI	0	2	7	**9**	0	3	9	**13**
Construction	39	7	4	**50**	85	16	8	**109**
Education	0	0	2	**3**	0	0	3	**3**
Healthcare	0	1	2	**4**	0	1	2	**4**
IT and ITES	0	1	7	**8**	0	1	10	**10**
Media & Entertainment	0	2	3	**5**	1	3	6	**9**
Organized Retail	6	1	4	**11**	10	2	7	**20**
Real Estate	0	0	2	**2**	0	0	2	**3**
Tourism & Travel	8	28	25	**61**	12	48	43	**104**
Transportation & Logistics	2	1	0	**3**	2	1	0	**3**
Unorganized (excluding Agriculture and Construction)	55	28	39	**122**	65	42	50	**158**
TOTAL	**95**	**76**	**96**	**258**	**168**	**124**	**144**	**427**

Source: Athena Research

12.7 Skill Gap

The largest skill gap is at the semi skilled level at 67,000 in 2012-17 and 1.15 lakh in 2017-22. There is estimated to be an excess availability of human resources at the unskilled level. However, with an increasing number of youth opting for high level skills, and since the unskilled category includes those who enroll in short-term courses after Class 10this gap is expected to turn positive by 2022. At the skilled level, the gap is estimated to be 35,000 in 2012-17 and 77,000 in 2017-22.

Table 12-12: Skill Gap in 000's

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	95	76	96	**258**	168	124	144	**427**
Incremental Human Resource Availability	97	9	61	**167**	111	9	67	**187**
Skill Gap	**-1**	**67**	**35**	**92**	**57**	**115**	**77**	**240**

Note: Figures in negative indicate excess supply

Source: Athena Research

The pattern of skill gap suggests sustained increase in the demand for semi skilled and skilled labor with the growth of sectors like construction, tourism and travel, retail and BFSI. In this period, traditional industries such as textile will employ a large number of semi-skilled workers and improve their production processes.

Qualitative Skill Gaps

Low industry trainer collaboration for placement and curriculum

There are a few ITIs and polytechnics in different parts of the district. The unavailability of training staff and the mismatch between industry needs and course content leads to low recruitments from these institutes. Student mobilization is also a challenge and many of these institutes underutilize their capacity. Greater industry involvement in curriculum design and more student interaction with the industry through apprenticeships may help make these courses more relevant and suited to the job requirements.

Low labour productivity

There are a number of small scale industries in the district. The workers in such industries acquire basic skills traditionally and they learn to perform other functions on-the-job. However, there is a gap in motivation to learn and work due to low wages and irregular work, particularly in the unorganized sector. Many of these workers are not educated and so they cannot seek alternate employment in the organized sector. Low wages lead to high attrition in the industry, which constrains the productivity of these enterprises.

Lack of formalization of skills, especially at the lower skill levels

Unorganized growth of the services sector and the lack of formal skill training opportunities have led to the low availability of labour at the lower skill levels. While workers for jobs requiring higher level skills are sourced from different locations, retaining migrant workers at low-skilled jobs is seen to be a big challenge.

Students graduating out of ITIs not job ready

The vocational education currently provided in the district does not equip the students with the necessary soft skills or the ability to handle new technology. Given the rapid pace of development, educational institutes, whether formal or vocational, should provide basic skills and foster the capacity to acquire new skills quickly. A practical component to the course will make student expectations with regard to their work more realistic, thereby leading to lower levels of attrition when they are employed.

Poor compensation for skills

The wages - differences for those who have completed school and ITI graduates are not significant, which prevents people from enrolling in such courses. This situation needs to be remedied too, with perhaps an extra focus on providing those enrolling in ITIs with tangible skills, which would enable them to capitalize on wage differential.

12.8 Youth Aspirations

Table 12-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	Automobile, Transport, Hospitality	Construction, Textiles
	Low	Education, Healthcare	Gems & Jewelry, Handloom

Source: Athena Research

Low preference for vocational trades

Very few youth enroll in vocational training. Gaps in basic formal education prevent skills from being absorbed in a classroom setting. Low interest in skill development may be a function of the absence of a clear link between skill training institutes and employment and low awareness about existing skill development initiatives.

There is no shortfall of skilled labour for managerial positions. However, finding workers – even unskilled ones – for masonry or carpentry work is very difficult. People prefer to be employed in white collar jobs and so the supply of labour for blue collar jobs is very low

Engineering is the most popular profession across the district. The youth display a strong interest in sectors such as IT-ITES, engineering goods and automobile. Low dignity is associated with jobs in the agriculture sector. There is a move away from traditional jobs such as handloom, leather and lock-making. There appears to be a relatively high level of interest in entrepreneurship.

Tendency to migrate lower at lower skill levels

Students are willing to migrate to other areas for better jobs. However, at the lower skill levels, they are unwilling to migrate unless the benefits associated with such a job are significantly higher than the compensation expected from a job in a nearby area.

12.9 Recommendations

12.9.1 State Government

Awareness Campaigns

There is a strong preference for formal education, which may be addressed by providing information at the school level and conducting campaigns to promote the dignity of labor.

Action Plan:

a. Conduct media campaigns to promote the dignity of labor along with street plays in rural areas.
b. Provide information regarding vocational education at the school level.
c. Use employment exchanges to disseminate information regarding existing skill training initiatives in the district.
d. Encourage students to use the government's online resources for information on skill development.

Accreditation

A large number of private training providers are operating in the district, which creates challenges in terms of standardization. Students are unable to distinguish genuine training providers from unscrupulous players.

Action Plan:

a. In line with state level initiatives, undertake the registration and accreditation of all training providers through the District Skill Development Council.
b. Establish quality norms in terms of minimum infrastructure, equipment, capacity utilization and placements.
c. Make information regarding all training providers available online.
d. Undertake an annual survey skill training providers to ensure adherence to quality norms.

12.9.2 Industry

Participation in skill development

To ensure relevance of training imparted to the industry, greater involvement and interaction with skill training providers is essential.

Action Plan:

a. Play a proactive role in skill development through participation in skill development schemes initiated by the government such as the PPP scheme.
b. Create captive training institutes that serve as model institutes for other training providers in the district.
c. Provide inputs to training providers on curriculum, pedagogy and equipment.
d. Regularly engage with the trainers to acquaint them of new developments and apprise them of suitable training methods.

Institutionalized wage escalation for lower skill levels

People with low skills often have stagnant careers, working at the same level throughout the period of their employment with no provision for promotions or career growth. In order to make blue collar jobs desirable, it is essential to introduce vertical mobility by institutionalizing wage escalation to reflect skill acquisition and experience, particularly for growing labor-intensive sectors such as textiles and construction.

Action Plan:

a. Industry associations can facilitate the adoption of skill levels defined by the relevant SSCs and benchmark wages through industry consensus
b. The industry must create competency standards and performance evaluation parameters, on the basis of which employees at different skill levels will be regularly apprised
c. Employees at different skill levels should be aware of the career trajectory they are likely to follow
d. The acquisition of skill or experience linked with a demonstrable improvement in performance must be rewarded with higher compensation

12.9.3 Training Providers

Community engagement for student mobilization

Student mobilization may be strengthened through greater community engagement, particularly in rural areas for sectors such as food processing and textiles.

Action Plan:

a. Provide incentives such as flexible course timings to encourage students to enroll in vocational training.
b. Collaborate with local NGOs to mobilize students for training programs.
c. Establish strong industry linkages to create a link between employment and training to raise interest in vocational training.

Aptitude tests

Better job matching and rationalization of aspirations and job expectations may be achieved through aptitude tests for the students.

Action Plan:

a. Conduct standardized aptitude tests for all students interested in vocational training to facilitate better course matching.
b. Provide the results along with access to other online resources to help the students make informed choices with regard to course selection.
c. Provide a faculty point of contact for students for all career related queries.
d. Create an industry orientation through events, competitions, guest lectures and industry visits.

12.9.4 NSDC

Entrepreneurship workshops

Workshops may be conducted in the district to provide basic training and information for aspiring entrepreneurs.

Action Plan:

a. Collaborate with local NGOs and industry to mobilize students.
b. Impart basic training for entrepreneurship.
c. Provide guidance on sources of finance, government assistance and other resources that entrepreneurs may access.
d. Provide access to online resources for entrepreneurship information.

Standardization of quality

The qualitative gap is a cause for concern in the district. There is a need for quality control for sectors such as IT, auto and hospitality.

Action Plan:

a. Facilitate standardization of quality through the SSCs. SSCs should be responsible for the development of guidelines on content and pedagogy for courses in the sector.
b. Develop standard frameworks for competency based testing through the SSCs.
c. Allow formal certification of informally acquired skills through NSDC partner institutes.
d. Register and certify private training providers.

13 Nagapattinam

13.1 Overview

The district of Nagapattinam came into existence in 1991 with the bifurcation of the composite Thanjavur district. It is the only district in Tamil Nadu to have two disjointed parts, with the headquarters located in the southern part. Nagapattinam is situated on the Eastern coast of Tamil Nadu and is bordered by the Bay of Bengal in the east and south, Thiruvarur and Thanjavur districts in the West and Ariyalur and Cuddalore districts in the North. Administratively, the district is divided into two revenue divisions, comprising of eight taluks, 11 blocks and 519 revenue villages. These sub units are further administered by four municipalities, eight town panchayats and 434 *panchayat* villages.

Table 13-1: Basic Information (2010-11)

District Information	Nagapattinam	Tamil Nadu
Number of inhabited villages	487	15,400
Area (Sq Km)	2,228	127,905
% of state area	1.74	100
Area rank	29	-
Revenue divisions	2	-
Taluks	8	-
Blocks	11	-
Corporation & municipalities	4	-
Town panchayats	8	-
Revenue villages	519	-
Panchayat villages	434	-

Source: District Statistical Handbook (2010-11)

13.2 Demographic Profile

At a population figure of over 16 lakhss, Nagapattinam contributes two percent to the total population of Tamil Nadu. The population density of the district is on the higher side, at 724 persons per square km. The annual population growth rate is negative, unlike the other districts of the state. The negative growth rate implies that the future population statistics in the district will significantly lower than the average state figures. It could also lead to a significantly lower demographic dividend for Nagapattinam. The district is relatively rural, with only 22.4% of the population residing in urban areas. At 66.7%, working age population for the district is high, however only one thirds of the working age population are currently employed.

Table 13-2: Demographic Indicators (2011)

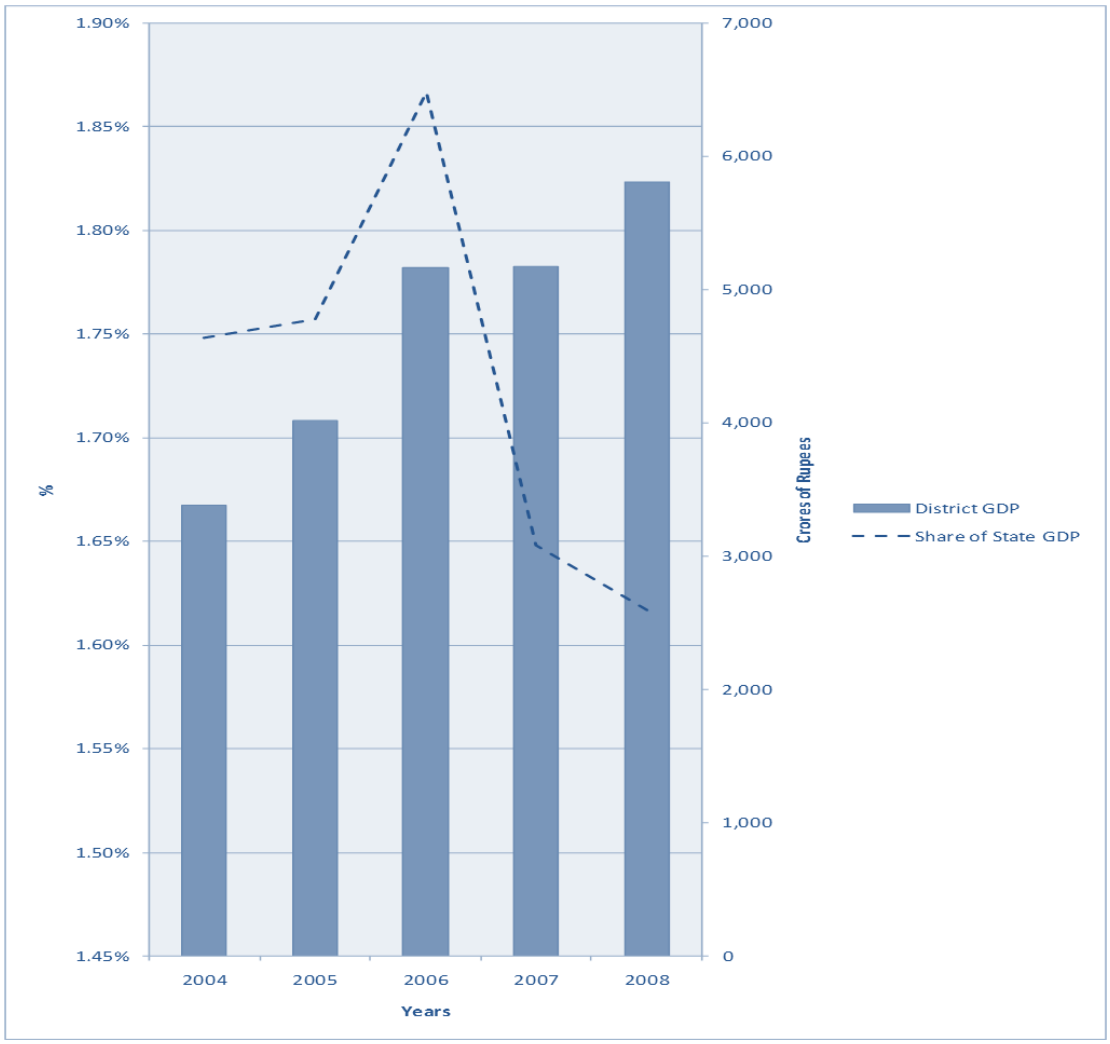
Population	Nagapattinam	Tamil Nadu
Population	1,614,069	72,138,958
Share of state population (in %)	2	100
Population density (per sq. km.)	724.32	564
Urban population percentage	22.54	48.45
Total population annual growth rate (in %)	-0.36	2
Urban population	363,778	34,949,729
Sex ratio (number of females per 1000 males)	1025	995

Source: Census 2011 (Provisional)

13.3 Economic Profile

The contribution of the district to state GDP has varied between a high of 1.85% and a low of 1.60%. The contribution has been falling in recent years and is at about 1.60% in 2008-09. Per capita Rural Incomes are significantly higher than the state average, the urban rural disparity is wide. The district fares well with respect to development though – its HDI and GDI indicators are slightly lower than the state average, at 0.654 and 0.652 respectively.

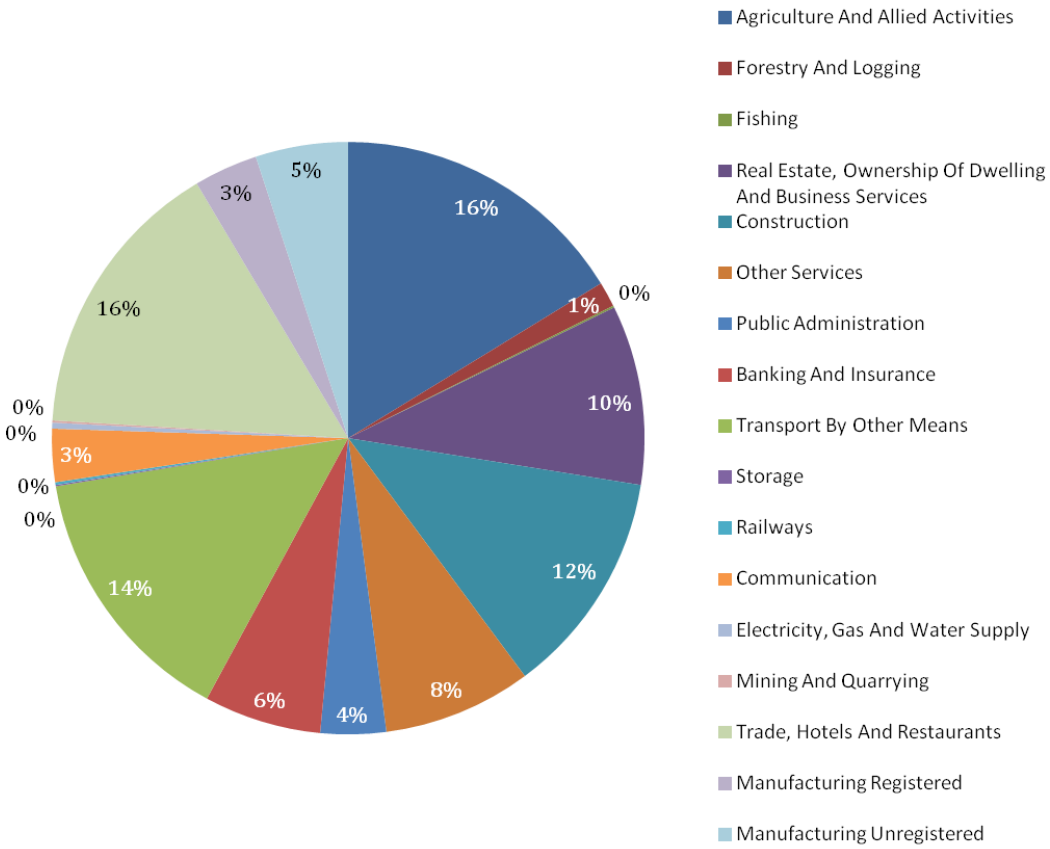
Figure 13.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Agriculture and Allied activities contribute about 16% of the district GDP, with Forestry adding another one percent. Trade, hotel and restaurants & Transport are major contributors at 16% and 14% respectively. Railways, Storage and communication are other significant contributors.

Figure 13.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 13-3: Per Capita Income (2011-12)

Human Development Indicators	Nagapattinam	Tamil Nadu
Per capita urban income	68,700	100,600
Per capita rural income	45,500	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

13.3.1 Agriculture

Non workers significantly outnumber the workers in the district, suggesting an added burden for the working population of the district. Approximately 65% of the workers in the district are engaged in agricultural activities. Of these, 52.63% work as wage laborers, indicating a relatively lower number of agricultural land holdings. Only 1.95% are engaged in household industries, while 33.15% are employed in the services and industrial sectors.

Around 94% of the total sown area is under food crops. About 62% of this sown area is under cereals, 33% under pulses. Non food crops include sugarcane, cotton, oil seeds and tobacco. Only 5% of the total sown area is under non-food crops. Almost 33% of this area goes to sugarcane while oil seeds have a share of 29% of the sown area. Yield is significantly lower than the state averages for all crops except tobacco and Oil seeds.

Table 13-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	161,326	62.95%
Pulses	84,392	32.93%
Condiments	451	0.18%
Fruits and vegetables	4,377	1.71%
Other	5,746	2.24%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	5,192	32.61%
Cotton	902	5.67%
Oil Seeds	4,706	29.56%
Tobacco	370	2.32%
Other	4,751	29.84%
Total Area under Food Crops	**256,292**	**94.15%**
Total Area under Non Food- Crops	**15,921**	**5.85%**

Source: Tamil Nadu Crop Report (2011-12)

Table 13-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield for Nagapattinam	Yield for Tamil Nadu
Cereals	9,070	12,136
Pulses	633	2,763
Sugarcane	73	101
Condiments	2,809	32,440
Vegetables	66,487	164,422
Mango	4,795	4,795
Cotton	352	368
Tobacco	1,839	1,524
Oil seeds	26,293	16,484

Source: Tamil Nadu Crop Report (2011-12)

13.3.2 Industry

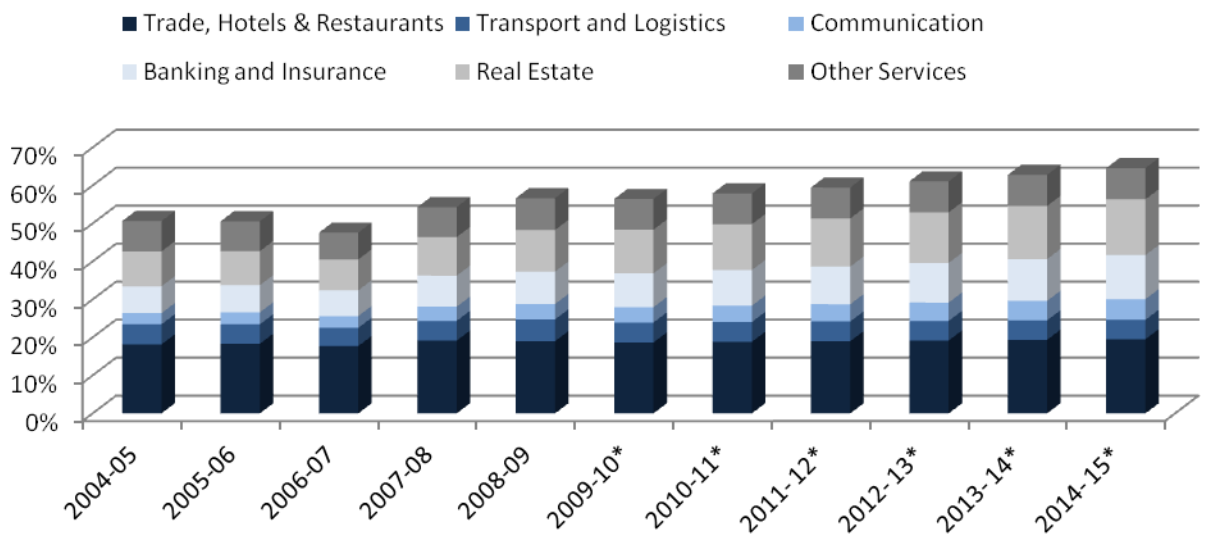
Over 8 lakh people are employed in the industry sector. As a primarily agrarian district, most of the industries in Nagapattinam are involved in processing activities. There are ten such large scale industries in the district, engaged in the processing and production of sugar, salt and rice. The availability of significant oil and natural gas resources has also led to the development of large scale energy and electricity generation units. A few mineral resource deposits can also be found along the coastline of the district, which has recently led to the establishment of various mineral and chemical products manufacturing industries. There are also a number of small and medium scale industries in the district, involved in a variety of production activities. In particular, textile apparels and food processing units are significant in number. Interaction with local district officials

indicates that most of these units are highly automated in nature, thereby generating low numbers of jobs. Policies are being proposed to encourage investment in more labor intensive industrial units. In order to do so, a number of ancillary units are being set up in an organized manner.

The rising number of industries has created a need for some form of organization in order to increase efficiency and establish forward and backward linkages. This has led to the establishment of SIDCO industrial estate in the headquarters of the district. Various mineral, metal and plastic product manufacturing units have been set up within this industrial estate. Additionally, another industrial estate has recently been developed in Mayiladhuthurai for small and micro industrial units. Additional industrial clusters have been proposed for engineering and automobile component manufacturing units and other agro processing units.

13.3.3 Services

Figure 13.3: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The contribution of the service sector to GDP in Nagapattinam is expected to grow from 57% in 2008-09 to 61% in 2012-13, with trade, hotels and restaurants contributing to almost one-fifth of the districts GDP in 2012-13.

Employment in the service sector is estimated to be 1.89 lakh. Apart from agriculture and the rising industrial activity, tourism plays an important role in the district's economy. Nagapattinam houses a number of famous religious temples and places of worship. Eco tourism too has been developed recently, in certain spots along the coastline of the district. The district has witnessed a rather volatile tourism trend in the past decade. In particular, tourist activity saw a sharp fall post the Southeast Asian tsunami in 2004. However, tourist activity seems to have picked up after 2005, especially with respect to domestic tourism.

The significant presence of tourist activity and the rising industrial development has led to better intra district connectivity. There are 1904 kilometres of municipal and panchayat roads connecting various parts of the district. Transport infrastructure facilities are further strengthened by the availability of railway services: railway tracks cover a route length of 109 kilometres over 16 railway stations. However, the division of district into two parts presents significant connectivity problems, especially for the residents in the Northern part of the district.

These connectivity problems might also not be conducive for even economic development and growth across the district.

In terms of healthcare services, hospitals are fewer in number as compared to the primary and health sub centres, suggesting the concentration of hospitals around urban areas, with the health sub centres largely scattered around rural areas of the district. The population to doctor ratio is also lower than other comparable districts, with one doctor available for every 16,813 persons. These relatively lower figures provide ample scope for development within the healthcare sector in the district.

13.4 State of Education

In spite of the relatively rural nature of the district, the overall literacy figure is high, at 84%. There has been considerable progress on the literacy front over the past decade, with female literacy rising from 67.96% in 2001 to 78% in 2011. Male literacy figures are one of the highest in the state, at 90.38%. Like Erode and Dindigul, Nagapattinam is characterized by a significant gender literacy gap; although, this gap has decreased by five percent over the last decade.

Table 13-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	67.96	78.00	0.15
Male	84.90	90.38	0.06

Source: Census 2001, Census 2011(Provisional)

There are 891primary schools, 290 upper primary schools, 111 secondary and 94 higher secondary schools in the district. Net enrollment ratios are over 98% at the primary and upper primary level. Drop out rates are low at the primary level at 2.6% but high at the upper primary level at 6.5%, still remaining below the state averages.

Table 13-7: Education Profile (2010-11)

Educational Statistics	Units in Nagapattinam	Units in Tamil Nadu
Primary	891	33,909
Upper primary	290	8,552
Secondary	111	4,436
Higher secondary	94	4,632
NER – Primary (%)	98.23	98
NER - Upper primary (%)	98.14	98
Dropout rate- Primary (%)	2.62	3.81
Dropout rate - Upper primary (%)	6.51	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 88,358, while enrolment in schools that had primary and upper primary classes was 71,748. Enrolment in upper primary schools was 730 in the same period. For schools with

primary, upper primary and secondary/ higher secondary classes, total enrolment was 36,577, while enrolment in schools with upper primary and secondary/ higher secondary classes was 47,111.

There are three engineering colleges and four arts and sciences colleges in the district. There are two pharmacy, three hospitality and a single management college in the district. There are also five polytechnics. The combined capacity of all the ITIs and ITCs in the district is 2,961. Details of major ITIs in the district are given in the appendix.

Table 13-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	3
Arts and sciences	4
Management	1
Medical	0
Dental	0
Nursing	0
Pharmacy	2
Other medical	0
Teacher training and education	0
Hospitality	3
Fashion technology	0
Polytechnics	5
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

13.5 Incremental Human Resource Availability

The current work force is estimated to be 6.69 lakh, which is estimated to grow to 7.56 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 42,000 and in 2017-22, the incremental availability is estimated to be 45,000.

Table 13-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	1,625	1,074	685	669		
2017	1,712	1,126	727	711	42	
2022	1,809	1,181	773	756		45

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level.

Table 13-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	26	5	10	42
2017-22	29	5	10	45

Source: Athena Research

13.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the unorganized sector, construction, tourism and travel and chemicals. Organized retail and BFSI are expected to see a moderate increase in human resource requirements. The human resource requirement in the agriculture sector is expected to decline by 76,000 in 2012-17 and 67,000 in 2017-22.

The long term growth sectors for Nagapattinam appear to be construction and chemicals. The setting up of PCPIR along the Cuddalore - Nagapattinam coast is expected to create some human resource requirement for the chemical industry. While there is food processing activity in the district, much of it is unorganized. A large part of the population is engaged in primary activities.

Table 13-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-63	-2	-11	**-76**	-55	-1	-10	**-67**
Automobile	0	0	0	**0**	0	0	0	**0**
Chemicals and Pharmaceuticals	0	0	0	**17**	0	0	0	**17**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	0	0	0	**0**	0	0	0	**0**
Furniture	0	0	0	**0**	1	0	0	**1**
Gems & Jewellery	0	0	0	**0**	0	0	0	**0**
Handlooms & Handicrafts	0	0	0	**0**	0	0	0	**0**
Leather	0	0	0	**0**	0	0	0	**0**
Textiles	0	0	0	**0**	0	0	0	**0**
BFSI	0	1	2	**3**	0	1	3	**4**
Construction	15	3	1	**19**	33	6	3	**42**
Education	0	0	1	**1**	0	0	1	**1**
Healthcare	0	0	1	**1**	0	0	1	**1**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	0	0	1	**1**	0	1	1	**2**
Organized Retail	2	0	1	**3**	3	1	2	**5**
Real Estate	0	0	1	**1**	0	0	1	**1**
Tourism & Travel	4	14	13	**30**	6	24	22	**52**
Transportation & Logistics	1	0	0	**1**	1	0	0	**1**
Unorganized (excluding Agriculture and Construction)	29	15	21	**65**	35	22	27	**84**
TOTAL	**-11**	**32**	**29**	**67**	**24**	**55**	**50**	**144**

Source: Athena Research

13.7 Skill Gap

The largest skill gap is at the semi skilled level at 28,000 in 2012-17 and 49,000 in 2017-22. There is estimated to be an excess availability of human resources at the unskilled level. At the skilled level, the gap is estimated to be 19,000 in 2012-17 and 39,000 in 2017-22.

Table 13-12: Skill Gap in 000s

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	-11	32	29	**67**	24	55	50	**144**
Incremental Human Resource Availability	26	5	10	**42**	29	5	10	**45**
Skill Gap	**-38**	**28**	**19**	**26**	**-6**	**49**	**39**	**99**

Note: Figures in parenthesis indicate excess supply

Source: Athena Research

Qualitative skill gap

Lack of employment opportunities in the district

Nagapattinam is an average district in terms of development. There has not been much economic growth over the past decade. There has been little to no development in the industrial sector, and agriculture continues to remain woefully underdeveloped. Most of the people are employed in agriculture and fishing activities. There are not many other employment opportunities in the district, and so the people have no choice but to engage in agricultural activities. The lack of employment opportunities within the district has been a key disincentive to acquire skills

High levels of disguised unemployment

Labour mobility is low in Nagapattinam. There is some level of outward migration, but it is much lower than the rate of migration in other districts. The unemployment statistics for the district are quite high, especially amongst the vocationally and formally educated youth. Furthermore, there is excess labour supply for agrarian activities – which essentially means that the actual unemployment figures are much higher than the officially, registered unemployed figures for the district population.

Low labour productivity

Agricultural productivity is average, lower than that of comparable districts. The district faces severe water shortages every year. Irrigation facilities have not been adequately developed. Furthermore, owing to a large proportion of the population being engaged in agriculture, land holdings are quite small. This prevents the implementation of advanced agricultural methods. Skills for performing agricultural jobs are acquired traditionally in families, which restricts the mobility of labour and does not allow for vertical mobility or significant wage increases

Overdependence on informal skilling

Due to the low industrial development and high reliance on the primary sector for employment, most of the skill acquisition is informal, through traditional methods. Formal vocational training could help modernize the processes adopted in different industries and spur economic growth

13.8 Youth Aspirations

Table 13-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	BFSI, Hospitality	Construction, Chemicals
	Low	IT, Education	Agriculture, Handloom

Source: Athena Research

Low aspiration levels

While the youth are relatively well-educated, they do not necessarily enter careers that make use of their education and skills. There is a lack of enterprise and initiative; this compounds the existing problems of low growth. There is a need to create greater aspiration among the youth and motivate them to apply themselves productively in their work.

Lack of guidance and motivation

The lack of industrial development reduces the motivation to acquire specialized skills or become multi-skilled. If educational opportunities match industry requirements and employment availability, the skills acquired through education are more likely to be applied to productive activities. Skill training institutes should provide basic skilling and focus on counselling students. The students require proper guidance and motivation in order to align their educational choices with their career goals.

Opportunity cost of training in vocational trades deemed high

Unskilled youth cite the significant opportunity costs of training that is associated with loss of employment and wages as a key inhibiter. Low compensation for skills and lack of employability post graduation remain key concerns that discourage students from taking up vocational programs.

13.9 Recommendations

13.9.1 State Government

Improve quality and access to basic education

The development of educational facilities is low in the district and is severely constrained by the low availability of infrastructure. The lack of access to good basic education makes skill training very challenging since the students are not familiar with basic concepts and are often unable to absorb the skill training imparted to them. Most of the students choose to drop out of school by the sixth or eighth grade, which further acts a restraint on any developmental activities proposed. This calls for increased emphasis on improving the quality of basic education and to improve retention of students in school at least till the 10th grade and to ensure strong fundamentals, particularly in backward blocks.

Action Plan

a. Expand and rehabilitate basic educational infrastructure in backward regions to improve access
b. Build strong teacher training institutions, with a greater focus on the improvement of pedagogical methods and provide continuous training for contractual teachers
c. Use campaigns to improve community awareness and involvement to ensure the sustainability, maintenance and good management of the school and ensure that children stay in school at least till the 10^{th} grade

Increase the efficiency of employment exchanges

Employment exchanges continue to remain an important and necessary labour market institution. Despite the rising concerns of inefficiency across employment exchanges in the state, it is the main source of providing government jobs in most districts. Technology deficit, poor management coupled with the diminishing role of government in recruitment has led to the failure of employment exchanges in India. Nevertheless, there are a number of employment exchanges situated in easily accessible locations and awareness of the exchange among the youth is high. With a few interventions, these institutions can be empowered to significantly offset the problem of unemployment.

Action Plan:

a. Expand the functions performed by employment exchanges to include counselling, assessments, training and apprenticeships
b. Reform the governance and management structures of employment exchanges in the district through greater involvement of the private sector through the PPP mode
c. Identify performance targets and rank the performance of employment exchanges

13.9.2 Industry

Providing options for learning or pursuing skill development programs on the job

Graduates who pass out of skill institutes perceive employment in industry as being a static option, with little or no upward mobility. As a consequence graduates passing out of vocational institutes remain at lower wage levels all throughout their career. Further, given that the poorest sections are the ones that often opt to enrol in Industrial Training Institutes, they are compelled to begin work early on and do not have the monetary

bandwidth to acquire additional skills. Creating opportunities for learning on the job will help industries improve employee morale and the productivity of labour employed.

Action Plan:

a. Encourage employees to attend external seminars, training session, or conferences and establish a company norm that the employee is expected to magnify the experience for the company by training other employees
b. Incentivize employees to acquire additional skills on the job by enrolling in part time courses and link promotions and wage increases to additional skills acquired
c. Hold orientation programs to acclimatise workers to formal work environments
d. Broaden an employee's knowledge of other functions and departments in the organization to improve portability of skills
e. Arrange for periodic in-house training with a training consultant/ tie-up with training institutions to up-skill the employees through on the job-training programmes
f. Establish a sponsorship program for high performing employees and sponsor the acquisition of certain specialized skills of relevance to the firm

Gender sensitization at the work place

The employer is liable for acts of discrimination committed by its employees if the employer fails to take all reasonable steps to eliminate discrimination. In the context of gender sensitization, an employer owes a duty of care to its employees which extends beyond providing a safe working environment. This includes the duty to take reasonable steps to ensure the working environment is equitable and free of all forms of discrimination.

Action Plan:

a. Create strong gender policies, emphasizing the need for parity in terms of access to promotions, wage rates and devote resources to put the policy into practice
b. Offer non-gender stereotyped roles and choices for both men and women
c. Institutionalize women's access to decision making roles
d. Create a strong redressal mechanism to resolve concerns in a time bound manner

13.9.3 Training Providers

Encourage earn while you learn programmes

Given the high levels of disguised unemployment in the district, there is a clear case for up skilling. However most people in the district are observed to be economically backward and often tend to drop out of the formal educational system owing to economic compulsions. Thus there is a need in the district to up-skill its workforce through earn while you learn programs.

a. Group the people engaged as labour into groups based on location and provide select skill trainers in the district with the required inventory to implement the 'mobile-classroom' concept to reach the workers
b. Provide stipends to those interested in acquiring certifications in skill on a part time basis by using the existing vocational infrastructure
c. Encourage skill trainers to introduce modular employability trades of relevance to local demand with flexible timings

13.9.4 NSDC

Community learning initiatives for women in backward areas

The need for skill development is felt most among the women in the district, who are often unable to enter the formal education and training system due to financial and social constraints. Skilling women workers engaged in informally in sectors such as food processing and construction is critical to their empowerment and transition into a formal system with better benefits. However, since most women are constrained by social factors from entering the formal training system, a set of community led initiatives must be designed to help skill women in the backward areas in the district.

Action Plan:

a. Encourage short training modules customized to suit the employment opportunities available for women in the district in the unorganized and small scale industries
b. Collaborate with local Self Help Groups or Community based organizations to deliver the training modules
c. Facilitate the creation of Community Learning Centres in every district, to co-ordinate the activities of the Self Help Groups and provide the required support in terms access to funding and placement for the trained women

Encourage multi-skilling courses to provide fungible skills

Two interesting trends have been observed in the district. Firstly, the people in the district are observed to have a high propensity to start their own business, but often lack the access to resources in terms of money and skills to do so. Secondly, with the large unorganized sector, the requirement for multiple skills is high. The youth prefer to acquire well rounded skill sets since they are often required to work across different roles and sectors.

Action Plan:

a. Encourage multi-skilling modules and make them available for training centres who fulfil a set of pre-determined infrastructure criteria
b. Undertake campaigns among students to make them aware about the benefits of acquiring multi-skills
c. Provide financial support either in the form of voucher to those who are already employed, but inclined on acquiring multiple skills
d. Provide opportunity for formal certification of informally acquired skills

14 Namakkal

14.1 Overview

The district of Namakkal came into existence in 1997 with the bifurcation of Salem district. Namakkal is situated in the Central part of Tamil Nadu and is bordered by Perambalur and Tiruchirappalli districts in the east, Karur district in the South, Erode district in the West and the district of Salem in the North. Administratively, the district is divided into two revenue divisions, comprising of 5 taluks, 8 blocks and 203 revenue villages. These sub units are further administered by 4 municipalities, 11 town panchayats and 158 panchayat villages.

Table 14-1: Basic Information (2010-11)

District Information	Namakkal	Tamil Nadu
Number of inhabited villages	371	15,400
Area (Sq Km)	3,401	127,905
% of state area	2.66	100
Area rank	21	-
Revenue divisions	2	-
Taluks	5	-
Blocks	8	-
Corporation & municipalities	4	-
Town panchayats	11	-
Revenue villages	203	-
Panchayat villages	158	-

Source: District Statistical Handbook (2010-11)

14.2 Demographic Profile

At a population figure of over 17 lakhs, Namakkal contributes 2.39% to the total population of Tamil Nadu. The population density of the district is slightly on the higher side, at 506 persons per square km. The annual population growth rate is 1.41%, lower than the state average, suggesting a stable demographic scenario. Less than half of the district is urbanized, with 40% of the population residing in urban areas. The district has a high working age population and a moderate WPR at 48.96%.

Table 14-2: Demographic Indicators (2011)

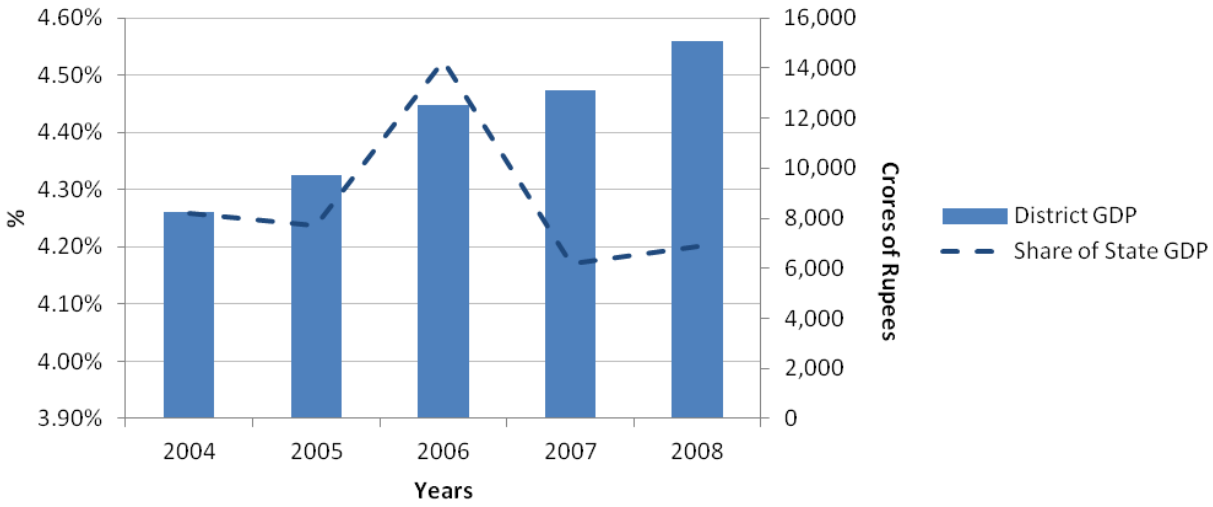
Population	Namakkal	Tamil Nadu
Population	1,721,179	72,138,958
Share of state population (in %)	2	100
Population density (per sq. km.)	506.05	564
Urban population percentage	40.27	48.45
Total population annual growth rate (in %)	1.41	2
Urban population	693,160	34,949,729
Sex ratio (number of females per 1000 males)	986	995

Source: Census 2011 (Provisional)

14.3 Economic Profile

The contribution of the district to state GDP has varied between a high of 4.5% and a low of 4.2%. The contribution has declined in recent years and is steady at about 4.2% in 2008-09. Per capita incomes are low relative to the state, and urban rural disparity is wide. The district fares moderately with respect to development too – its HDI and GDI indicators are lower than the state average, at 0.636 and 0.631 respectively

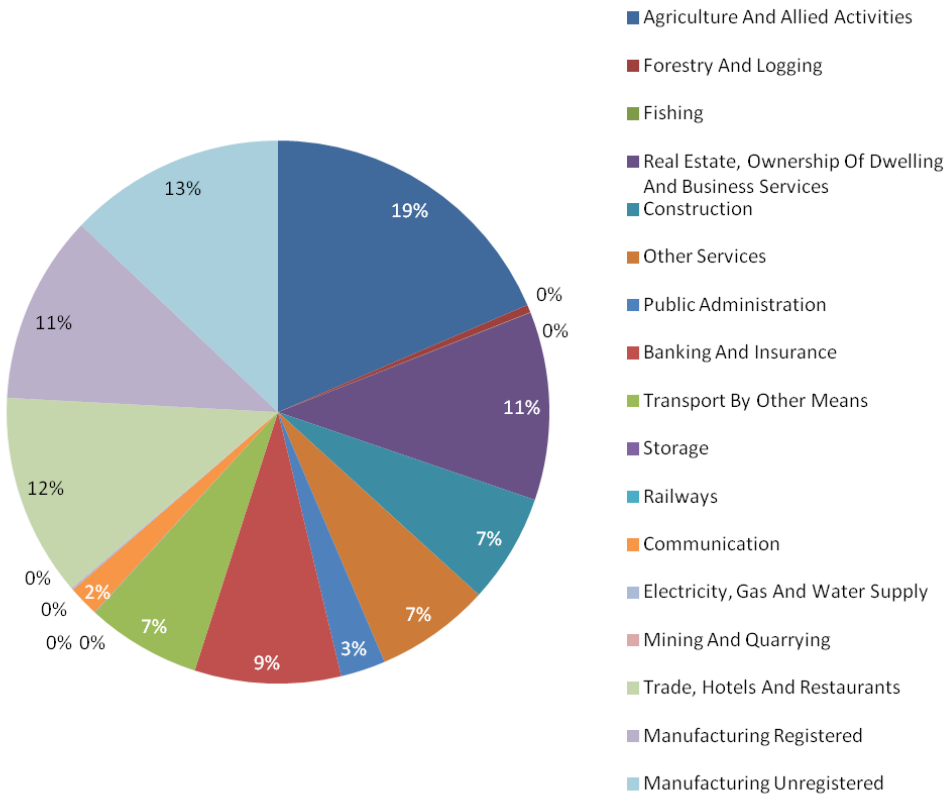
Figure 14.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Manufacturing forms a major part of the district GDP with about 24%, of which 11% is Unregistered. Agriculture accounts for 19%. Trade, hotels and restaurants and storage account for 12% and 11% respectively. Other dominant sectors include banking and financial services, transport and railways.

Figure 14.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 14-3: Per Capita Income (2011-12)

Human Development Indicators	Namakkal	Tamil Nadu
Per capita urban income	83,000	100,600
Per capita rural income	44,600	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

14.3.1 Agriculture

Total workers outnumber the non workers in the district, with a significant portion of the work force engaged in agricultural activity. Most of the district's workers are employed of the major part of the year, thereby reflecting low levels of seasonal unemployment in the district. Although, the proportion of work force engaged in agricultural activity is the highest, the number of workers engaged in other industrial and service sectors is significant too, reflecting the sectoral changes taking place within the economy of the district.

About 78% of the total sown area is under food crops. Nearly 74% of this sown area is under cereals, and 11% under fruits and vegetables. Non food crops include sugarcane, cotton, oil seeds. Almost 21% of the total sown area is under non-food crops. Cotton and Oil seeds have a major share of 25% and 18% respectively. Yield is higher than the state for almost all crops with the exception of Condiments, vegetables and tobacco, which have an average yield lower than the state.

Table 14-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	37,527	74.15%
Pulses	4,504	7.68%
Condiments	2,673	2.28%
Fruits and vegetables	34,896	11.37%
Other	18,808	4.52%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	18,359	15.79%
Cotton	3,053	25.29%
Oil Seeds	37,404	18.37%
Tobacco	2	0.00%
Other	31,904	40.56%
Total Area under Food Crops	**98,408**	**78.55%**
Total Area under Non Food- Crops	**90,722**	**21.45%**

Source: Tamil Nadu Crop Report (2011-12)

Table 14-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield for Namakkal	Yield for Tamil Nadu
Cereals	13,773	12,136
Pulses	2,998	2,763
Sugarcane	135	101
Condiments	13,799	32,440
Vegetables	137,510	164,422
Mango	4,795	4,795
Cotton	505	368
Tobacco	1,000	1,524
Oil seeds	18,673	16,484

Source: Tamil Nadu Crop Report (2011-12)

14.3.2 Industry

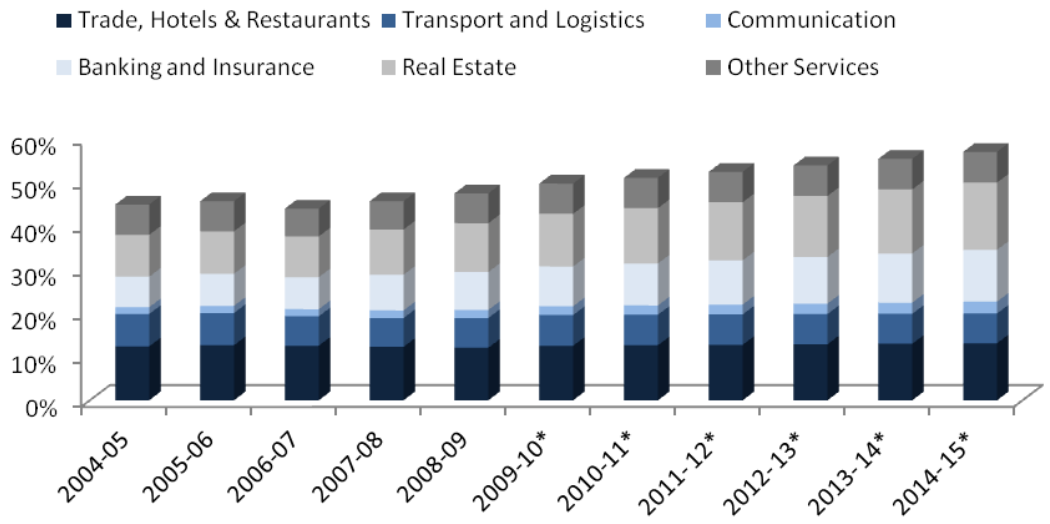
Over 1.38 lakh people are employed in the industry sector. The relatively high yielding cotton crop has led to a textile boom in the district. Currently, there are 40 large scale textile units operational, providing employment to over 5800 people across the district. There are also a few large scale sugar and metal products manufacturing units operating in some of the blocks of the district. Namakkal also has a large, thriving industry manufacturing automobile components. The blocks of Tiruchengode and Namakkal in particular, have large industrial clusters that organize and facilitate the manufacturing and assembling activities. These industrial estates employ more than 25,000 people directly and indirectly, thereby constituting an important means of livelihood for the district's inhabitants.

Apart from these large scale units, there are also a number of small and micro units operating in the district. These units are engaged in various activities; there are a total of 10,071 small scale units, providing employment

to 40,655 people. In an effort to create robust vertical linkages and ensure stable incomes for the farmers in the district, food and agro based industries, have received substantial funds from the local and state governments over the recent years.

14.3.3 Services

Figure 14.3: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The service sector contributes to 47% of the district GDP, which is expected to grow to 54% in 2012-13. Banking and insurance followed by real estate and communication are the key drivers of growth and are seen to register CAGRs of 18%, 16% and 16% respectively between 2004-05 and 2008-09.

Nearly 1.76 lakh people are employed in the services sector. The increasing presence of industrial activity in the district has led to the development of financial and transport infrastructure. There are 85 government banks, 47 private banks and 31 cooperative banking institutions to increase the availability of credit for industrial units and farmers looking to develop their agricultural production techniques. The district is also reasonably well connected, with a road network comprising of 416 kilometres of highways and 1,359 kilometres of other panchayat roads. In addition, the railway tracks cover a route length of 71 kilometres between 7 railway stations located across all the blocks of the district. Healthcare services however, are not as well developed or spread out. There are only a total of 8 hospitals and 292 health centres, reflecting the concentration of hospitals around primarily urban areas. With more than half of the district's population residing in rural areas, there is ample scope for the development of healthcare infrastructure.

14.4 State of Education

In spite of the reasonably moderate development observed in the district, the overall literacy figure remains low, at 75%. There has been some progress on the literacy front over the past decade though, with female literacy rising from 57% in 2001 to 66.68% in 2011. Male literacy too, increased by about 6 %, from 77.6% in 2001 to 83.09% in 2011. Like its neighboring districts, Namakkal is characterized by a significant gender literacy gap; although, this gap has decreased by 3 % over the last decade.

Table 14-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	57.00	66.68	0.17
Male	77.60	83.09	0.07

Source: Census 2001, Census 2011(Provisional)

There are 761 primary schools, 191 upper primary schools, 110 secondary and 207 higher secondary schools in the district. Net enrollment ratios are high for the primary level, at 97%, but drop off to 95% for the upper primary level. Dropout rates are high at the primary level at 7.25% and 10.8% at the upper primary level.

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 65,701, while enrolment in schools that had primary and upper primary classes was 44,185. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 62,821, while enrolment in schools with upper primary and secondary/ higher secondary classes was 45,609.

Table 14-7: Education Profile (2010-11)

Educational Statistics	Units in Namakkal	Units in Tamil Nadu
Primary	761	33,909
Upper primary	191	8,552
Secondary	110	4,436
Higher secondary	207	4,632
NER – Primary (%)	97.58	98
NER - Upper primary (%)	95.5	98
Dropout rate- Primary (%)	7.25	3.81
Dropout rate - Upper primary (%)	10.87	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12

There are 24 engineering colleges and 163 arts and sciences colleges in the district. There are 17 polytechnics. The combined capacity of all the ITIs and ITCs in the district is 2,331. Details of major ITIs in the district are given in the appendix.

Table 14-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	24
Arts and sciences	16
Management	2
Medical	0
Dental	3
Nursing	2
Pharmacy	2
Other medical	3
Teacher training and education	0
Hospitality	0
Fashion technology	0
Polytechnics	17
Agriculture	1

Source: UGC, AICTE, MHRD Database (2010-11)

14.5 Incremental Human Resource Availability

The current work force is estimated to be 7.17 lakh, which is estimated to grow to 8.88 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 81,000 and in 2017-22, the incremental availability is estimated to be 90,000.

Table 14-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	1,741	1,151	734	717		
2017	1,905	1,254	816	798	81	
2022	2,090	1,367	907	888		90

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level.

Table 14-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	44	10	26	81
2017-22	52	12	26	90

14.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the unorganized sector, construction and textiles. Automobile, BFSI and organized retail are expected to register moderate growth. The human resource requirement in the agriculture and handlooms sector is expected to decline over time.

Table 14-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-29	-1	-5	**-35**	-25	-1	-5	**-31**
Automobile	1	2	1	**4**	2	3	1	**6**
Chemicals and Pharmaceuticals	0	0	0	**0**	0	0	0	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	1	0	0	**2**	2	0	0	**3**
Furniture	1	0	0	**1**	1	0	0	**1**
Gems & Jewellery	0	0	0	**0**	0	0	0	**0**
Handlooms & Handicrafts	-2	0	0	**-2**	-2	0	0	**-2**
Leather	1	0	0	**1**	1	0	0	**2**
Textiles	9	2	2	**13**	13	3	3	**19**
BFSI	0	1	4	**5**	0	2	5	**7**
Construction	16	3	1	**20**	35	7	3	**45**
Education	0	0	2	**2**	0	0	2	**2**
Healthcare	0	1	1	**2**	0	1	1	**2**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	0	1	1	**2**	0	1	2	**3**
Organized Retail	2	0	1	**4**	3	1	2	**6**
Real Estate	0	0	1	**1**	0	0	2	**2**
Tourism & Travel	0	0	0	**0**	0	0	0	**0**
Transportation & Logistics	2	0	0	**3**	2	1	0	**3**
Unorganized (excluding Agriculture and Construction)	31	16	22	**69**	37	24	28	**89**
TOTAL	**34**	**26**	**32**	**91**	**70**	**42**	**46**	**158**

Source: Athena Research

The long term growth sectors for Namakkal appear to be automobile and transportation. Traditional industries like textiles and food processing have established a strong presence in the district through small scale industries, and are expected to continue to grow.

14.7 Skill Gap

The largest skill gap is at the semi skilled level at 16,000 in 2012-17 and 29,000 in 2017-22. There is estimated to be an excess availability of human resources at the unskilled level. However, with an increasing number of youth opting for skilling and the growing need for lower level skills that can be acquired through short-term courses, this gap is expected to be reversed by 2022. At the skilled level, the gap is estimated to be 5,000 in 2012-17 and 20,000 in 2017-22.

Table 14-12: Skill Gap in 000's

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	34	26	32	**91**	70	42	46	**158**
Incremental Human Resource Availability	44	10	26	**81**	52	12	26	**90**
Skill Gap	**-10**	**16**	**5**	**11**	**18**	**29**	**20**	**68**

Note: Figures in negative indicate excess supply
Source: Athena Research

Qualitative Skill Gap

Rising shortage of labour in agriculture

Agriculture is moderately productive. However, with the rapid development of allied activities and the increasing number of small scale agro processing units, the number of people employed in agriculture has decreased substantially. This shortage of manpower has affected the volumes of agricultural produce; produce quantities have decreased considerably over the past few years.

Low compensation for skills

The wages - differences for those who have completed school and ITI graduates are not significant, which prevents people from enrolling in such courses. This situation needs to be remedied too, with perhaps an extra focus on providing those enrolling in ITIs with tangible skills, which would enable them to capitalize on wage differential.

14.8 Youth Aspirations

Table 14-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	Automobile, Transport	Textile
	Low	Education	Agriculture, Chemicals

Source: Athena Research

Low dignity associated with blue collar jobs

Education levels in the district are very high. Even people belonging to lower middle class families opt to educate their children at least until they obtain a bachelor's or an engineering degree. There are very few children who drop out in the eighth or tenth grade on account of income pressure.

The educated youth prefer white collar jobs due to the prestige, working conditions and compensation associated with such jobs. The education levels have also increased, and so the low skill level jobs do not find many takers amongst the district's residents. The transport industry in particular, is facing a severe shortage of truck drivers to transport goods across the country. There is a need to improve the perception of blue collar workers – a problem that prevents people from accepting such jobs across the state. The industry cannot provide adequate white collar employment to match the labour supply at higher skill levels.

Recently, there have been labour shortages across all the sectors. Since people migrate in search of better jobs to the neighbouring districts, it has become increasingly difficult to find local labourers for blue collar jobs. Low availability of skilled local labourers at the L1 and L2 levels has led to high inward migration from states like Orissa, Bihar and Jharkhand.

Mismatch between job opportunities and youth aspiration

There is a serious mismatch between types of jobs available and the aspirations of the district's inhabitants. This gap must be addressed and better job opportunities must be created.

Although education levels are high, skill levels do not really match them. There is a qualitative gap in skills. A person with an engineering degree or a B.Sc. is often unable to perform the jobs that he/she seeks. In spite of their education levels, people still need to gain skills and develop them through their jobs. Industries usually employ them at relatively lower entry level positions, so that they acquire the requisite skills before they are assigned to more complex work. However, a major proportion of the youth population are unwilling to accept such jobs and expect to start at a higher position on account of their educational qualifications.

14.9 Recommendations

14.9.1 State Government

Facilitate private sector participation in training

While there are a number of government schemes such as the PPP scheme for ITIs, the industry appears to be unaware of such initiatives and private sector participation in skill development is relatively low.

Action Plan:

a. Make details of all schemes soliciting private sector participation available online
b. Disseminate information through industry associations
c. Encourage private training providers by providing standardized curriculum, accreditation based on adherence to infrastructure norms, etc.

Increase penetration of skill development in rural and backward areas

The access to skill training continues to remain a challenge in the district, especially among women and the rural youth. The need to travel long distances is a key disincentive. Further, awareness on the benefits of skill development coupled by the absence of adequate hostel and accommodation facilities at institutes are seen to have an adverse impact on student enrolment and retention at ITIs

Action Plan:

a. Promote the idea of mobile classrooms
   - Recruit and train instructors to go to remote areas in the district and train students in select trades of local relevance or popular skill such as carpentry/joinery, plumbing, electrical, brickwork and painting - These classes are proven to be very hands-on and can engage teenagers for whom academic subjects do not appeal. They teach practical skills that young people often get little opportunity to learn, and improve their chances of employment.
   - Provide the instructors with the required inventory and infrastructure such a as a large van containing all the tools, equipment and materials needed
b. Use a hub and spoke approach, where satellite campuses for a hub ITI may be set up in remote areas. The hub will operate as an aggregator of demand and support the spokes (satellite campuses) with respect to placements and counselling , while a set of recruiters may be deployed in the satellite campus to deliver the curriculum
c. Provide hostel and other accommodation facilities at the vocational centres to improve enrolment and retention
d. Undertake skill awareness campaigns and conduct outreach programs in backward areas through SHGs

14.9.2 Industry

Participate in train the trainer programs to improve quality of training delivery and relevance of pedagogy to industry

The linkage between industry and training institutes continue to remain weak, with the industry playing little or no role in the development of curriculum and pedagogy, particularly for sectors such as automobile and textiles. As a consequence the curriculum delivered at most vocational training institutes remain outdated or of little relevance to industry requirements. As a consequence industries are increasingly faced with the prospect of hiring graduates who are not job-ready, resulting in large re-training costs. This is especially true of ITIs.

Action Plan:

a. Collaborate with ITIs/training institutes in the region and introduce industry relevant trades or courses
b. Incentivize greater emphasis on the practical component through paid internships for students during their course
c. Forge relationships with training institutes for the purpose of organizing meaningful training programmes that can cater for on-job-training and off-job training
d. Organize workshops for faculty members, with a focus on equipment and technical information needed to develop new skills of relevance to industry
e. Participate in the setting up of training centres through the PPP mode for standardization, regulation and promotion of vocational and skill education

Industry norms on promotions for unskilled and semi-skilled workers based on experience and abilities;

The vertical mobility of semi-skilled workers within an organization continue to remain limited. Currently there is no clear pay and career path for semi skilled workers in Industry. This is all the more visible in the case of unskilled workers who are predominantly recruited as contract labour.

Action Plan:

a. Restructure the pay scales of semi-skilled labour with a variable component to incentivize performance
b. Incentivize semi-skilled employees to acquire additional skills on the job and incentivize the same trough additional pay post completion of the course
c. Encourage unskilled to acquire skills on the job and certify them based on experience/abilities to encourage vertical mobility within the organization and greater portability across organizations.
d. Create a clear pay and career path for all semi-skilled employees and link promotions to pre-determined performance criteria
e. Establish a clear performance evaluation and appraisal system

14.9.3 Training Providers

Introduction of a dual apprenticeship model

Apprenticeship is designed to help students acquire much required practical experience and remains the key channel of connecting them with industry. In the district, apprenticeship has remained a nominal feature, with the students acquiring little or practical knowledge post completion of their course period. Further students who are employed as apprentices by the industry are rarely absorbed into the firm as full time employees, owing to the lack of practical experience built into their course curriculum and the high costs associated with training them on the job. Thus there is an urgent need to strengthen the practical component of training by introducing a dual apprenticeship model, wherein the student is expected to acquire industry experience both during the course and after completion.

a. Introduce a two month internship with local industries, embedded as a part of the course curriculum
b. Enter into MOUs with other local ITIs to ensure a continuous supply of trainees to industries
c. Create a student tracking system to regularly check the status of apprentices employed from the institute and assess the efficacy of the apprenticeship system

Improve the quality of instructors

Instructors are the fulcrum of a training institute and are the most critical input into the performance of the institute. Primary surveys in the district reveal that most training institutes suffer from the lack of good quality instructors. Further the government ITIs suffer from large faculty vacancies. In the absence of good instructors to deliver the training, the overall student morale is observed to be low.

Action Plan:

a. Revise and standardize the qualifications of teachers to suit the new curriculum standards
b. Induct teachers into the new curriculum and conduct a set of orientation courses to equip the teachers to deliver the new curriculum
c. Raise compensation for trainers to attract quality trainers and restructure the pay scales with a larger variable component linked to performance
d. Undertake training sessions in-house to up-skill instructors on courses.

14.9.4 NSDC

Strengthen train the trainers programs

There is a need for quality trainers for imparting courses at the lower skill levels for sectors such as automobile and textiles. Primary surveys in the district reveal that most training institutes suffer from the lack of good quality instructors. Further, there is lack of standardization of eligibility criteria for trainers both for entry and advanced levels resulting in varying criterion adopted by training institutes to select trainers.

Action Plan:

a. Promote modular courses for teachers to help them up-skill themselves on the job
b. Collaborate with industry to design refresher programmes to skill faculty

c. Engage master trainers to support the development of teacher training modules
d. Identify and support teacher training institutes
e. Create standard norms for certification of trainers based on level of training and type of training

Development of Skill Index – Definition of skills

There a number of skill providers in the district, who display varying levels of quality and rigor. Thus graduates passing out from a single trade like tailoring/ dress making may still display varying levels of skills based on the nature of institutes that they graduate from. There is a need to define and standardize the tasks a person who has attained a certain skill level should be able to perform.

Action Plan:

a. Define and standardize the tasks a person who has attained a certain skill level should be able to perform through the relevant SSCs
b. Develop a skill index, which integrates and measures the overall skill prowess of the individual
c. Certify the individual displaying the prescribed level of skill through SSCs

15 Perambalur

15.1 Overview

Perambalur is located in the centre of Tamil Nadu and is completely land locked. It is surrounded by Ariyalur and Tiruchirapalli in the South, Cuddalore in the east, Salem in the west and Viluppuram in the north. It is one of the smaller districts and is divided into a single revenue region, three taluks and four blocks. There is a single corporation, 4 town panchayats, 152 revenue villages and 121 panchayat villages.

Table 15-1: Basic Information (2010-11)

District Information	Perambalur	Tamil Nadu
Number of inhabited villages	143	15,400
Area (Sq Km)	2,822	127,905
% of state area	2.21	100
Area rank	23	-
Revenue divisions	1	-
Taluks	3	-
Blocks	4	-
Corporation & municipalities	1	-
Town panchayats	4	-
Revenue villages	152	-
Panchayat villages	121	-

Source: District Statistical Handbook (2010-11)

15.2 Demographic Profile

The district contains only about 1 % of the state population, making it one of the least populous districts in the state. The population is also the most sparsely distributed at 200 people per sq km, much lower than any other district. The population growth rate is lower than the state average at 1.44% annually, which suggests a stabilization of demographics in the future. The sex ratio is higher than the state average at 1010 females per 1000 males. The district has a very low level of urbanization with only 17% of the population falling under the urban category. Agricultural workers constitute a large fraction of the workforce at almost 39% of the total. About 65% of the population is in the working age group and worker participation rates are higher than the state average at 47.07%.

Table 15-2: Demographic Indicators (2011)

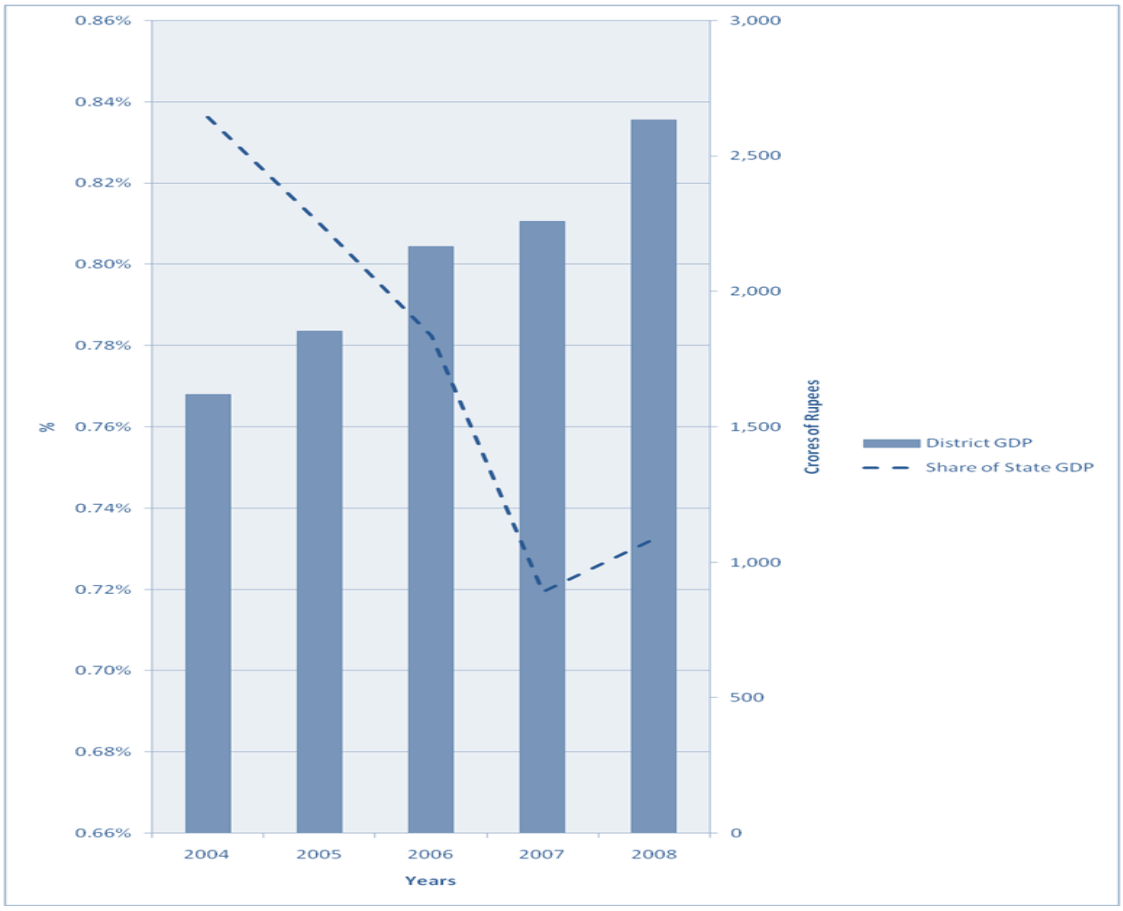
Population	Perambalur	Tamil Nadu
Population	564,511	72,138,958
Share of state population (in %)	1	100
Population density (per sq. km.)	200.07	564
Urban population percentage	17.14	48.45
Total population annual growth rate (in %)	1.44	2
Urban population	96,785	34,949,729
Sex ratio (number of females per 1000 males)	1006	995

Source: Census 2011 (Provisional)

15.3 Economic Profile

The contribution of the district to state GDP has varied between a high of 0.84% and a low of 0.72%. The contribution has reduced in recent years and is at about 0.73% in 2008-09. Per capita incomes are low relative to the state, and urban rural disparity is wide. The district is one of the more underdeveloped in the state, with per capita incomes falling much below state levels. Urban and rural incomes are significantly lower than the state average. Urban rural disparity is however, slightly lower than the state level with urban incomes about 76% greater than rural incomes. Human development indicators are low, with 0.596 and 0.592 for HDI and GDI respectively.

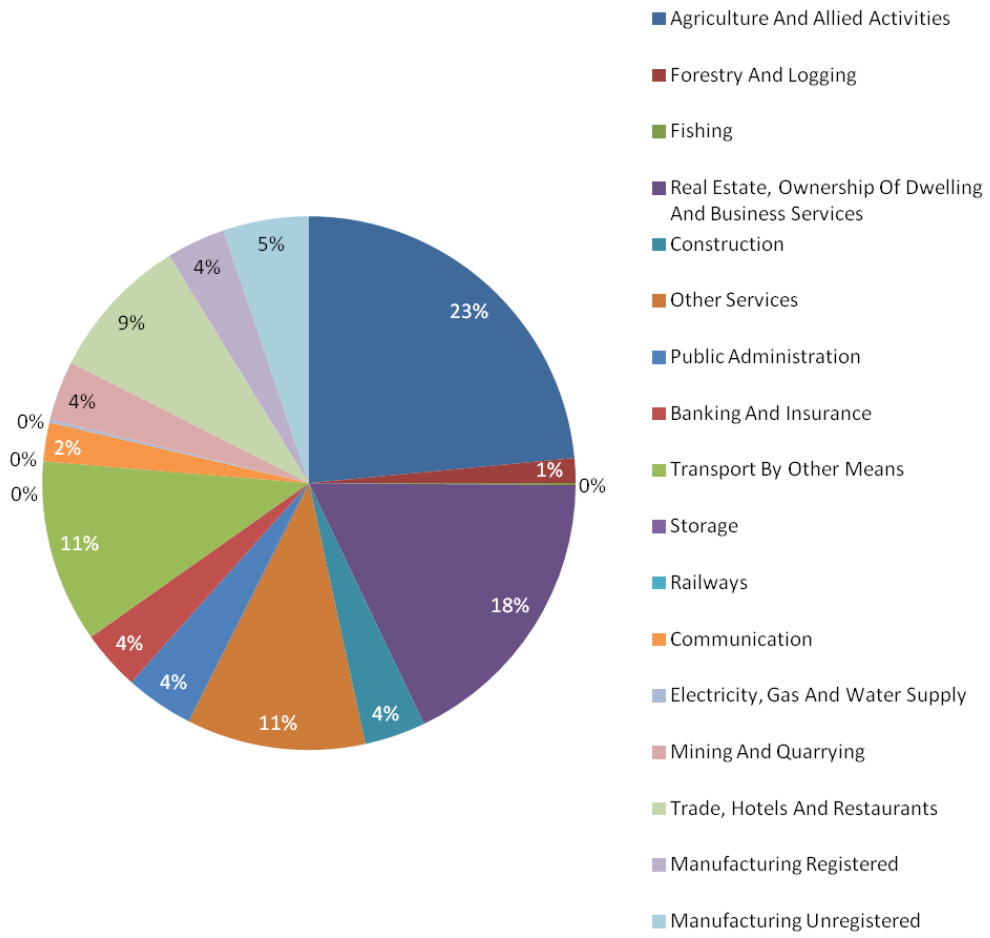
Figure 15.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Agriculture forms a major part of the district accounting for 23% of the district GDP. Real Estate services and transport accounted for 18%and 11% of district GDP, respectively. Manufacturing accounts for just 8 %, of which the majority is unregistered manufacturing at 5 %. Other dominant sectors include Trade, hotels and restaurants and Other Services.

Figure 15.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 15-3: Per Capita Income (2011-12)

Human Development Indicators	Perambalur	Tamil Nadu
Per capita urban income	60,000	100,600
Per capita rural income	34,000	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

15.3.1 Agriculture

More than 81% of the labor force in the district is engaged in agriculture. The household industry accounts for less than 2 % of the work force and the unorganized sector employs the residual 16%.

About 79% of the total sown area is under food crops. Around 64% of this sown area is under cereals and 23% under fruits and vegetables. Non food crops include sugarcane, cotton, oil seeds. Nearly 20% of the total sown area is under non-food crops. Almost 45% of this area is Oil seeds while cotton and Sugarcane cover 40% and 32 % of the area sown. Yield is lower than the state for all crops, while pulses, cotton and Oilseeds have marginally better yield than the state average.

Table 15-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	88,927	64.40%
Pulses	1,277	0.92%
Condiments	3,209	2.32%
Fruits and vegetables	32,871	23.81%
Other	11,792	8.54%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	11,746	32.52%
Cotton	14,487	40.11%
Oil Seeds	15,902	44.03%
Tobacco	0	0.00%
Other	-6,015	-16.65%
Total Area under Food Crops	**138,076**	**79.26%**
Total Area under Non Food- Crops	**36,120**	**20.74%**

Source: Tamil Nadu Crop Report (2011-12)

Table 15-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield for Perambalur	Yield for Tamil Nadu
Cereals	12,102	12,136
Pulses	2,868	2,763
Sugarcane	95	101
Condiments	8,707	32,440
Vegetables	106,780	164,422
Mango	4,795	4,795
Cotton	388	368
Tobacco	0	1,524
Oil seeds	20,137	16,484

Source: Tamil Nadu Crop Report (2011-12)

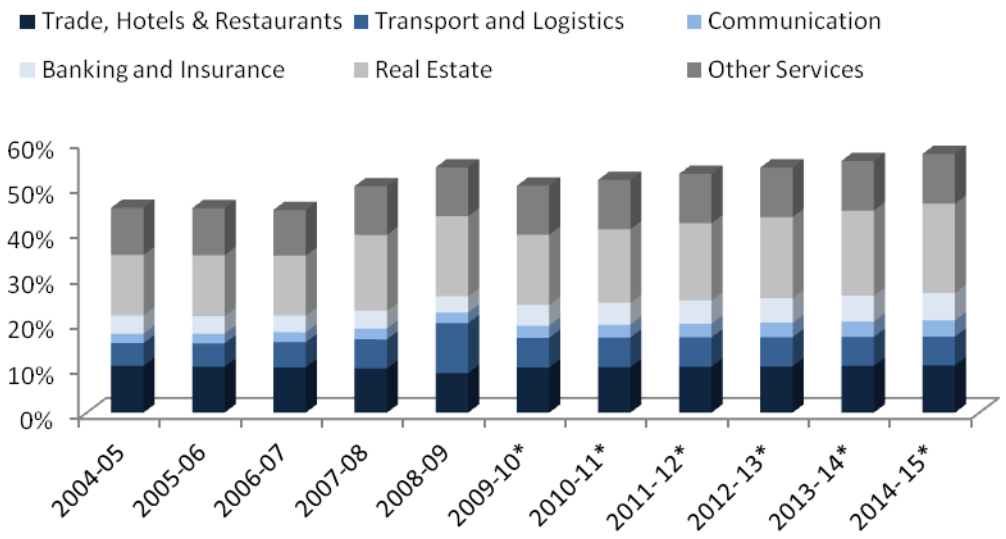
15.3.2 Industry

Perambalur is not particularly industrialized, but is home to some major industrial plants employing slightly over 25,000 people. There is a single industrial estate, set up by SIDCO at Elambalur and plans are underway to set up a SEZ in the district. The presence of large limestone deposits has lead to the presence of large cement factories like the privately owned JPR Cement factory. Similarly, sugarcane being a prominent crop, it is also a centre of large sugar mills. The 2 major mills are Perambalur sugars and Dhanalakshmi sugars, which each employ about 979 people. There is also a large tyre manufacturing plant by MRF, which is estimated to employ 800 people and indirectly provide employment to another 2,000.

The composition of the SME sector indicates that there is little linkage between the presence of large industrial plants and the growth of this sector. The majority of employment is generated by SMEs similar to those in other parts of the state, namely agro processing based and textiles.

15.3.3 Services

Figure 15.3: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The transport and logistics sector in the district witnessed a significant jump in terms of it contribution to GDP from 5% in 2004-05 to 11% in 2008-09 and has helped raise the profile of the service sector in the district from 45% in 2004-05 to 54% in 2008-09 and it is further expected to rise to 57% by 2014-15.

The organized services sector is estimated to employ approximately 50,000 people. There are 174 km worth of highways, both national and state, running through the district. The total length of rail routes is 42 km. Although the road length running through the district is substantial, these roads aren't always accessible or useable by the local inhabitants. Furthermore the level of infrastructural development in the district is low too, evidenced by rather low numbers of hospitals housed by the district.

15.4 State of Education

The literacy rate is significantly lower than the state average at 75%. Male and female literacy both rose in the period 2001-2011 from 77.9% and 54.4% to 83.39% and 66.11% respectively. Both female and male literacy are at an extremely low level in the district. The schooling network is quite sparse; the district contains 2 % of all schools in the state at a rate of about one school per 3 sq km, which given the low population density, needs to be evaluated in the light of supporting transport infrastructure.

Table 15-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	54.40	66.11	0.22
Male	77.90	83.39	0.07

Source: Census 2001, Census 2011(Provisional)

There are 684 primary schools, 206 upper primary schools, 89 secondary and 127 higher secondary schools in the district. Net enrollment ratios are high for the primary level, at nearly 99%, but drop off to 96% for the upper primary level. Dropout rates are low at the primary level at 2.5% but higher at the upper primary level at almost 10 % which is significantly higher than the state average.

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 74,569, while enrolment in schools that had primary and upper primary classes was 49,980. Enrolment in upper primary schools was 141 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 21,997, while enrolment in schools with upper primary and secondary/ higher secondary classes was 46,217.

Table 15-7: Education Profile (2010-11)

Educational Statistics	Units in Perambalur	Units in Tamil Nadu
Primary	684	33,909
Upper primary	206	8,552
Secondary	89	4,436
Higher secondary	127	4,632
NER – Primary (%)	98.92	98
NER - Upper primary (%)	96.89	98
Dropout rate- Primary (%)	2.54	3.81
Dropout rate - Upper primary (%)	9.94	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12

There are four engineering colleges and two arts and sciences colleges in the district. There is also a single management college, a single medical college and a single pharmacy college. There are five polytechnics in the district. The combined capacity of all the ITIs and ITCs in the district is 1,932. Details of major ITIs in the district are given in the appendix.

Table 15-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	4
Arts and sciences	2
Management	1
Medical	0
Dental	0
Nursing	0
Pharmacy	1
Other medical	1
Teacher training and education	0
Hospitality	0
Fashion technology	0
Polytechnics	5
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

15.5 Incremental Human Resource Availability

The current work force is estimated to be 2.35 lakh, which is estimated to grow to 2.88 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 25,000 and in 2017-22, the incremental availability is estimated to be 28,000.

Table 15-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	571	377	241	235		
2017	622	409	266	260	25	
2022	679	444	294	288		28

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the skilled level in 2012-17. However, with an increasing number of youth opting for formal education, the trend is expected to be reversed in 2017-22, with the availability of skilled resources exceeding that of semi-skilled resources.

Table 15-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	25	4	-4	25
2017-22	18	4	6	28

15.6 Incremental Human Resource Requirement

Being a primarily agrarian district, the development of industries is quite low in Perambalur. Most of the human resource requirement is expected to arise in the unorganized service sectors. The presence of small auto component units is expected to grow. The human resource requirement in the agriculture sector is expected to decline by 27,000 in 2012-17 and 23,000 in 2017-22.

Table 15-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-22	-1	-4	**-27**	-19	0	-4	**-23**
Automobile	0	0	0	**1**	0	0	0	**1**
Chemicals and Pharmaceuticals	0	0	0	**0**	0	0	0	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	0	0	0	**0**	0	0	0	**0**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**0**	0	0	0	**0**
Handlooms & Handicrafts	0	0	0	**0**	0	0	0	**0**
Leather	0	0	0	**0**	0	0	0	**0**
Textiles	0	0	0	**0**	0	0	0	**0**
BFSI	0	0	0	**0**	0	0	0	**0**
Construction	1	0	0	**1**	2	0	0	**3**
Education	0	0	0	**0**	0	0	0	**0**
Healthcare	0	0	0	**0**	0	0	0	**0**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	0	0	0	**0**	0	0	0	**0**
Organized Retail	0	0	0	**0**	0	0	0	**0**
Real Estate	0	0	0	**0**	0	0	0	**0**
Tourism & Travel	0	0	0	**0**	0	0	0	**0**
Transportation & Logistics	0	0	0	**0**	0	0	0	**1**
Unorganized (excluding Agriculture and Construction)	10	5	7	**23**	12	8	9	**29**
TOTAL	**-10**	**6**	**4**	**0**	**-4**	**9**	**7**	**13**

Source: Athena Research

15.7 Skill Gap

The skill gap is modest in the district, with incremental requirements for semi-skilled and skilled resources growing modestly over the next decade. The excess availability of unskilled human resources due to the expected contraction of human resource requirements in the agriculture sector indicates the need to skill existing resources and create employment opportunities in the district.

Table 15-12: Skill Gap in 000's

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	-10	6	4	**0**	-4	9	7	**13**
Incremental Human Resource Availability	17	4	4	**25**	18	4	6	**28**
Skill Gap	**-27**	**2**	**1**	**-25**	**-21**	**4**	**2**	**-15**

Note: Figures in negative indicate excess supply
Source: Athena Research

Qualitative Skill Gaps

High levels of disguised unemployment

Disguised unemployment is a major problem in the district due to over-reliance on agriculture for employment. Most of the people are either unaware of the opportunities for employment in the industry, or are unwilling to work in these industries due to lower flexibility in work conditions. Therefore, to keep themselves engaged, they usually work with their families on fragmented land holdings

Poor training infrastructure and low labour mobility

The level of industrial activity in the district is very low. There are two main, focus industries – an MRF tyre manufacturing unit and a few cement factories. These industries contribute substantially to the economy of the district, but they often have difficulties finding labourers. Although these industries have the potential to improve development and personal economic growth for the residents, they are constrained by the absence good training infrastructure, backwardness and low labour mobility prevalent in the district. The low availability of labour, skilled or otherwise, limits the potential for increasing labour inputs in the production process. The lack of interest in acquiring skills also makes training workers a challenging task.

15.8 Youth Aspirations

Table 15-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	Automobile	Unorganized
	Low	Electronics, Transportation and Logistics	Agriculture

Source: Athena Research

Negative disposition toward skill development

There are a few government funded ITIs and polytechnics in the district, but they have high vacancies. Initially when they were set up, they had almost full capacity utilization. However, over time, people who studied at these ITIs were either unable to find jobs, or did not like the jobs they found. There is a general perception amongst the district's inhabitants about the futility of technical education.

Low propensity to go in for higher education

There are a number of government schools in the district and most people are usually educated until the 8th or the 10th grade. There are also a few higher educational institutions in the district and they are privately owned. The youth in the district are often hesitant to spend on higher education as they do not see the benefits of an undergraduate education or a diploma. Therefore, although the district may appear to have high literacy rates, the conversion of education into higher skill levels is quite low.

Lack of career orientation and awareness

The focus group discussion with the youth displayed that they had little or no understanding of market opportunities and the benefits of skills development and were not sufficiently career oriented. Campaigns to generate awareness about skill development, the importance of employment and different career options are critical in order to enable the youth to broaden their views about employment, and make them career-oriented.

15.9 Recommendations

15.9.1 State Government

Facilitate programs to encourage entrepreneurship

Lack of skilled development opportunities coupled with the lack of incentives to foster entrepreneurship is a major problem in this district. Despite the enthusiasm among the district's inhabitants to start their own enterprises, currently there is not enough emphasis on grooming people to set up their own business or encourage entrepreneurship.

Action Plan:

a. Train the youth in multiple skills, with greater emphasis on sectors which can support local self employment

b. The Entrepreneurship Development Institute in the state must play a more proactive role in financing and regulating entrepreneurship programmes for youth in the district
c. Disburse seed capital to the youth based on a set of pre-determined criteria at a lower interest rate
d. Expand the voucher scheme to include multi-skilling and entrepreneurship programs

Improve quality and access to basic education

The development of educational facilities is low in the district and is constrained by the low availability of infrastructure. The lack of access to good basic education makes skill training challenging since the students are not familiar with basic concepts and are often unable to absorb the skill training imparted to them.

Action Plan

a. Expand and rehabilitate basic educational infrastructure in backward regions to improve access
b. Build strong teacher training institutions, with a greater focus on the improvement of pedagogical methods and provide continuous training for contractual teachers
c. Use campaigns to improve community awareness and involvement to ensure the sustainability, maintenance and good management of the school and ensure that children stay in school at least till the 10th

15.9.2 Industry

Short-term courses

For less skill intensive jobs in sectors such as food processing and construction, which have shown steady, albeit unorganized, growth in the district, industry may up-skill existing workers and skill potential candidates through partnerships with local NGOs or training providers.

Action Plan:

a. Identify blocks where the availability of human resources is high.
b. Partner with local NGOs and training providers to engage in community outreach to raise awareness about skill development.
c. Offer short-term training courses to equip students with the basic skills required for the industry.

15.9.3 Training Providers

Improve the enrolment of girls

Surveys in the district indicate that a gender blind approach towards delivering training have not worked very well in the backward regions of the district. Most of these areas are seen to register a very low level of enrolment of girls, owing to hesitation by their families to send the girls to an institution for training. There is a clear need to introduce mechanisms to encourage people to send girls to the training centre.

Action Plan:

a. Deploy female trainers in training centres in the backward regions. Women trainers provide safety and protection for the girl students and are seen to give them the confidence and opportunity to follow their own paths
b. Undertake community outreach drives and hold interactions with parents on the benefits of skilling their girl child

15.9.4 NSDC

Community learning initiatives for women in backward areas

Skilling women workers engaged in informal labour is critical to their empowerment and transition into a formal system with better benefits. However, since most women are constrained by social factors from entering the formal education and training system, a set of community led initiatives must be designed to help skill women in the backward areas in the district in multiple skills that may be applicable across various roles in the unorganized sector.

Action Plan:

a. Design short training modules customized to suit the employment opportunities available for women in the district
b. Collaborate with local Self Help Groups or Community based organizations to deliver the training modules
c. Facilitate the creation of Community Learning Centres in every district, to co-ordinate the activities of the Self Help Groups and provide the required support in terms access to funding and placement for the trained women

Entrepreneurship workshops

Workshops may be conducted in the district to provide basic training and information for aspiring entrepreneurs.

Action Plan:

a. Collaborate with local NGOs and industry to mobilize students.
b. Impart basic training for entrepreneurship.
c. Provide guidance on sources of finance, government assistance and other resources that entrepreneurs may access.
d. Provide access to online resources for entrepreneurship information.

16 Pudukottai

16.1 Overview

Pudukottai is located along the eastern coast of Tamil Nadu. It is bordered by Thanjavur in the east, Sivaganga and Ramanathapuram in the west, Tiruchirapalli in the west and the Bay of Bengal in the south. It is a moderately sized district and is divided into 2 revenue divisions, 11 taluks and 13 blocks. There are 2 corporations, 8 town panchayats, 757 revenue villages and 498 panchayat villages.

Table 16-1: Basic Information (2010-11)

District Information	Pudukottai	Tamil Nadu
Number of inhabited villages	736	15,400
Area (Sq Km)	4,665	127,905
% of state area	3.65	100
Area rank	12	-
Revenue divisions	2	-
Taluks	11	-
Blocks	13	-
Corporation & municipalities	2	-
Town panchayats	8	-
Revenue villages	757	-
Panchayat villages	498	-

Source: District Statistical Handbook (2010-11)

16.2 Demographic Profile

The district contains only about 2 % of the state population, making it one of the least populous districts in the state. The population is also very sparsely distributed at 347 people per sq km, much lower than the state average. The population growth rate is much lower than the state average at 0.81% annually, which suggests a stable demographic scenario. The sex ratio is much higher than the state average at 1020 females per 1000 males. The district has a very low level of urbanization, with only 19% of the population falling under this category. Agricultural workers constitute a large fraction of the workforce at almost 34%. About 65% of the population is in the working age group and worker participation rates are higher than the state average at 41.90%.

Table 16-2: Demographic Indicators (2011)

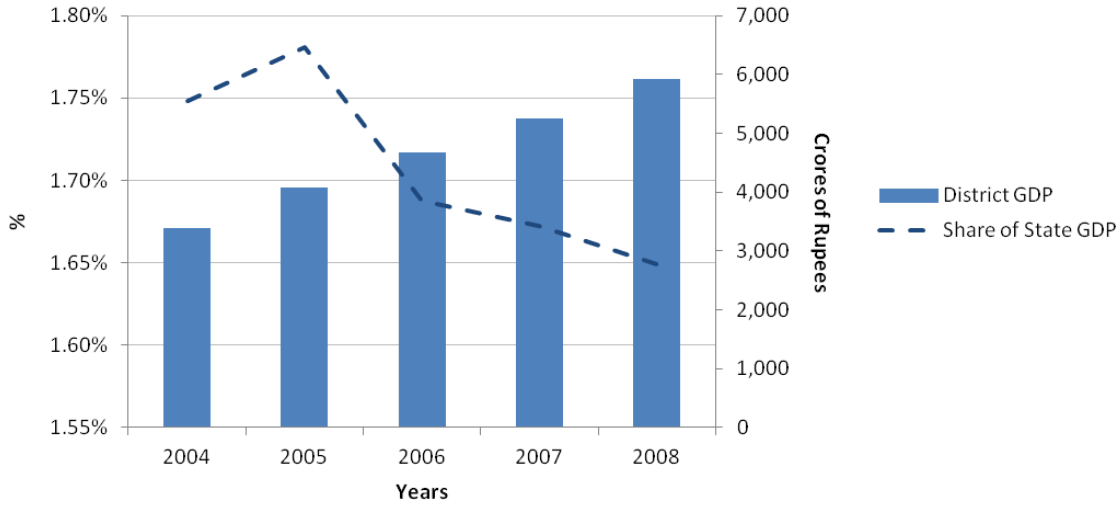
Population	Pudukottai	Tamil Nadu
Population	1,618,725	72,138,958
Share of state population (in %)	2	100
Population density (per sq. km.)	346.98	564
Urban population percentage	19.39	48.45
Total population annual growth rate (in %)	0.81	2
Urban population	313,925	34,949,729
Sex ratio (number of females per 1000 males)	1015	995

Source: Census 2011 (Provisional)

16.3 Economic Profile

The contribution of the district to state GDP has varied between a high of 1.77% and has been steadily declining in recent years .The contribution is about 1.65% in 2008-09. . The district is less economically developed than the state in general, but enjoys a relatively high standard of living. Urban and rural incomes are significantly lower than the state average. Urban rural disparity is quite high, with urban incomes exceeding rural incomes by 110%. Human development indicators are moderate, but lower than state averages at 0.618 and 0.615 for HDI and GDI respectively.

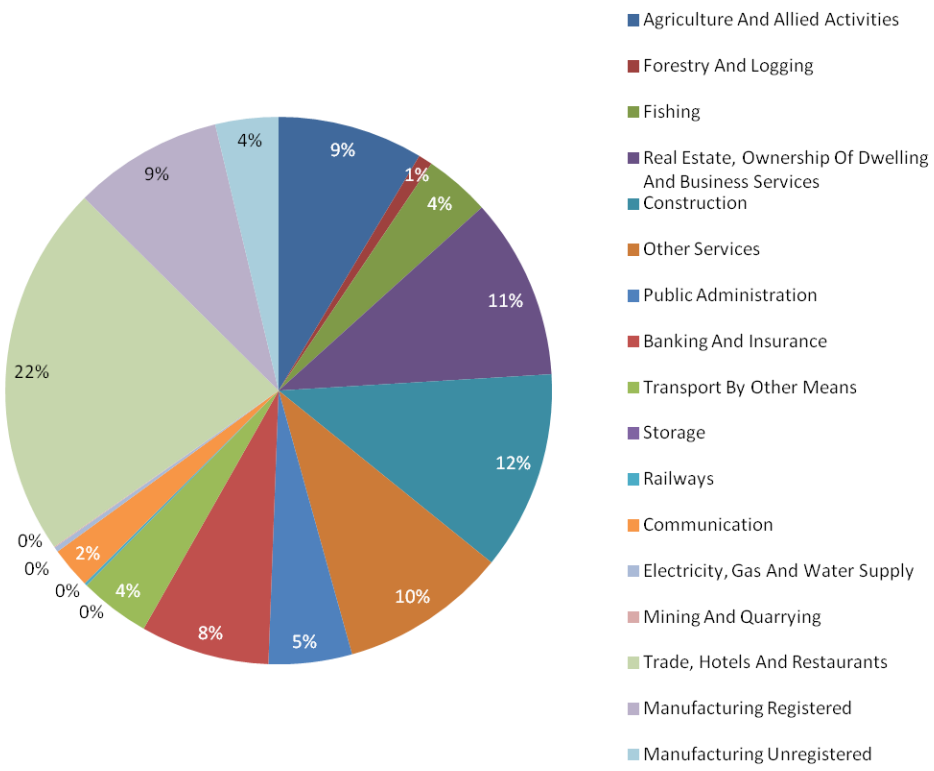
Figure 16.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Trade, hotels and restaurants accounted for 22% of district GDP, followed by construction at 12% and real estate services at 11%. Agriculture accounts for 9 %. Forestry and Fishing Activities contribute 1 % and 4 % each. Manufacturing accounts for just 13%, of which unregistered manufacturing is 4 %. Other dominant sectors include banking and financial services, and Other Services

Figure 16.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 16-3: Per Capita Income (2011-12)

Human Development Indicators	Pudukottai	Tamil Nadu
Per capita urban income	77,300	100,600
Per capita rural income	36,700	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

16.3.1 Agriculture

Agricultural laborers constitute about 30% of the total workers, while cultivators account for 11%. Furthermore, majority of the working population is constituted by main workers, which indicates that work was available for major part of the year for over 87% of the total workforce in the district.

Table 16-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	96,762	78.95%
Pulses	2,464	2.01%
Condiments	349	0.28%
Fruits and vegetables	14,262	11.64%
Other	8,725	7.12%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	8,571	25.76%
Cotton	66	0.20%
Oil Seeds	23,206	69.75%
Tobacco	0	0.00%
Other	1,425	4.28%
Total Area under Food Crops	**122,562**	**78.65%**
Total Area under Non Food- Crops	**33,268**	**21.35%**

Source: Tamil Nadu Crop Report (2011-12)

About 78% of the total sown area is under food crops. Around 78% of this sown area is under cereals, 2% under pulses and 11% under fruits and vegetables. Non food crops include sugarcane, cotton, oil seeds. Nearly 21% of the total sown area is under non-food crops. Almost 70% of this area goes to Oilseeds, 25% is under Sugarcane. Yield is higher than the state for cereals and Cotton, while it is lower than the state for all other major crop groups.

Table 16-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield for Pudukottai	Yield for Tamil Nadu
Cereals	12,324	12,136
Pulses	2,175	2,763
Sugarcane	101	101
Condiments	8,475	32,440
Vegetables	79,578	164,422
Mango	4,795	4,795
Cotton	458	368
Tobacco	0	1,524
Oil seeds	12,474	16,484

Source: Tamil Nadu Crop Report (2011-12)

16.3.2 Industry

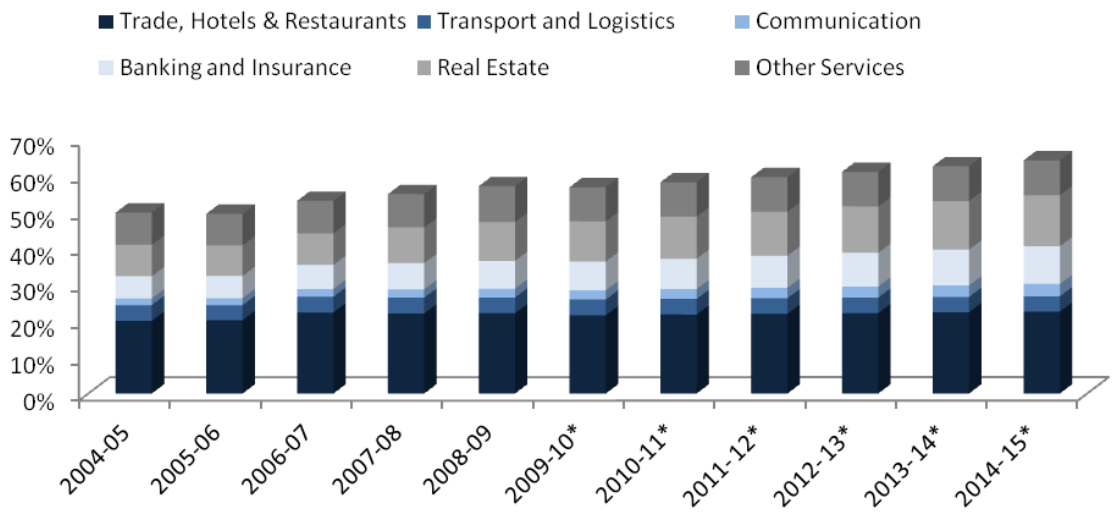
Pudukottai is moderately industrialized and shows potential for development in many sectors, with approximately 70,000 people employed in the major industries. There are 3 major industrial estates at Machuvadi, Mathur and a SIPCOT complex at Vallanur. There are 16 medium to large industrial units employing

about 800 people. There are over 9000 other registered industrial units, estimated to employ about 11,532 people. Some of the large plants include the Pudukottai District Co-operative Spinning mills in Thuraiarasapuram, Livia Polymer Bottles at Manndaiyur, High Energy Batteries Ltd at Mathur, EID Parry Ltd at Oonaiyur, Harihar Power and Alloys Pvt Ltd at Lakshmanampatti and Irizar TVS Ltd at Viralimalai. In addition a boiler manufacturing plant has been proposed by Cethar Vessels Ltd at Villampatti.

The composition of the SME sector shows a linkage between the development of heavy industries in the district and the growth in the SME space. The largest share of SMEs, both in number and employment, are in engineering and metal fabrication, which employ over 4000 people. In addition there are also a number of small scale rice mills and fibre production units. On the metallic front, there are also blue metal jelly manufacturing clusters and granite cutting units dotting various parts of the district. Primary research has revealed that industrial activity is organized, with fairly robust vertical and horizontal linkages amongst these units which increase their efficiency levels.

16.3.3 Services

Figure 16.3: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The contribution of the service sector to the district output has been growing moderately, with trade, hotels and restaurants remaining the largest contributor to district output at 22% in 2012-13. Real estate and banking and insurance, are also expect to witness robust growth and raise the contribution of the service sectors from 57% in 2008-09 to 64% in 2014-15.

Over 1.59 lakh people are employed in the services sector. Pudukottai has export potential in fish, coir, cashew nuts, granite and gemstones. There are 13 hospitals, 1 dispensary, 54 primary health care centres and 242 health sub centres with bed strength of 978. The small number of hospitals and primary health centres relative to sub centres suggests that the hospitals are concentrated in urban areas for the most part, and the majority of the health care needs of the population are serviced through the wider sub centre network. It is also possible the low population density results in an overall lower level of health care infrastructure, in which case the concentration and linkages with transport infrastructure needs to be studied to determine the robustness of the

health care system. There are 98 commercial bank branches in the district. There are more than 426 km of highways running through the district, along with 3,125 km worth of district roads.

16.4 State of Education

The literacy rate is significantly lower than the state average at 78%. Male and female literacy both rose in the period 2001-2011 from 82.55% and 59.97% to 86.51% and 69.51% respectively. The disparity between male and female literacy is high, but the high level of growth in female literacy is encouraging. The schooling network is quite sparse; the district contains 3 % of all schools in the state at a rate of about one school per three sq km, which given the low population density, depends on other factors like infrastructure for its effectiveness. NERs are stable relative to the state, at just about 98% for both primary and upper primary levels. The dropout rates are low at the Primary level at 2.7% but increase to 5.3% at the Upper Primary level.

Table 16-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	59.97	69.51	0.16
Male	82.55	86.19	0.04

Source: Census 2001, Census 2011(Provisional)

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 88,421, while enrolment in schools that had primary and upper primary classes was 64,214. Enrolment in upper primary schools was 507 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 36,658, while enrolment in schools with upper primary and secondary/ higher secondary classes was 45,444.

Table 16-7: Education Profile (2010-11)

Educational Statistics	Units in Pudukottai	Units in Tamil Nadu
Primary	1220	33,909
Upper primary	365	8,552
Secondary	131	4,436
Higher secondary	115	4,632
NER – Primary (%)	98.57	98
NER - Upper primary (%)	98.23	98
Dropout rate- Primary (%)	2.76	3.81
Dropout rate - Upper primary (%)	5.39	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

The state of higher education is moderate in the district. There are two arts and sciences colleges, three engineering colleges and 19 polytechnics. There is also a medical, a single Hospitality and a single Management college. The combined capacity of all the ITIs and ITCs in the district is 3,717.

Table 16-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	3
Arts and sciences	2
Management	1
Medical	0
Dental	0
Nursing	0
Pharmacy	0
Other medical	1
Teacher training and education	0
Hospitality	1
Fashion technology	0
Polytechnics	19
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

16.5 Incremental Human Resource Availability

The current work force is estimated to be 6.72 lakh, which is estimated to grow to 7.87 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 54,000 and in 2017-22, the incremental availability is estimated to be 60,000.

Table 16-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	1,632	1,079	689	672		
2017	1,745	1,148	744	727	54	
2022	1,870	1,222	804	787		60

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the skilled level.

Table 16-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	34	11	10	54
2017-22	37	14	9	60

16.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the unorganized sector and construction, mirroring state trends. Textiles, food processing, organized retail and BFSI are expected to see a moderate increase in human resource requirements. The human resource requirement in the agriculture sector is expected to decline by 38,000 in 2012-17 and 34,000 in 2017-22.

Table 16-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-32	-1	-6	**-38**	-28	-1	-5	**-34**
Automobile	0	0	0	**0**	0	0	0	**0**
Chemicals and Pharmaceuticals	0	0	0	**0**	0	0	0	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	1	0	0	**1**	1	0	0	**1**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**0**	0	0	0	**0**
Handlooms & Handicrafts	0	0	0	**0**	0	0	0	**0**
Leather	0	0	0	**0**	0	0	0	**0**
Textiles	3	1	1	**4**	4	1	1	**6**
BFSI	0	1	2	**2**	0	1	2	**3**
Construction	16	3	1	**20**	34	6	3	**44**
Education	0	0	0	**0**	0	0	0	**0**
Healthcare	0	0	1	**1**	0	0	1	**1**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	0	0	0	**1**	0	0	1	**1**
Organized Retail	2	0	1	**4**	3	1	2	**6**
Real Estate	0	0	1	**1**	0	0	1	**1**
Tourism & Travel	0	0	0	**0**	0	0	0	**0**
Transportation & Logistics	1	0	0	**1**	1	0	0	**1**
Unorganized (excluding Agriculture and Construction)	30	15	21	**65**	35	22	27	**84**
TOTAL	**20**	**20**	**23**	**62**	**51**	**32**	**34**	**117**

Source: Athena Research

16.7 Skill Gap

The largest skill gap is at the skilled level at 13,000 in 2012-17 and 25,000 in 2017-22. There is estimated to be an excess availability of human resources at the unskilled level. However, with an increasing number of youth opting for skilling, this gap is not expected to persist until 2022. At the semi-skilled level, the gap is estimated to be 9,000 in 2012-17 and 19,000 in 2017-22.

Table 16-12: Skill Gap in 000's

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	20	20	23	**62**	51	32	34	**117**
Incremental Human Resource Availability	34	11	10	**54**	37	14	9	**60**
Skill Gap	**-14**	**9**	**13**	**8**	**14**	**19**	**25**	**57**

Note: Figures in negative indicate excess supply
Source: Athena Research

The pattern of skill gap suggests sustained increase in the demand for semi skilled and skilled labor with the growth of sectors like BFSI, media and healthcare. Traditional industries are also expected to make a gradual change in the skill mix of their human resources to improve their production processes. This trend will continue in the next period, as employment grows with an expanding industry.

Qualitative Skill Gaps

Low propensity to migrate

There is not much inward or outward migration in the district. People's unwillingness to migrate to other places for work manifests itself as low labour mobility. Similarly, industrial growth is not high enough to attract people from other districts. Furthermore, the locals do not receive migrants well, which may also be a detrimental factor.

Lack of formalization of skills, especially at the L1 level

Unorganized growth of the services sector and the lack of formal skill training opportunities have led to the low availability of labour at the lower skill levels. While workers for jobs requiring higher level skills are sourced from different locations, retaining migrant workers at low-skilled jobs is seen to be a big challenge.

Low industry trainer collaboration for placement and curriculum

There are a few ITIs and polytechnics in different parts of the district. The unavailability of training staff and the mismatch between industry needs and course content leads to low recruitments from these institutes. Student mobilization is also a challenge and many of these institutes underutilize their capacity. Greater industry involvement in curriculum design and more student interaction with the industry through apprenticeships may help make these courses more relevant and suited to the job requirements.

Inadequate exposure to changing industry requirements

Pudukkottai has a large number of units in the lighting and fabrication industry. As a result, there is a high demand for fitters and welders. There is also significant demand for other L1 and L2 skills. While there are ITIs

and other skill training institutes that impart these skills, their syllabus is outdated and the equipment used to teach the students is very old. Students recruited from these institutes are unable to perform basic tasks since they are not familiar with newer processes.

16.8 Youth Aspirations

Table 16-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	BFSI	Construction
	Low	Education	Agriculture

Source: Athena Research

Low motivation levels

As of now, the motivation levels of the youth in the district seem to be quite low and are not sufficiently enterprising. Their attitude toward work and skills remain poor. Some of the government's welfare schemes, such as NREGA, are observed to counterproductive to skill development since they create a greater degree of lethargy.

Mismatch in Expectations

There is a mismatch between job expectations and work conditions at both the unskilled and skilled level. The respondents stressed the need for greater industrial training and placements at the skilled and semi-skilled level. There is a lack of guidance regarding skill development

Poor confidence levels

The respondents revealed that the lack of confidence remained one the key barriers preventing them from being absorbed into employment opportunities post graduation. The inability speak in English along with the absence of other key soft skills are the key factors contributing to the lack of confidence among the youth. Soft skills such as the use of computers and communication skills are essential for finding the desired jobs. Skill training programs must be holistic and provide such soft skills and placement assistance in addition to technical training.

16.9 Recommendations

16.9.1 State Government

Establishment of a ' Skills Panchayat'

There is a mismatch between the requirement and availability of skilled human resource in the district, mainly due to the presence of high information asymmetries and the inability of small firms to recruit from vocational institutes. For smaller firms, conducting campus recruitments is not a viable option since their human resource requirements are small and sporadic. Additionally, students who have completed diploma courses expect higher compensation even if their skill level does not match the job requirements and small firms are generally not in a position to meet such demands. Therefore, smaller firms find it difficult to source workers, and have to do so through informal methods.

Action Plan:

a. Set up a 'Skills Panchayat' within each district vested with the responsibility to:
   m. Aggregate data on the apprenticeship vacancies and employment opportunities in the district and display this information on a dedicated portal that can be accessed by students
   n. Undertake counselling for students graduating from ITIs and other vocational training institutes
   o. Organize campus placements
   p. Prepare students for job interviews
   q. Organize guest lectures and industrial visits
   r. The Skills Panchayat must consist of personnel from the district administration and local industries and should act as an aggregator of demand and supply in the region

Strengthen training infrastructure at ITIs/ITCs through the introduction of reform linked schemes

While the availability of semi-skilled human resources is relatively high in the district, the training infrastructure of ITIs/ITCs, a key contributor of skilled manpower in the district, is not at par with industry expectations. There is a need to upgrade the infrastructure and quality of training imparted by ITIs and ITCs in the district.

Action Plan:

a. Develop a manual prescribing standard architectural norm for all ITIs/ITCs, to ensure optimal use of space.
b. Evaluate the level of compliance among existing ITIs/ITCs to the prescribed architectural standards and identify gaps
c. Revise the equipments prescribed under NCVT norms and make them more relevant to industry requirements
d. Create a toolkit to enable ITIs to undertake a self-assessment of the status of their training infrastructure and submit annual reports to the Tamil Nadu Skill Development Mission
e. Introduce reform-linked schemes to incentivize ITIs/ITCs to improve the status of training infrastructure

16.9.2 Industry

Greater participation in skill development

To ensure relevance of training imparted to the industry, greater involvement and interaction with skill training providers is essential.

Action Plan:

a. Play a proactive role in skill development through participation in skill development schemes initiated by the government such as the PPP scheme.
b. Create captive training institutes that serve as model institutes for other training providers in the district.
c. Provide inputs to training providers on curriculum, pedagogy and equipment.
d. Regularly engage with the trainers to acquaint them of new developments and apprise them of suitable training methods.

Providing options for learning or pursuing skill development programs on the job;

Graduates who pass out of skill institutes perceive employment in industry as being a static option, with little or no upward mobility. As a consequence graduates passing out of vocational institutes remain at lower wage levels all through their career. Further, given that the poorest sections are the ones that often opt to enrol in Industrial Training Institutes, they are compelled to begin work early on and do not have the monetary bandwidth to acquire additional skills. Creating opportunities for learning on the job, will help industries improve employee morale and the productivity of labour employed.

Action Plan:

a. Encourage employees to attend external seminars, training session, or conferences and establish a company norm that the employee is expected to magnify the experience for the company by training other employees
b. Incentivize employees to acquire additional skills on the job by enrolling in part time courses and link promotions and wage increases to additional skills acquired
c. Hold orientation programs to acclimatise workers to formal work environments
d. Broaden an employee's knowledge of other functions and departments in the organization to improve portability of skills
e. Arrange for periodic in-house training with a training consultant/ tie-up with training institutions to up-skill the employees through on the job-training programmes

16.9.3 Training Providers

Industry Collaboration

The close collaboration of industry and institute can develop a competent and highly skilled workforce. The presence of a feedback loop, where the industry provides inputs regarding their perception of the quality and relevance of training delivered in a structured fashion is critical for the continuous development of the training facility. However, the linkage between the trainer and the industry is observed to be weak in the district.

Action Plan:

a. Map the set of industries that absorb students from the ITI through on campus/ off-campus recruitments
b. Create a formal feedback mechanism – Undertake an annual survey to extract feedback on the quality and relevance of training delivered in the institute
c. Incorporate the feedback and upgrade curriculum and pedagogy to reflect industry demand
d. Invite members from the Industry to deliver guest lectures at the institute
e. Enter into MOUs with industry to ensure continuous placements of students

Improve the quality of instructors

Instructors are the fulcrum of a training institute and are the most critical input into the performance of the institute. Primary surveys in the district reveal that most training institutes suffer from the lack of good quality instructors.

Action Plan:

a. Revise and standardize the qualifications of teachers to suit the new curriculum standards
b. Induct teachers into the new curriculum and conduct a set of orientation courses to equip the teachers to deliver the new curriculum
c. Raise compensation for trainers to attract quality trainers and restructure the pay scales with a larger variable component linked to performance
d. Undertake training sessions in-house to up-skill instructors on courses.

16.9.4 NSDC

Quality control

Since the development of training infrastructure is relatively low in the district, the SSCs may play a proactive role in standardization of quality for additional capacity created in the district.

Action Plan:

a. Develop standardized content by industry, mandating the inclusion of specific topics in the courses.
b. Accredit institutions that comply with SSC guidelines.
c. Maintain a database of skill training providers in the district.
d. Develop and disseminate a standardized evaluation framework based on competency benchmarks.
e. Bridge information gaps among industry, students and training providers through the Labor Market Information System.

Facilitate optimal pricing of training programmes

It must be ensured that any capacity creation in the district has rationalized fee structures and fosters employable skills to the students, particularly for initiatives in growing sectors such as BFSI and retail. The pricing the training delivered appropriately is a critical component.

Action Plan:

a. Encourage market surveys to determine willingness to pay among the students for different types of trades.
b. Compare course fees with expected wages on completion of the course.
c. Disseminate information among students through the Labor Market Information System regarding the nature of employment opportunities available on completion of the course to facilitate informed decision-making.

17 Ramanathapuram

17.1 Overview

The district of Ramanathapuram was formed in 1910 under the British rule, by combining certain parts of the then Madurai and Tirunelveli districts. Located on the eastern coastline of the state, the district spans an area of 4,392 square kilometres and is bounded by Sivaganga in the north, Virudhunagar in the west, Thoothukudi district and the Gulf of Mannar in the south and the Palk Strait in the east. The district is divided into 2 revenue divisions comprising of 7 taluks and 11 blocks. On the administrative front, the district has 4 municipality corporations, 400 revenue villages and 443 village panchayats.

Table 17-1: Basic Information (2010-11)

District Information	Ramanathapuram	Tamil Nadu
Number of inhabited villages	385	15,400
Area (Sq Km)	4,392	127,905
% of state area	3.43	100
Area rank	14	-
Revenue divisions	2	-
Taluks	7	-
Blocks	11	-
Corporation & municipalities	4	-
Town panchayats	7	-
Revenue villages	400	-
Panchayat Villages	443	-

Source: District Statistical Handbook (2010-11)

17.2 Demographic Profile

Although, the population of Ramanthapuram is sizeable, the relatively large area covered by the district leads to a medium level of population density, substantially lower than the state average. The population of the district accounts for 2% of the total population of the state. The annual population growth rate, too, is lower than the state average at 1.22%, indicating stable population growth in the future. The district is relatively rural, with only about 30% of its population being urbanized. Working age population comprises a majority of the total population of the district, whereas the worker participation ratio is considerably lower at about 40%. Agricultural workers constitute only 23.91% of the total workforce, once again lower than the state average.

Table 17-2: Demographic Indicators (2011)

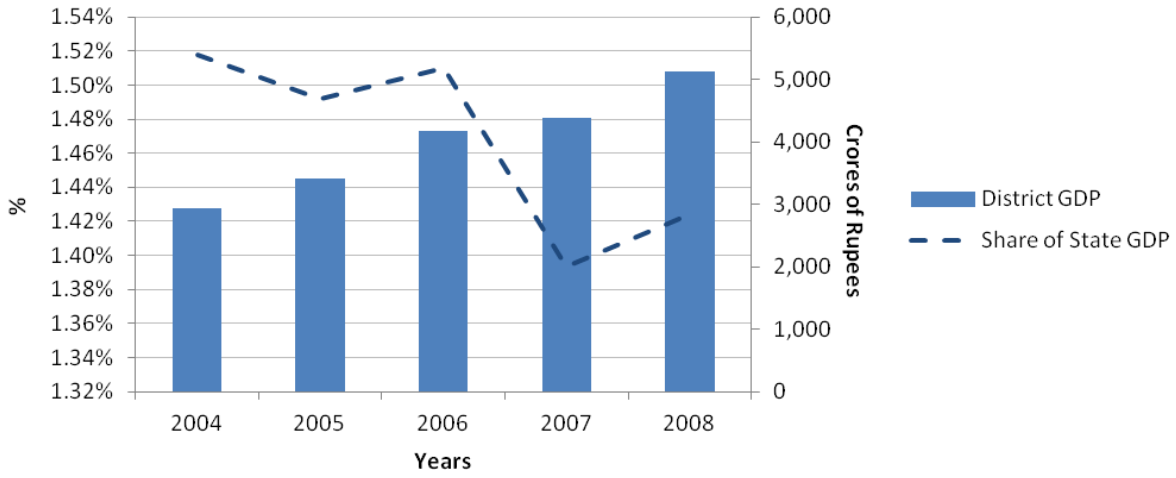
Population	Ramanathapuram	Tamil Nadu
Population	1,337,560	72,138,958
Share of state population (in %)	2	100
Population density (per sq. km.)	304.58	564
Urban population percentage	31.89	48.45
Total population annual growth rate (in %)	1.22	2
Urban population	426,611	34,949,729
Sex ratio (number of females per 1000 males)	977	995

Source: Census 2011 (Provisional)

17.3 Economic Profile

The contribution of the district to state GDP has varied between a high of 1.52% and a low of 1.4%. The contribution has moderated in recent years at about 1.42% in 2008-09. The district has a low per capita income at INR 36,372, with a high disparity between the urban and rural incomes. On the development front the district fares slightly worse than the state average, with HDI and GDI indicators at 0.629 and 0.626 respectively.

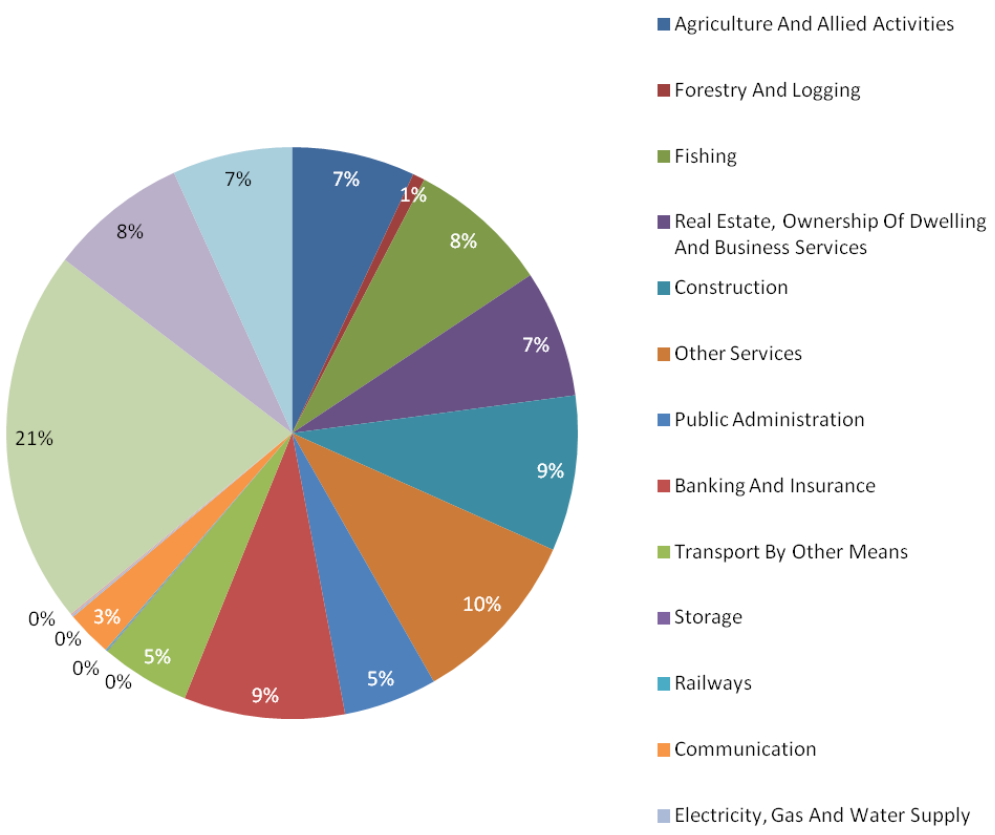
Figure 17.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Trade, hotels and restaurants accounted for 21% of district GDP, followed by Communication at 10 % Agriculture accounts for 7 % while fishing activities accounts for another 8 %. Manufacturing accounts for just 15%, of which the 7 % is unregistered manufacturing. Other dominant sectors include banking and financial services, Storage and railways.

Figure 17.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 17-3: Per Capita Income (2011-12)

Human Development Indicators	Ramanathapuram	Tamil Nadu
Per capita urban income	51,900	100,600
Per capita rural income	29,100	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

17.3.1 Agriculture

Of the total workers in the district, over 80% are main workers, while 16% are marginal workers, engaged seasonally. The total number of workers engaged in agricultural activity is considerably high, at 57%. Agriculture seems to be the primary mode of employment for a large proportion of the working population, which might explain the relatively high levels of marginal worker present in the district.

Around 88% of the total sown area is under food crops. About 80% of this sown area is under cereals, 14% under condiments. Non food crops include sugarcane, cotton, oil seeds. Nearly 11% of the total sown area is under non-food crops. Oil seeds have a major share of this area of about 35%. Yield is much lower than the state average for almost all crops except Sugarcane.

Table 17-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	134,227	80.84%
Pulses	3,690	2.22%
Condiments	23,821	14.35%
Fruits and vegetables	914	0.55%
Other	3,394	2.04%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	414	1.85%
Cotton	2,125	9.52%
Oil Seeds	7,836	35.10%
Tobacco	0	0.00%
Other	11,952	53.53%
Total Area under Food Crops	**166,046**	**88.15%**
Total Area under Non Food- Crops	**22,327**	**11.85%**

Source: Tamil Nadu Crop Report (2011-12)

Table 17-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield for Ramanathapuram	Yield for Tamil Nadu
Cereals	8,979	12,136
Pulses	1,767	2,763
Sugarcane	101	101
Condiments	3,859	32,440
Vegetables	40,234	164,422
Mango	4,795	4,795
Cotton	80	368
Tobacco	0	1,524
Oil seeds	9,504	16,484

Source: Tamil Nadu Crop Report (2011-12)

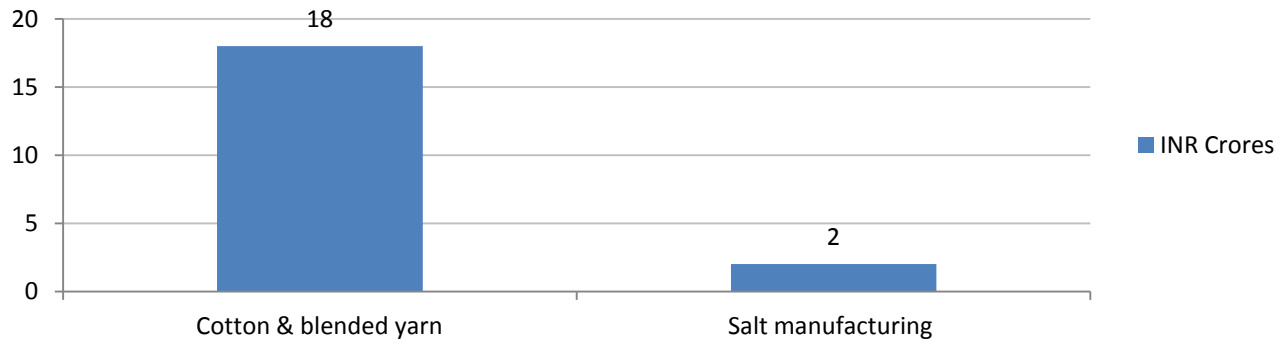
17.3.2 Industry

There are three major industries currently operational in Ramanthapuram – textiles, manufacturing of salt and electricity generation. Approximately 27,000 people are estimated to be employed in the major industry sectors. Of these, there is one salt manufacturing unit, five spinning units and three electricity generation units. All of these industries are medium scale in nature and generate limited employment – there are currently only 2,286 people employed in these industries. There are also a considerable number of medium scale industries engaged in various activities such as manufacturing of automobile components, electrical and electronic products, food processing, sugar and charcoal manufacturing among others.

Although there are six large scale industries, the district is dominated by small scale and cottage industries. There are 540 small scale industries and 350 cottage industries, mostly producing agro products and other traditional items such as coir mats and sari printing

The cotton and textile industry in particular is set to grow further, with about an investment of INR 18 crores being sanctioned in the district in 2011-12. Salt manufacturing, too, is set to grow with an investment of INR 2 crores. Lignite deposits were recently discovered by the Geological Survey of India (GSI) in the district, which may lead to the establishment of a metal and mining industry.

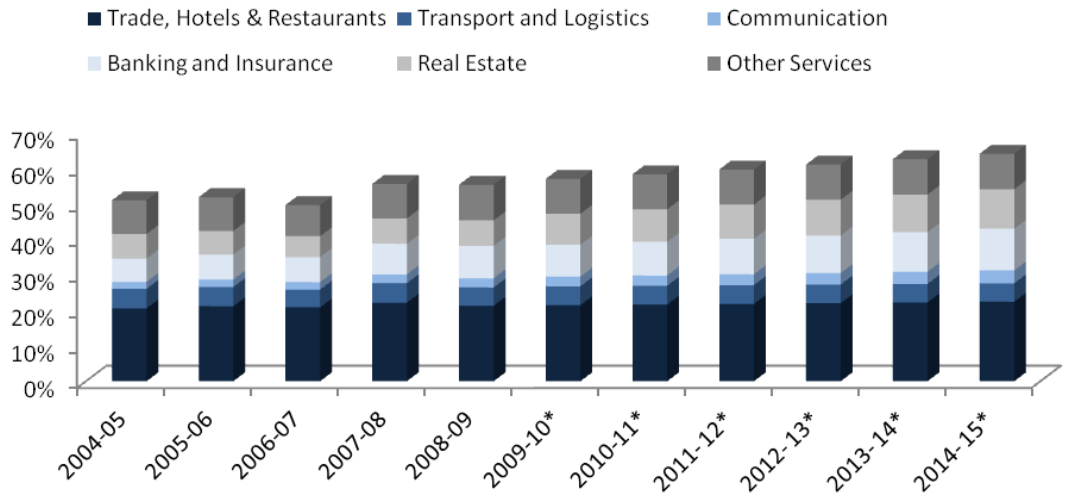
Figure 17.3: Investments in INR Crore



Source: Capex Data, CMIE (2011-12)

17.3.3 Services

Figure 17.4: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The contribution of the service sector to district GDP is expected to grow to 61% in 2012-13 from 55% in 2008-09, with trade, hotels and restaurants remaining the largest contributor to district output. Banking and

insurance and the real estate sectors are seen to be the fastest growing sectors and their contributions are expected to rise to 12% and 11% in 2014-15 from 7% in 2008-09 respectively.

Nearly 1.6 lakh people are employed in the services sector. The district has a considerable number of tourist places, including a number of religious sites that attract a number of pilgrims to the district. The Ramanathaswamy temple in Rameswaram, in particular, receives a huge number of visitors every year, especially during the 12 day Mahashivaratri festival. The rising number of devotees visiting the pilgrim centre of Rameswaram every year has led to a steady rise in the number of hotels and restaurants around the area.

On the whole, domestic and foreign tourism to Rameshwaram has risen steadily. However, the growth rate has been slightly volatile. The domestic tourism growth rate shows an overall upward trend, but foreign tourism shows a declining trend. One possible method for reviving foreign tourism would be to explore and develop other proximate areas around the district. On account of its proximity to the islands around Gulf of Mannar and Palk Strait, the district also has the potential of turning into a tourist hub. The Marine Biosphere reserve in Gulf of Mannar also provides opportunities for the development of ecological tourism. Tourism development can also be coupled with the development of already existing trading and logistics service activities. Primary research indicates that services sector has flourished in Ramanathapuram. Owing to the great number of chillies produced, chilly trading is carried out by a number of small trading units here. There are also other trading houses, involved in transport and logistics that facilitate trading activities in Ramanathapuram as well as Thoothukudi.

17.4 State of Education

Ramanathapuram has seen a steady rise in its literacy rate, contributing substantially to its HDI and GDI statistics. Both, male and female literacy, although lower than some of the more developed districts in Tamil Nadu, have shown substantial improvement over the past decade. Female literacy rate increased considerably from 63.4% in 2001 to 74.93% in 2011, while the male literacy rate progressed from 83% in 2001 to 87.89% in 2011.

Table 17-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	63.40	74.93	0.18
Male	83.00	87.89	0.06

Source: Census 2001, Census 2011(Provisional)

There are 1,019 primary schools, 263 upper primary schools, 94 secondary and 96 higher secondary schools in the district. Net enrollment ratios are high for the primary level, at nearly 100%, but drop off to 97% for the upper primary level. Dropout rates are low at the primary level at 1.8% but high at the upper primary level at 7.4%.

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 79,868, while enrolment in schools that had primary and upper primary classes was 53,541. Enrolment in upper primary schools was 83 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 22,842, while enrolment in schools with upper primary and secondary/ higher secondary classes was 40,989.

Table 17-7: Education Profile (2010-11)

Educational Statistics	Units in Ramanathapuram	Units in Tamil Nadu
Primary	1019	33,909
Upper primary	263	8,552
Secondary	94	4,436
Higher secondary	96	4,632
NER – Primary (%)	99.4	98
NER - Upper primary (%)	97.16	98
Dropout rate- Primary (%)	1.86	3.81
Dropout rate - Upper primary (%)	7.48	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12

There are five engineering colleges and seven arts and sciences colleges in the district. There is also a single medical and a single polytechnic in this district. The combined capacity of all the ITIs and ITCs in the district is 1,764. Details of major ITIs in the district are given in the appendix.

Table 17-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	5
Arts and sciences	7
Management	0
Medical	0
Dental	0
Nursing	0
Pharmacy	0
Other medical	1
Teacher training and education	0
Hospitality	3
Fashion technology	0
Polytechnics	1
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

17.5 Incremental Human Resource Availability

The current work force is estimated to be 5.56 lakh, which is estimated to grow to 6.66 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 52,000 and in 2017-22, the incremental availability is estimated to be 58,000.

Table 17-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	1,350	893	570	556		
2017	1,457	959	622	608	52	
2022	1,577	1,031	681	666		58

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level.

Table 17-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	33	4	15	52
2017-22	39	2	16	58

17.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the construction, tourism and travel and textiles. The human resource requirement in the agriculture sector is expected to decline by 45,000 in 2012-17 and 42,000 in 2017-22.

The long term growth sectors for Ramanathapuram appear to be textiles and construction. Organized retail may grow rapidly if provided an enabling environment. However, the growth of support services such as BFSI and transportation and logistics will be closely related to overall industry growth.

Table 17-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-38	-1	-7	**-45**	-33	-1	-6	**-40**
Automobile	0	0	0	**0**	0	0	0	**0**
Chemicals and Pharmaceuticals	0	0	0	**0**	0	0	0	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	1	0	0	**1**	1	0	0	**1**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**0**	0	0	0	**1**
Handlooms & Handicrafts	-1	0	0	**-2**	-1	0	0	**-1**
Leather	0	0	0	**1**	0	0	0	**1**
Textiles	3	0	1	**4**	4	1	1	**5**
BFSI	0	1	2	**2**	0	1	2	**3**
Construction	10	2	1	**13**	22	4	2	**28**
Education	0	0	0	**0**	0	0	0	**0**
Healthcare	0	0	1	**1**	0	0	1	**1**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	0	0	1	**1**	0	0	1	**1**
Organized Retail	2	0	1	**3**	3	1	2	**5**
Real Estate	0	0	0	**0**	0	0	0	**1**
Tourism & Travel	5	18	16	**39**	8	31	28	**67**
Transportation & Logistics	1	0	0	**1**	1	0	0	**1**
Unorganized (excluding Agriculture and Construction)	24	12	17	**54**	29	19	22	**69**
TOTAL	**7**	**34**	**33**	**73**	**34**	**57**	**54**	**144**

Source: Athena Research

17.7 Skill Gap

The largest skill gap is at the semi skilled level at 30,000 in 2012-17 and 55,000 in 2017-22, driven by the growth of service sectors such as organized retail and tourism and travel, where the skill requirements are rising with the level of formalization of the industry as a whole. There is estimated to be an excess availability of human resources at the unskilled level on account of a fall in human resource requirements in the agriculture sector. At the skilled level, the gap is estimated to be 18,000 in 2012-17 and 38,000 in 2017-22, indicating potential for skilling the excess availability of unskilled resources and channelizing them towards meeting the excess requirements at the semi-skilled and skilled levels.

Table 17-12: Skill Gap in 000s

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	7	34	33	**73**	34	57	54	**144**
Incremental Human Resource Availability	33	4	15	**52**	39	2	16	**58**
Skill Gap	**-26**	**30**	**18**	**21**	**-6**	**55**	**38**	**86**

Note: Figures in negative indicate excess supply
Source: Athena Research

Qualitative Skill Gaps

Low industry trainer collaboration for placement and curriculum

There are a few ITIs and polytechnics in different parts of the district. The unavailability of training staff and the mismatch between industry needs and course content leads to low recruitments from these institutes. Student mobilization is also a challenge and many of these institutes underutilize their capacity. Greater industry involvement in curriculum design and more student interaction with the industry through apprenticeships may help make these courses more relevant and suited to the job requirements

Rising outward migration

The lack of suitable employment opportunities cause people to go abroad, usually to Singapore, Malaysia and other South East Asian countries in search of better employment opportunities. They receive better salaries in such countries and have adequate options to improve their careers. This trend of outward migration has been increasing over the past few years. This has created a serious shortage of labour at the L1 and L2 levels in the district.

Low compensation for skills

Unemployment isn't as acute as it is in other districts, since there are many job opportunities available. However, many of these jobs pay meagre salaries and the people do not associate much dignity with such work. Better working conditions that fulfil people's expectations are required to motivate them to work. There are a few training institutes set up by the Indian Overseas Bank. They offer courses in trades such as welding and carpentry. People who are trained in these institutes only find a marginal improvement in their earning opportunities, owing to poor linkages between the skill institutes and nearby industries. This is serious disincentive to acquire formal skills.

17.8 Youth Aspirations

Table 17-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	Tourism and Travel	Construction
	Low	Health, Education	Chemicals, Gems & Jewelry

Source: Athena Research

Poor career progression within the district

The youth do not do not see much scope for career progression within the district. This drives them to look for opportunities abroad and elsewhere. Thus the semi skilled and skilled labour tend to leave the district to be replaced by unskilled migrants from neighboring state or districts

Mismatch between abilities and educational attainment

Surveys in the district revealed that very few people enrol in skill development courses and even those who complete such courses do not possess the requisite skills to perform the jobs they are assigned to and have very high expectations. The mismatch between ability and desire is a product of information asymmetries and lack of career guidance and counselling.

Socio-economic constraints prevent access to skilling among girls

Cultural factors often prove to be a constraint, especially for women. They are very enterprising, but they are not encouraged to pursue further educational opportunities. This causes them to be confined to their homes, performing traditional roles

17.9 Recommendations

17.9.1 State Government

Establishment of a ' Skills Panchayat'

The qualitative and quantitative skill gap may be bridged by making relevant information available at the block and village level to assist students in making informed education and career choices. A number of youth graduating from vocational institutes join the unemployed labour pool, on account of lack of information about the various job opportunities that are available, especially in the MSME sector. A Skills Panchayat is proposed as a micro-level mechanism to bridge the information gap at the district level.

Action Plan:

a. Set up a 'Skills Panchayat' within each district vested with the responsibility to:
   s. Aggregate data on the apprenticeship vacancies and employment opportunities in the district and display this information on a dedicated portal that can be accessed by students
   t. Undertake counselling for students graduating from ITIs and other vocational training institutes

u. Organize campus placements
v. Prepare students for job interviews

b. The Skills Panchayat must consist of personnel from the district administration and local industries and should act as an aggregator of demand and supply in the region

Focus on Skilling Women and other Vulnerable Groups

The access to skill training continues to remain a challenge in the district, especially among women and the rural youth. The need to travel long distances is a key disincentive. Further, awareness on the benefits of skill development coupled by the absence of adequate hostel and accommodation facilities at institutes are seen to have an adverse impact on student enrolment and retention at ITIs

Action Plan:

a. Promote mobile classrooms/ remote education whereby classes conducted at a vocational training institutes is uploaded online or screened at nearby schools or other facilities for providing access to training in backward areas
b. Provide hostel and other accommodation facilities at the vocational centres to improve enrolment and retention
c. Undertake skill awareness campaigns and conduct outreach programs in backward areas through SHGs

17.9.2 Industry

Participate in train the trainer programs

The linkage between industry and training institutes continue to remain weak, with the industry playing little or no role in the development of curriculum and pedagogy. As a consequence the curriculum delivered at most vocational training institutes remain outdated or of little relevance to industry requirements. As a consequence industries are increasingly faced with the prospect of hiring graduated who are not job-ready, resulting in large re-training costs. This is especially true of ITIs.

Action Plan:

a. Collaborate with ITIs/training institutes in the region and introduce industry relevant trades or courses
b. Incentivize greater emphasis on the practical component through paid internships for students during their course
c. Forge relationships with training institutes for the purpose of organizing meaningful training programmes that can cater for on-job-training and off-job training
d. Organize workshops for faculty members, with a focus on equipment and technical information needed to develop new skills of relevance to industry
e. Participate in the setting up of training centres through the PPP mode for standardization, regulation and promotion of vocational and skill education

17.9.3 Training Providers

Short-term courses

For less skill intensive jobs in sectors such as food processing and construction, which have shown steady growth in the district, industry may up-skill existing workers and skill potential candidates through partnerships with local NGOs or training providers.

Action Plan:

a. Identify blocks where the availability of human resources is high.
b. Partner with local NGOs and training providers to engage in community outreach to raise awareness about skill development.
c. Offer short-term training courses to equip students with the basic skills required for the industry.
d. Ensure upward revision of wages on completion of the course to incentivize students to enroll.

Use of existing infrastructure

For sectors such as construction, tourism and travel and retail, training may be imparted at the work place.

Action Plan:

a. Institute courses that impart training on the job in partnership with industry. Such courses may offer theoretical training once a week combined with hands on experience for the rest of the week.
b. Adopt short training modules to minimize opportunity cost to students.
c. Include soft skills and organizational behavior in the curriculum to address issues regarding attitude to work.

17.9.4 NSDC

Encourage earn while you learn programmes

Given the high levels of disguised unemployment in the district, there is a clear case for up skilling. However most people in the district are observed to be economically backward and often tend to drop out of the formal educational system owing to economic compulsions. Thus there is a need in the district to up-skill human resources by encouraging earn while you learn programs.

Action Plan:

a. Group the people engaged as labour into groups based on location and provide select skill trainers in the district with the required inventory to implement the 'mobile-classroom' concept to go to where the worker
b. Provide stipends to those interested in acquiring certifications in skill on a part time basis by using the existing vocational infrastructure
c. Encourage skill trainers to introduce modular employability trades of relevance to local demand with flexible timings

Community learning initiatives for women in backward areas

The need for skill development is felt most among the women in the district, who mostly are kept out of the formal education and training system and often are subject to greater economic and social repression. Skilling women workers engaged in informal labour is critical to their empowerment and transition into a formal system with better benefits. However, since most women are constrained by social factors from entering the formal training system, a set of community led initiatives must be designed to help skill women in the backward areas in the district.

Action Plan:

a. Design short training modules customized to suit the employment opportunities available for women in the district in sectors such as textiles, leather and food processing.
b. Collaborate with local Self Help Groups or Community based organizations to deliver the training modules
c. Provide skill vouchers to encourage women to participate in training in more urbanized areas
d. Facilitate the creation of Community Learning Centres to provide the required support in terms access to funding and placement for the trained women

18 Salem

18.1 Overview

Salem is located in north Tamil Nadu. It is surrounded by Namakkal and Tiruchirapalli in the south, Viluppuram in the east, Erode in the west and Dharmapuri in the north. It is the ninth largest district in the state. The district is divided into 4 revenue divisions, 9 taluks and 20 blocks. There are 5 corporations, 33 town panchayats, 631 revenue villages and 385 panchayat villages.

Table 18-1: Basic Information (2010-11)

District Information	Salem	Tamil Nadu
Number of inhabited villages	557	15,400
Area (Sq Km)	5,100	127,905
% of state area	3.99	100
Area rank	9	-
Revenue divisions	4	-
Taluks	9	-
Blocks	20	-
Corporation & municipalities	5	-
Town panchayats	33	-
Revenue villages	631	-
Panchayat villages	385	-

Source: District Statistical Handbook (2010-11)

18.2 Demographic Profile

The district constitutes almost 5% of the state population, making it one of the most populous districts in the state. The population is also densely distributed at 682 people per square kilometer, much higher than the state average. The population growth rate is lower than the state average at 1.06% annually, which suggests a stabilization of demographics in the future. The sex ratio is much lower than the state average at 950 females per 1000 males. The district is highly urbanized with over 51% of the population falling under the urban category. Agricultural workers constitute a smaller fraction of the workforce at 26.67%. About 62% of the population is in the working age group and worker participation rates are higher than the state average at 41.80%.

Table 18-2: Demographic Indicators (2011)

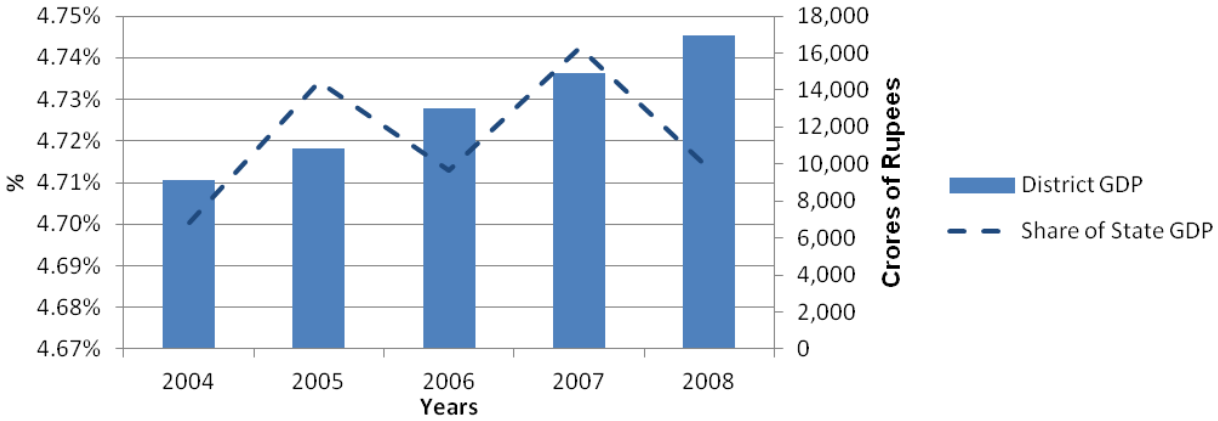
Population	Salem	Tamil Nadu
Population	3,480,008	72,138,958
Share of state population (in %)	5	100
Population density (per sq. km.)	682.35	564
Urban population percentage	51.04	48.45
Total population annual growth rate (in %)	1.06	2
Urban population	1,776,321	34,949,729
Sex ratio (number of females per 1000 males)	954	995

Source: Census 2011 (Provisional), Census 2001

18.3 Economic Profile

The contribution of the district to the state GDP is approximately 4.7%. The contribution has moderated in recent years and is steady at about 4.71% in 2008-09. The district is less developed than the state as a whole, with per capita incomes falling below state levels. Urban and rural incomes are significantly lower than the state average. Urban rural disparity is, however, lower than the state level with urban incomes about 69% greater than rural incomes. Human development indicators are moderate, but lower than state averages at 0.626 and 0.625 for HDI and GDI respectively.

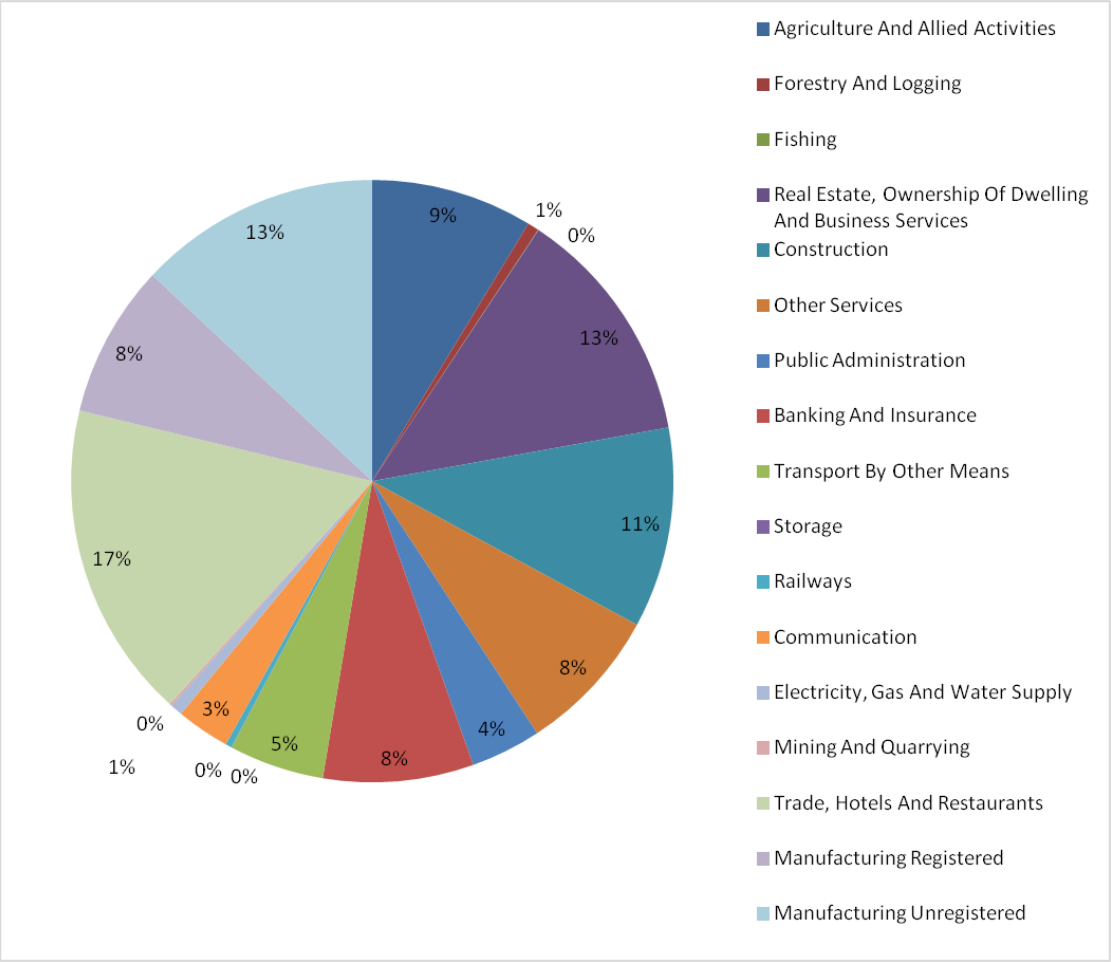
Figure 18.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Trade, hotels and restaurants accounted for 17% of the district GDP, followed by real estate services at 13%. Agriculture accounts for 9%. Manufacturing accounts for 21%, of which more than half is unregistered manufacturing at 13%. Other dominant sectors include construction, banking and financial services, and other services.

Figure 18.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 18-3: Per Capita Income (2011-12)

Human Development Indicators	Salem	Tamil Nadu
Per capita urban income	69,800	100,600
Per capita rural income	41,400	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

18.3.1 Agriculture

About 40% of the labor force is engaged in agricultural activity in the district. The majority of the labor force at 43% is engaged in other, unregistered activities, most likely small scale industries or services. There are a wide variety of crops grown in the district, and no single crop occupies more than 20% of the sown land area. Major crops include rice, pulses, groundnut, maize, tapioca, cotton, coconut and turmeric.

Table 18-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	74,274	49.96%
Pulses	14,419	9.70%
Condiments	7,323	4.93%
Fruits and vegetables	39,077	26.29%
Other	13,573	9.13%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	11,525	12.55%
Cotton	14,704	16.01%
Oil seeds	28,540	31.07%
Tobacco	220	0.24%
Other	36,869	40.14%
Total Area under Food Crops	**148,666**	**61.81%**
Total Area under Non Food- Crops	**91,858**	**38.19%**

Source: Tamil Nadu Crop Report (2011-12)

About 62% of the total sown area is under food crops. Nearly 50% of this sown area is under cereals, 9% under pulses and 26% under fruits and vegetables. Non food crops include sugarcane, cotton, oil seeds and tobacco. Around 38% of the total sown area is under non-food crops. Almost 12% of this area goes to sugarcane, 16% is under cotton while oil seeds have a share of 31% of the remaining sown area. Yield is higher than the state for cereals, pulses, mango and oil seeds, while it is lower than the state for all other major crop groups.

Table 18-5: Major Crops: Yield in KG per Hectare in 2011-12

Crop	Yield For Salem	Yield for Tamil Nadu
Cereals	12,864	12,136
Pulses	2,823	2,763
Sugarcane	82	101
Condiments	13,843	32,440
Vegetables	132,697	164,422
Mango	5,116	4,795
Cotton	336	368
Tobacco	1,051	1,524
Oil seeds	16,861	16,484

Source: Tamil Nadu Crop Report (2011-12)

18.3.2 Industry

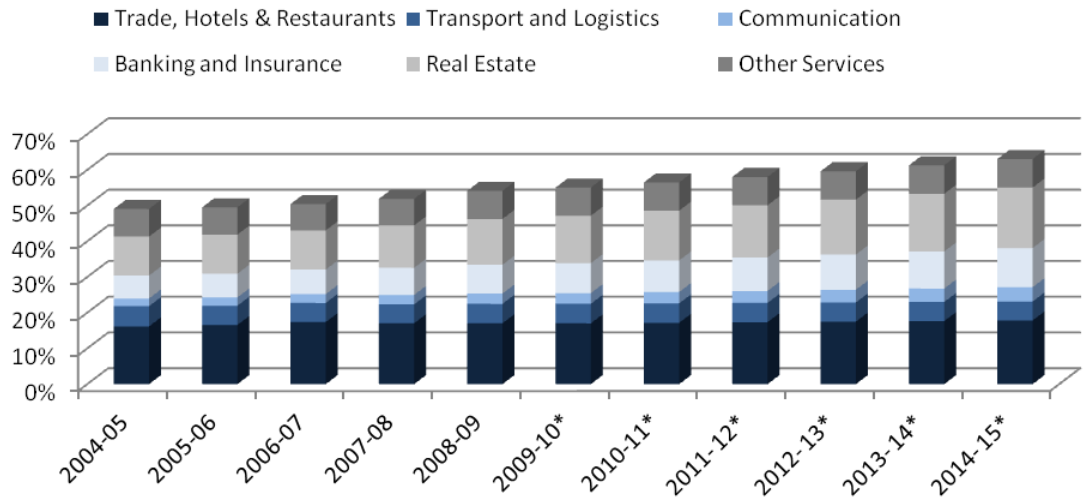
In terms of industrialization, Salem is second only to the top districts of Chennai, Madurai and Coimbatore. It has earned the moniker of Steel City due to the long standing presence of a SAIL steel plant in the region. The district is rich in mineral resources which give rise to allied industries in cement, aluminum and metals processing. The cements plants are located at Sankagiri and Karuppur. The district also has substantial magnesite and bauxite deposits, which is used in refractory, chemical and aluminum industries. This has lead to the presence of large industrial plants in the district. Major industrial units present include the Salem Steel Plant, JSW Steel, MALCO, Chemplast SANMAR, Burn Standard and Co, Tata Refractories, Dalmia Magnesite Ltd, TANMAG, SAGOSERVE, Indian Oil Bottling Plant, POWERGRID, India cements, Madras Cements, Paragon chappals, Narasus exports, Rasi seeds and a number of spinning mills. SAIL is planning a steel SEZ inside the Salem plant and an electronics industrial estate is maintained by the state DIC at Suramangalam.

The district is particularly famous for the manufacture of silver jewellery. About 2,000 kg of silver articles are manufactured by 10,000 units daily, giving Salem a 60% share in the market for silver anklets in the nation. Additionally, the two major agro processing industries are in textiles and tapioca processing. Salem is one of the major textiles manufacturing and exporting centers in the state. A large number of mills and looms are located in the clusters of Idapady and Mettur in Salem. Tapioca is a major crop grown in the district and there are over 650 units engaged in processing the produce.

The composition of the SME space shows that the industrial growth in the region has been the driver of activity in this space, with a majority of units and employment being generated by cotton textiles, metal fabrication and engineering industries, which together employ over 32,000 people. Primary research highlights the rising number of sick units in the various industrial estates across the district. Further, most of the industrial units have become increasingly automated, leading to a lower growth in employment opportunities for the districts' inhabitants.

18.3.3 Services

Figure 18.3: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The contribution of the service sector to district output is expected to rise from 54% in 2008-09 to 60% in 2012-13, with the banking and insurance and real estate being the two key drivers of growth. The real estate and banking and insurance sector are expected to contribute to 15% and 1fqualitative0% of the district GDP in 2012-13 respectively.

The organized services sector employs nearly 3.7 lakh people in the district. There are 25 hospitals, 14 dispensaries, 93 primary health care centers and 398 health sub centers with a bed strength of 1767. The small number of hospitals relative to secondary medical centers suggests that the hospitals are concentrated in urban areas for the most part, and the majority of the health care needs of the population are serviced through the wider secondary network. There are at least 219 private banks and 36 cooperative banks. About 7,900 kilometers of surfaced roads run through the district, including national and state highways. There are also more than 1,560 kilometers of un-surfaced roads. There are 26 railway stations serving about 276.41 kilometers of track.

18.4 State of Education

The literacy rate is significantly lower than the state average at 73%. Male and female literacy both rose in the period 2001-2011 from 74.4% and 55.2% to 80.70% and 65.43% respectively. Both female and male literacy rates are at an extremely low level in the district. The schooling network is quite sparse; the district has 3% of all schools in the state at a rate of about one school per three square kilometer, which considering the population and size of the district, is below the state average. NERs are weak relative to the state, at just about 97% for both primary and upper primary levels.

Table 18-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	55.20	65.43	0.19
Male	74.40	80.70	0.08

Source: Census 2001, Census 2011(Provisional)

Table 18-7: Education Profile (2010-11)

Educational Statistics	Units in Salem	Units in Tamil Nadu
Primary	1339	33,909
Upper primary	333	8,552
Secondary	245	4,436
Higher secondary	282	4,632
Primary age population	97.05	98
NER – Primary (%)	97.8	98
NER - Upper primary (%)	5.1	3.81
Dropout rate- Primary (%)	5.82	7.58
Dropout rate - Upper primary (%)	1339	33,909

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 1,46,307, while enrolment in schools that had primary and upper primary classes was 1,01,028. For schools with primary, upper primary and secondary/ higher secondary classes,

total enrolment was 98,041, while enrolment in schools with upper primary and secondary/ higher secondary classes was 98,978.

There are 31 engineering colleges and 23 arts and sciences college in the district. There are two medical colleges, three nursing colleges, two pharmacy colleges, one dental college and eight other medical colleges. There are 23 polytechnics and 8 hospitality colleges. The combined capacity of all the ITIs and ITCs in the district is 4,998. The details of the major ITIs in the district are given in the appendix.

Table 18-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	31
Arts and sciences	23
Management	3
Medical	2
Dental	1
Nursing	3
Pharmacy	2
Other medical	8
Teacher training and education	0
Hospitality	8
Fashion technology	0
Polytechnics	23
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

18.5 Incremental Human Resource Availability

The current work force is estimated to be 14.5 lakh, which is estimated to grow to 17.98 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 1.64 lakh and in 2017-22, the incremental availability is estimated to be 1.83 lakh.

Table 18-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	3,520	2,328	1,485	1,450		
2017	3,855	2,538	1,651	1,614	164	
2022	4,231	2,767	1,836	1,798		183

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level.

Table 18-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	101	12	52	164
2017-22	119	12	52	183

Source: Athena Research

18.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the construction, tourism and travel and textiles, mirroring state trends. Organized retail, IT, healthcare, transportation and logistics and BFSI are also expected to register significant growth in human resource requirements. The human resource requirement in the agriculture sector is expected to decline by 58,000 in 2012-17 and 51,000 in 2017-22 with growing industrialization of the district and the modernization of agricultural techniques.

Salem has a number of established heavy industries. Over the next decade, economic growth is expected to be driven by the service sectors. The requirement for skilled human resources will primarily arise in skill intensive sectors such as BFSI, IT and healthcare, as well as the formalization of traditional sectors such as textiles.

Table 18-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-48	-1	-9	**-58**	-42	-1	-8	**-51**
Automobile	0	0	0	**0**	0	0	0	**0**
Chemicals and Pharmaceuticals	2	2	3	**0**	1	2	3	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	2	0	0	**2**	3	0	1	**3**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**0**	0	0	0	**1**
Handlooms & Handicrafts	-1	0	0	**-1**	-1	0	0	**-1**
Leather	0	0	0	**1**	0	0	0	**1**
Textiles	10	2	2	**14**	14	3	3	**20**
BFSI	0	2	5	**7**	0	3	7	**10**
Construction	42	8	4	**54**	92	17	8	**117**
Education	0	0	2	**2**	0	0	3	**3**
Healthcare	0	2	3	**5**	0	2	3	**5**
IT and ITES	0	0	4	**5**	0	0	6	**6**
Media & Entertainment	0	1	3	**4**	0	2	5	**7**
Organized Retail	4	1	3	**8**	7	2	5	**15**
Real Estate	0	0	2	**2**	0	1	3	**4**
Tourism & Travel	3	10	9	**23**	5	18	16	**39**
Transportation & Logistics	2	1	0	**4**	3	1	0	**4**
Unorganized (excluding Agriculture and Construction)	64	32	44	**140**	75	48	57	**180**
TOTAL	**81**	**61**	**77**	**213**	**158**	**99**	**113**	**364**

Source: Athena Research

18.7 Skill Gap

The largest skill gap is at the semi skilled level at 49,000 in 2012-17 and 86,000 in 2017-22. There is estimated to be an excess availability of human resources at the unskilled level. However, with an increasing number of youth opting for skilling, this gap is expected to be neutralized by 2022. At the skilled level, the gap is estimated to be 26,000 in 2012-17 and 61,000 in 2017-22.

Table 18-12: Skill Gap in 000s

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	81	61	77	**213**	158	99	113	**364**
Incremental Human Resource Availability	101	12	52	**164**	119	12	52	**183**
Skill Gap	**-20**	**49**	**26**	**48**	**40**	**86**	**61**	**181**

Note: Figures in negative indicate excess supply
Source: Athena Research

The pattern of skill gap suggests sustained increase in the requirement for semi-skilled and skilled human resources with the growth and formalization of sectors such as BFSI, textiles and tourism and travel.

Qualitative Skill Gaps

Linkage between skilling institutes and industry weak

The local population's response to skill development initiatives has been very enthusiastic. There is an excess demand for such courses and more institutes should be set up. However, the placement success of those enrolled in the institutes has only improved marginally owing to limited interaction between skilling institutes and the industry.

Poor inter-sectoral mobility

The district has not had adequate rainfall for the last two years, which has dampened agricultural productivity. With falling agricultural productivity and incomes, unemployment in the sector has increased. Out of work agricultural labourers are seen to be incapable of finding jobs in alternate sectors owing to lack of skills. This has significantly restricted their mobility and their capability to earn better incomes and be gainfully employed during the lean seasons

Lack of employment opportunities for unskilled labour

Despite the rising role played by construction in the district economy, there are still a large number of unskilled workers, who remain unabsorbed into the system or find it extremely difficult to find employment. Most of these unskilled workers include the agricultural labourers who come out of farms seeking employment in lean seasons. Entrepreneurship drives to equip them with the skills required for self employment must be initiated and small scale skill development institutes in backward areas of the district must be set up to address this problem.

18.8 Youth Aspirations

Table 18-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	BFSI, Transportation & Logistics	Construction
	Low	IT/ITES	Chemicals

Source: Athena Research

High tendency to migrate out of the district

The outward migration from the district has been rising in the recent years. People have started to express a greater preference for employment in sectors with better working conditions and in areas with better living conditions. Salem is not as developed as Tiruppur or Chennai and many of the local residents have begun to migrate to such places, not only in search of employment, but also to settle down in places with higher standards of living. Thus district has been drained of its productive labour force.

Propensity for self employment high

Education levels are high. On an average, most of the people at least study until the 10th grade. People are also well-informed about the alternative educational opportunities available to them and many students are seen to opt for vocational education. There are a number of polytechnic colleges and ITIs and unlike the other districts, these vocational education institutions have high enrolment. Gaining admission in these institutes is perceived to quite difficult. Focus group discussions with the students revealed that the key reason behind the rising preference for vocational trades is because they feel that the acquisition of such skills will allow them to set up their own business units and take advantage of the local entrepreneurship schemes made available to them.

18.9 Recommendations

18.9.1 State Government

Improve ITI infrastructure and performance

Primary research reveals that ITI graduates are often treated at par with 10th pass workers by employers, indicating no returns to investment in skilling. This must be addressed by revamping the ITIs.

Action Plan:

a. Upgrade existing infrastructure to provide hostels and other facilities to make it possible for students from far off blocks to pursue training at ITIs.
b. Upgrade equipment used for training delivery to ensure relevance of learning to industry needs. Introduce modules on basic numeracy in advanced courses to bridge the gap between basic and vocational education.
c. Provide refresher courses and tutorials for weak students.
d. Obtain feedback from industry on suitable modules and training delivery methods to ensure relevance.

Promote greater interaction between formal and vocational education streams

The failure of vocational education courses at various levels to attract a substantial number of students has been attributed to the inability of these courses to provide employable skills, vertical mobility and technical competencies in terms of relevance and quality. Further, due to the changing nature of work and employment, individuals now look for more flexible and multi-skilling learning opportunities for mobility across employment sectors and geographic locations.

In order to ensure this, vertical mobility options must be provided to the vocational graduates through benchmarking of such diplomas with formal education. Primary research indicates that polytechnic diplomas are often seen as a means to gain entry into engineering colleges, indicating that vocational educational qualifications are not used for their intended purpose.

The NVEQF framework is attempting to develop this at the national level. At the district level, efforts must be made to catalyse the transition away from the current system to one where there is greater interaction between vocational and formal streams.

Action Plan

a. Inclusion of basic subjects covered in degree courses in vocational training courses to allow transition from vocational to formal education, should the student desire to make such a change.
b. Providing exposure on vocational education at the 10+2 level through presentations and discussions with school students to position skill training as an alternative to formal education.
c. Benchmarking vocational education diplomas and certificates with specific levels of formal educational attainment, similar to professional courses to make it possible for students to pursue further formal education, if they so desire.
d. Set up a vocational university or community resource centres to provide students with opportunities to pursue vocational degrees and advanced skills.

18.9.2 Industry

Increase desirability of jobs in manufacturing sectors through improved work environment

The poor working conditions prevalent in most industries employing vocational labour is among the key factors contributing to a low preference for vocational education among the district youth. The poor working conditions seem to lower the self-esteem of people employed and lower employee morale. The poor level of health and safety standards in firms is another key concern.

Action Plan:

a. Efforts are to be made by the industry heads to improve the working conditions to suit the ILO conventions on safety, health and welfare to meet the needs, aspirations and requirements of employees
b. Emphasize on the motivational aspect of working conditions also must be emphasized on through specific initiatives such as an employee feedback mechanism, which may provide employees with a forum to present their concerns
c. Introduce training and induction period for workers at all skill levels
d. Various educational and training programmes for building awareness of rights, duties and liabilities amongst the workers in relation to working condition regulations must be made

Institutionalized wage escalation for lower skill levels

People with low skills often have stagnant careers, working at the same level throughout the period of their employment with no provision for promotions or career growth. In order to make blue collar jobs desirable, it is essential to introduce vertical mobility by institutionalizing wage escalation to reflect skill acquisition and experience, particularly for growing labor-intensive sectors such as textiles and construction.

Action Plan:

a. Industry associations can facilitate the adoption of skill levels defined by the relevant SSCs and benchmark wages through industry consensus
b. The industry must create competency standards and performance evaluation parameters, on the basis of which employees at different skill levels will be regularly apprised
c. Employees at different skill levels should be aware of the career trajectory they are likely to follow
d. The acquisition of skill or experience linked with a demonstrable improvement in performance must be rewarded with higher compensation

18.9.3 Training Providers

Short-term courses

For less skill intensive jobs in sectors such as food processing and construction, which have shown steady growth in the district, industry may up-skill existing workers and skill potential candidates through partnerships with local NGOs or training providers.

Action Plan:

a. Identify blocks where the availability of human resources is high.
b. Partner with local NGOs and training providers to engage in community outreach to raise awareness about skill development.
c. Offer short-term training courses to equip students with the basic skills required for the industry.
d. Ensure upward revision of wages on completion of the course to incentivize students to enroll.

Strengthen labour market outcomes

The training institutes in the district continue to display poor placement performance, with apprenticeships remaining the largest component of on campus employment of students by Industry. The weak linkage between training institute and industry, coupled with the lack of adequate emphasis on creating and operating placement cells are the key factors contributing to the low placement performance of the institute.

Action Plan:

a. Create a placement cell that is responsible for organizing job fairs and strengthening the linkage between the industry and the institute through guest lectures and in-plant training and industry visits.
b. Publish information on employment opportunities (appearing in newspapers, websites and important job sites) on the institute notice board

c. Create a feedback mechanism with industry to collect information on the relevance of the course and curriculum to industry needs
d. Encourage students to acquire multiple-certifications of relevance to local/regional demand
e. Impart live skills, including communication and human resources management
f. Prepare the youth for employment by undertaking aptitude tests and orientation programs that provide clarity on the nature of employment that can be expected post completion of course
g. Facilitate interaction with student alumni to provide the students with a better perspective on the nature of employment

18.9.4 NSDC

Capacity Creation

There is a need for focused capacity creation for growing service sectors such as BFSI, organized retail and tourism and travel.

Action Plan:

a. Set up training facilities in industrialized parts of the district to ensure proximity to potential employers.
b. While the youth do not show much resistance to migration, adequate infrastructure and facilities must be provided at the training location to incentivize them to enroll in vocational training.
c. Focus on semi skilled level courses for sectors such as automobile.
d. Offer career counseling to control drop outs from the institute and attrition from industry.

Align youth aspirations to industry demand

The mismatch between youth aspirations and industry demand remain among the most critical factors contributing to the skill gap in the district. The choices that the youth make are seen to deviate from policy and market incentives and depend on social factor such as prestige. Furthermore, the absence of information on the changes taking place in the domestic and international labour markets has led to youth in the district making uninformed educational choices.

Action Plan:

a. Create a sector-wise registry of employment opportunities available through the SSCs
b. Offer counselling and career guidance through training providers
c. Encourage aptitude tests to facilitate better matching of students with courses and jobs
d. Create an online portal, which will serve as a common forum for students and skill development professionals and experts to exchange thoughts and opinions
e. Set up a hot-line to allow to students to obtain greater clarity of the various skills development options available to them

19 Sivaganga

19.1 Overview

Carved out of Ramanathapuram district in 1984, Sivaganga started functioning as an independent district in 1985. This landlocked district is located in southeast Tamil Nadu, and is bordered by the district of Madurai in the west, Pudukkottai district in the north, Ramanathapuram in the east and south, and Virudhunagar in the south. Administratively, the district is divided into 2 revenue divisions comprising 6 taluks, 12 blocks and 521 revenue villages. These units are further administered by 3 municipalities, 12 town panchayats and 431 village panchayats.

Table 19-1: Basic Information (2010-11)

District Information	Sivaganga	Tamil Nadu
Number of inhabited villages	511	15,400
Area (Sq Km)	3,901	127,905
% of state area	3.05	100
Area rank	16	-
Revenue divisions	2	-
Taluks	6	-
Blocks	12	-
Corporation & municipalities	3	-
Town panchayats	12	-
Revenue villages	521	-
Panchayat villages	431	-

Source: District Statistical Handbook (2010-11)

19.2 Demographic Profile

Sivaganga has a population of approximately 13.5 lakh, constituting 2% of Tamil Nadu's population. The district has a low population density, at 343 persons per square kilometer. Only about one-third of the district is urbanized, with 30.99% of the population residing in urban areas. The annual population growth rate is low, at 1.01%, significantly below the state average. The high working age population percentage reflects a higher proportion of youth in the population. However, the worker participation rate is only 50% of the total working age population, which may be attributed to either unemployment or a distinct preference for further education. The share of agricultural laborers is relatively low at approximately 28%.

Table 19-2: Demographic Indicators (2011)

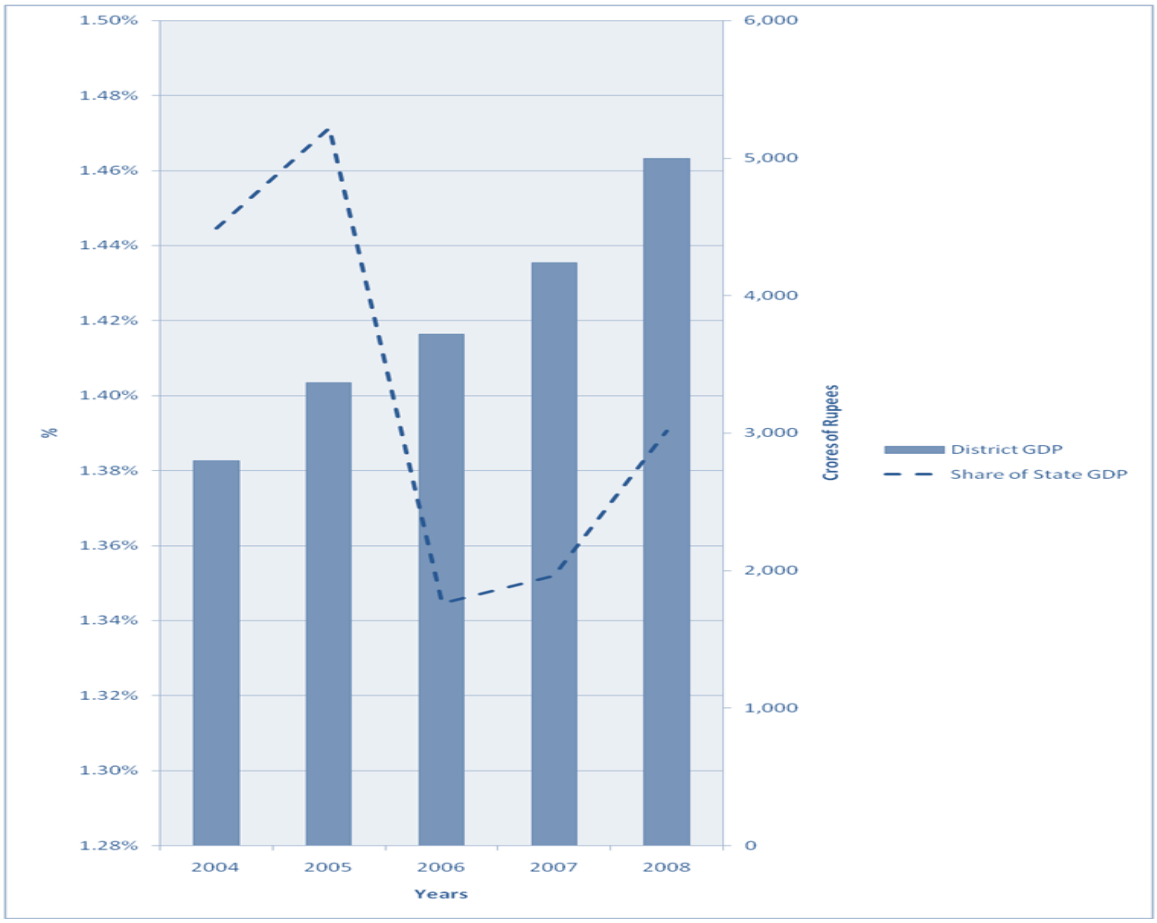
Population	Sivaganga	Tamil Nadu
Population	1,341,250	72,138,958
Share of state population (in %)	2	100
Population density (per sq. km.)	343.79	564
Urban population percentage	30.99	48.45
Total population annual growth rate (in %)	1.01	2
Urban population	415,631	34,949,729
Sex ratio (number of females per 1000 males)	1000	995

Source: Census 2011 (Provisional)

19.3 Economic Profile

The contribution of the district to state GDP has varied between a high of 1.47% and a low of 1.34%. The contribution has moderated in recent years and is steady at about 1.39% in 2008-09. The per capita income of the district is considerably low - at INR 35,784, one of the lowest in the state. The district is also one of the 6 districts in the state that are included in the country's 250 most backward districts. The per capita income differential between urban and rural incomes is also high, signaling development taking place only in certain pockets of the district. Development indicators for the district are low too, with HDI and GDI figures of 0.64 and 0.635 respectively.

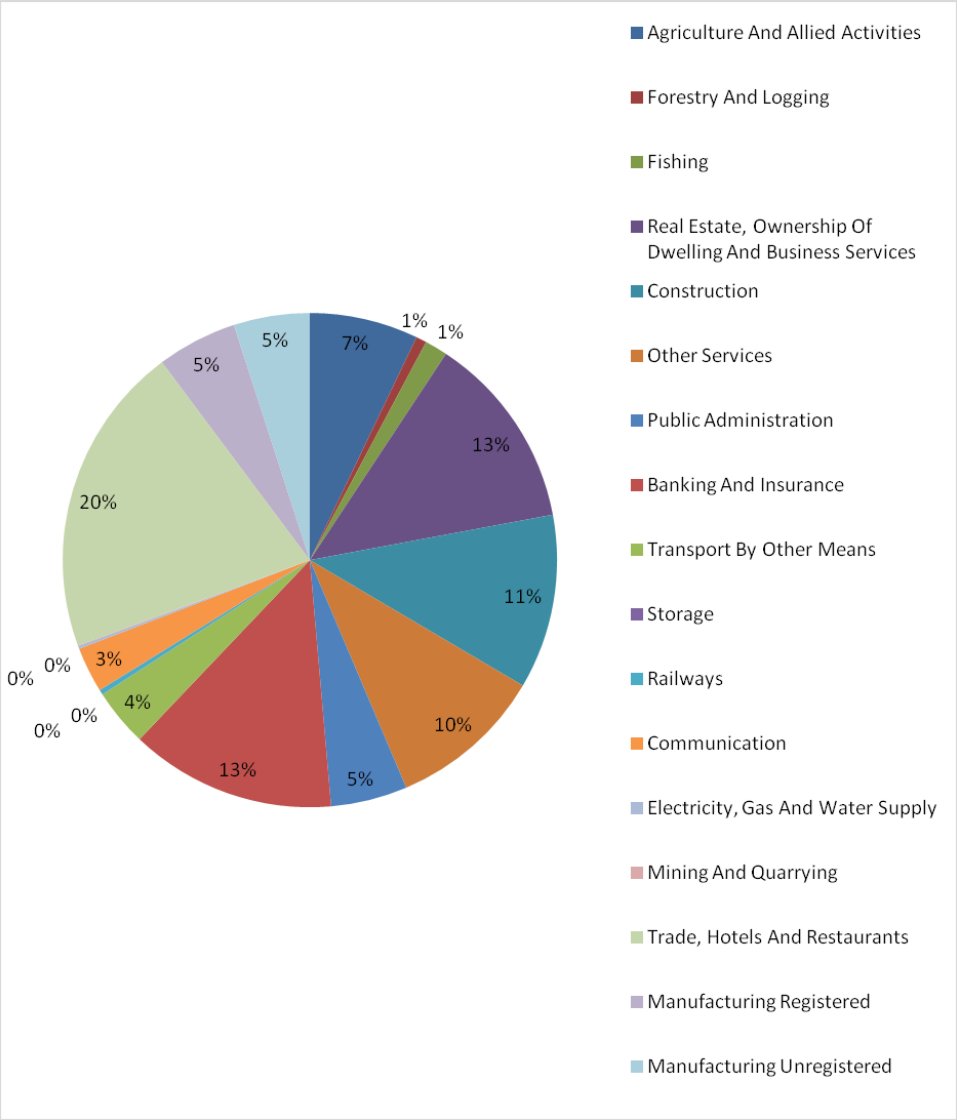
Figure 19.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Trade, hotels and restaurants accounted for 20% of the district GDP, followed by real estate services and banking & insurance at 13% each. Agriculture accounts for just 7% while forestry and fishing activities account for another 1% each. Manufacturing accounts for just 8%, of which the majority is unregistered manufacturing at 5%. Other dominant sectors include construction and other services.

Figure 19.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

19.3.1 Agriculture

Of the total working population, about 63% is engaged in agricultural activities. There are more cultivators than laborers, which indicate that the number of landholdings in the district is high. Only a fraction of the population is engaged in manufacturing activities, while 32% of the working population is either self-employed or engaged in the services sector. There are less marginal workers than main workers, indicating that a majority of the working population is employed for most of the year.

Table 19-3: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	81,566	81.08%
Pulses	848	0.84%
Condiments	4,761	4.73%
Fruits and vegetables	8,204	8.15%
Other	5,222	5.19%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	5,271	39.63%
Cotton	354	2.66%
Oil seeds	5,277	39.67%
Tobacco	0	0.00%
Other	2,399	18.04%
Total Area under Food Crops	**100,601**	**88.32%**
Total Area under Non Food- Crops	**13,301**	**11.68%**

Source: Tamil Nadu Crop Report (2011-12)

About 88% of the total sown area is under food crops. Around 81% of this sown area is under cereals and 8% under fruits and vegetables. Non food crops include sugarcane, cotton, and oil seeds. Nearly 12% of the total sown area is under non-food crops. Almost 40% of this area goes to sugarcane while oil seeds also have a share of 40% of the sown area. Yield is significantly lower than the state for all the crops.

Table 19-4: Major Crops: Yield in KG per Hectare in 2011-12

Crop	Yield for Sivaganga	Yield for Tamil Nadu
Cereals	9,939	12,136
Pulses	2,402	2,763
Sugarcane	98	101
Condiments	6,107	32,440
Vegetables	54,863	164,422
Mango	4,795	4,795
Cotton	293	368
Tobacco	0	1,524
Oil seeds	12,303	16,484

Source: Tamil Nadu Crop Report (2011-12)

19.3.2 Industry

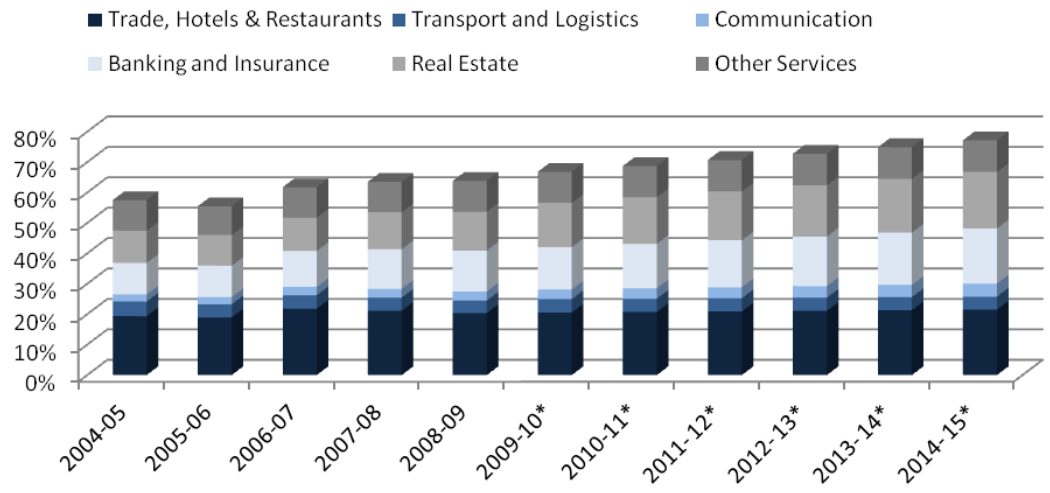
Sivaganga has undergone considerable industrial development over the last two decades with approximately 82,000 people employed in major industries. There are 157 registered factories in the district, of which 28 are large scale and 82 are medium scale industries. In addition, there are 5,352 small scale units and 2,440 cottage industries. The first industrial estate was set up in 1980 at Manmadurai by SIPCOT. This industrial estate is mainly composed of units manufacturing engineering components. There are 46 units in this industrial complex; however, 20 of these units have recently been classified as sick units. Further, there are three additional industrial estates managed by SIDCO in the district. These estates house small and medium scale units producing a variety of goods.

There are also a few large scale industries operating within the district. The large deposits of graphite in the district have led to the establishment of two large mineral-based and chemical-based manufacturing companies. Tamil Nadu Minerals Ltd has been operational in the district since 1978 and produces 200 tons of flaky graphite. TCP Ltd., another large scale chemicals manufacturing company, has a plant in Karaikudi. The company produces 8,000 metric tons of sodium hydrosulphite annually and mostly employs locals as shop floor workers. In addition, sugarcane produce in the district acts as raw material for Sakthi Sugars located in Sivaganga. Their large scale factories produce 5,000 tons of sugar per day and employ more than 1,000 people directly and indirectly. However, compared to the other districts, employment generated by these industries is relatively at the lower end, as evidenced by primary research. Medium and small scale units too, are mostly seasonal in nature and do not promote gainful employment opportunities.

However, the presence of industrial estates should enable the district officials to promote local entrepreneurship and industrial development. Although a number of these units are currently under financial pressure, more concerted efforts aimed at providing ample infrastructure facilities for these units would enable the economy of the district to grow at a faster pace.

19.3.3 Services

Figure 19.3: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The service sector plays a critical role in the economy of Sivaganga district. The contribution of the service sector to district output is expected to rise from 64% in 2008-09 to 73% in 2012-13, with real estate and banking driving growth. The real estate and banking sectors are expected to contribute to 16% and 17% of GDP in 2012-13 as against 13% in 2008-09 respectively.

Nearly 1.61 lakh people are employed in the organized services sector. The rich history of the district coupled with the presence of many Chettinad cuisine restaurants attracts a considerable number of tourists between the months of November and February. However, the seasonal nature of tourism has led to a large unorganized sector presence within the hospitality sub sector in the district.

Infrastructure facilities in the district are moderately developed, with a large presence of government cooperative banks in the district. The district also houses a considerable number of health care institutions – there are a total of 17 hospitals and 322 health care centers in the district. These health care centers have sufficient bed strength. However, the doctor strength is low, with one doctor available for every 5,900 people in the district. On the transport infrastructure front, Sivaganga is relatively well connected with 116 kilometers of highways and over 4,000 kilometers of other district and panchayat roads. There are also 17 railway stations, spread across a route length of 142 kilometers.

19.4 State of Education

The literacy rate of the district is 80%, slightly higher than the state average. Both female and male literacy rates have risen over the last decade. Female literacy has increased by about 11%, from 61.7% in 2001 to 72.33% in 2011. Male literacy has increased at a lower rate, from 83.1% to 88.61%.

Table 19-5: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	61.70	72.33	0.17
Male	83.10	88.61	0.07

Source: Census 2001, Census 2011(Provisional)

Despite the increasing literacy, completion rates remain low. The completion rate for primary schools is far lower than upper primary schools, indicating that children who continue with their education mostly stay on and complete their schooling education. However, almost 100% of the school going children in the district choose to get some form of education in order to be literate – primary schools have an enrolment ratio of 99.12%, while upper primary schools have an enrolment ratio of 98.13%, both higher than the state average.

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 62,599, while enrolment in schools that had primary and upper primary classes was 55,249. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 29,275, while enrolment in schools with upper primary and secondary/ higher secondary classes was 39,577.

Table 19-6: Education Profile (2010-11)

Educational Statistics	Units in Sivaganga	Units in Tamil Nadu
Primary	966	33,909
Upper primary	265	8,552
Secondary	121	4,436
Higher secondary	98	4,632
NER – Primary (%)	99.12	98
NER - Upper primary (%)	98.13	98
Dropout rate- Primary (%)	2.6	3.81
Dropout rate - Upper primary (%)	6.72	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12

There are 11 engineering colleges and 12 arts and science colleges in the district. There is also a nursing, medical, pharmacy and hospitality college. There are three polytechnics. The combined capacity of all the ITIs and ITCs in the district is 2,541. The details of the major ITIs in the district are given in the appendix.

Table 19-7: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	11
Arts and sciences	12
Management	0
Medical	0
Dental	0
Nursing	1
Pharmacy	0
Other medical	1
Teacher training and education	0
Hospitality	1
Fashion technology	0
Polytechnics	3
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

19.5 Incremental Human Resource Availability

The current work force is estimated to be 5.59 lakh, which is estimated to grow to 7.14 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 66,000 and in 2017-22, the incremental availability is estimated to be 74,000.

Table 19-8: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	1,357	898	573	559		
2017	1,492	982	640	625	66	
2022	1,643	1,075	714	699		74

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level.

Table 19-9: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	39	7	20	66
2017-22	46	7	22	74

Source: Athena Research

19.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the unorganized sector, construction, textiles, BFSI and food processing. Organized retail and tourism and transport are also expected to see a moderate increase in human resource requirements. The human resource requirement in the agriculture sector is expected to decline by 30,000 in 2012-17 and 26,000 in 2017-22.

The long term growth sectors for Sivaganga appear to be textiles and food processing, with of initiatives to promote the growth of small industries in these sectors. BFSI and retail will require an enabling environment to grow, and will be closely linked to overall economic growth in the district.

Table 19-10: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-24	-1	-4	**-30**	-21	-1	-4	**-26**
Automobile	0	0	0	**0**	0	0	0	**0**
Chemicals and Pharmaceuticals	0	0	0	**0**	0	0	0	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	2	0	0	**3**	3	0	1	**4**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**0**	0	0	0	**0**
Handlooms & Handicrafts	0	0	0	**0**	0	0	0	**0**
Leather	0	0	0	**0**	0	0	0	**1**
Textiles	1	0	0	**2**	2	0	0	**3**
BFSI	0	1	3	**4**	0	1	4	**5**
Construction	13	3	1	**17**	29	5	3	**37**
Education	0	0	0	**0**	0	0	0	**0**
Healthcare	0	0	0	**0**	0	0	0	**0**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	0	0	1	**1**	0	1	1	**2**
Organized Retail	2	0	1	**3**	3	1	2	**5**
Real Estate	0	0	1	**1**	0	0	1	**1**
Tourism & Travel	0	0	0	**0**	0	0	0	**0**
Transportation & Logistics	1	0	0	**1**	1	0	0	**1**
Unorganized (excluding Agriculture and Construction)	24	12	17	**54**	29	19	22	**69**
TOTAL	**20**	**17**	**20**	**56**	**46**	**28**	**30**	**103**

Source: Athena Research

19.7 Skill Gap

The largest skill gap is at the semi skilled level at 1**1**,000 in 2012-17 and 2**1**,000 in 2017-22. There is estimated to be an excess availability of human resources at the unskilled level. However, with an increasing number of youth opting for skilling, this gap is expected to be neutralized by 2022. At the skilled level, the gap is estimated to be **9**,000 in 2017-22. Industrial growth in the district is limited, suggesting that the trend towards employing higher skills in the production process will be relatively slow compared to more developed districts. The excess availability of human resources will primarily be on account of declining human resource requirements in the agriculture sector. The low presence of industries requiring high level technical skills, such as automobile, engineering and IT/ITES leads to a relatively low requirement at the skilled level.

Table 19-11: Skill Gap in 000s

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	20	17	20	**56**	46	28	30	**103**
Incremental Human Resource Availability	39	7	20	**66**	46	7	22	**74**
Skill Gap	**-20**	**11**	**0**	**-10**	**0**	**21**	**9**	**29**

Note: Figures in negative indicate excess supply
Source: Athena Research

Qualitative Skill Gaps

Lack of employment opportunities

There are not many industries within the district. Most of the industrial units are small and micro units, and are mostly concentrated in coir making and agro processing activities. Since these units are small scale, they do not generate many employment opportunities. Furthermore, owing to their seasonal nature, the employments levels during lean periods are seen to further rise.

High levels of disguised unemployment

Sivaganga continues to remain an agrarian economy. Industrial activity in the district is relatively low, with most of the industrial activity restricted to Thirupatthur. Agricultural produce in Sivaganga is limited to a few crops such as paddy and cereals. Owing to the lack of alternate economic opportunities a large proportion of the people continue to be engaged in agriculture despite the meagre wages and low productivity

Rising outward migration from the district

The lack of suitable employment causes people to migrate, usually to nearby districts in search of better paying jobs. They receive marginally better salaries in the other districts and have some opportunity to increase their employment options. While this trend of outward migration has been increasing over the past few years, there is, little or no inward migration. Thus Sivaganga's potential human capital is lost.

19.8 Youth Aspirations

Table 19-12: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	BFSI, Retail	Construction, Food Processing
	Low	Electronics, IT/ITES	Agriculture, Chemicals

Source: Athena Research

Poor emphasis on basic education

Education levels are very low in the district in spite of the relatively high number of educational institutions available. Many students drop out of school and are not interested in pursuing further studies. Socio-economic reasons often constrain them, especially those hailing from remote, rural areas. The lack of exposure and awareness has further inhibited any innate enterprising abilities that the local populace may have.

Mismatch between job expectation and employment opportunities

A large proportion of the population in the district is employed in traditional agrarian activities, while a few of them are placed in industrial units. The focus group discussion revealed that many of the students feel that most of the available employment opportunities do not match their job expectations. The lack of suitable employment opportunities within the district causes people to migrate, usually to nearby districts in search of suitable or better paying jobs

Low awareness on the benefits of formal skill acquisition

There are a number of educational institutions – both formal and vocational – set up by the State government here. These institutes were set up in order to improve the education levels in the district. However, many of the students enrolled in such courses belong to neighbouring districts – although these institutes have high capacity utilization, the district is unable to gain short or long term benefits from them.

One of the key reasons for low enrolment from within the district is the absence of greater information dissemination to generate awareness regarding the advantages of skill development.

19.9 Recommendations

19.9.1 State Government

Awareness Campaigns

There is a strong preference for formal education, which may be addressed by providing information at the school level and conducting campaigns to promote the dignity of labor.

Action Plan:

a. Conduct media campaigns to promote the dignity of labor along with street plays in rural areas.
b. Provide information regarding vocational education at the school level.

c. Use employment exchanges to disseminate information regarding existing skill training initiatives in the district.
d. Encourage students to use the government's online resources for information on skill development.

Improve ITI infrastructure and performance

Primary research reveals that ITI graduates are often treated at par with 10th pass workers by employers, indicating no returns to investment in skilling. This must be addressed by revamping the ITIs.

Action Plan:

a. Upgrade existing infrastructure to provide hostels and other facilities to make it possible for students from far off blocks to pursue training at ITIs.
b. Upgrade equipment used for training delivery to ensure relevance of learning to industry needs. Introduce modules on basic numeracy in advanced courses to bridge the gap between basic and vocational education.
c. Provide refresher courses and tutorials for weak students.
d. Obtain feedback from industry on suitable modules and training delivery methods to ensure relevance.

19.9.2 Industry

Short-term courses

For less skill intensive jobs in sectors such as food processing and construction, which have shown steady growth in the district, industry may up-skill existing workers and skill potential candidates through partnerships with local NGOs or training providers.

Action Plan:

a. Identify blocks where the availability of human resources is high.
b. Partner with local NGOs and training providers to engage in community outreach to raise awareness about skill development.
c. Offer short-term training courses to equip students with the basic skills required for the industry.
d. Ensure upward revision of wages on completion of the course to incentivize students to enroll.

Improve working conditions

The low preference for blue collar jobs and high attrition must be addressed through targeted measures to improve the work environment.

Action Plan:

a. Ensure adherence to health and safety standards for factory floor jobs, particularly in sectors such as automobile.
b. Institute employee feedback systems and grievance redressal mechanisms
c. Provide part compensation in kind to reduce attrition - this is already practiced to some extent in the construction sector.

d. Offer bonus for staying for one year to incentivize staying at the same job, thereby facilitating assimilation of skills on the job.
e. Introduce training and induction period for workers at all skill levels
f. Various educational and training programmes for building awareness of rights, duties and liabilities amongst the workers in relation to working condition regulations must be made.

19.9.3 Training Providers

Strengthen labour market outcomes

The training institutes in the district continue to display poor placement performance, with apprenticeships remaining the largest component of on campus employment of students by Industry. The weak linkage between training institute and industry, coupled with the lack of adequate emphasis on creating and operating placement cells are the key factors contributing to the low placement performance of the institute.

Action Plan:

a. Create a placement cell responsible for organizing campus recruitments, job fairs and strengthening the linkage between the industry and the institute through guest lectures and in-plant training and industry visits.
b. Publish information on employment opportunities (appearing in newspapers, websites and important job sites) on the institute notice board
c. Create a feedback mechanism with industry to collect information on the relevance of the course and curriculum to industry needs
d. Encourage students to acquire multiple-certifications of relevance to local/regional demand
e. Impart live skills, including communication and human resources management
f. Prepare the youth for employment by undertaking aptitude tests and orientation programs that provide clarity on the nature of employment that can be expected post completion of course
g. Facilitate interaction with student alumni to provide the students with a better perspective on the nature of employment

19.9.4 NSDC

Encourage multi-skilling courses to provide fungible skills

Capacity creation in the district must focus on providing multiple, portable skills that would be applicable across sectors since the level of industrial development and formalization of employment is low in the district. Instead of providing specialization in one specific trade, courses should seek to impart basic understanding of a set of skills required for working in specific roles in growing manufacturing sectors (food processing, textiles) and service sectors (BFSI, retail, construction) at the semi-skilled level.

Initiatives for less organized sectors such as construction and food processing should focus on initiate existing workers rather than fresh skilling in order to successfully mobilize students.

Action Plan:

a. Create multi-skilling modules and make them available for training centres who fulfil a set of pre-determined infrastructure criteria
b. Undertake campaigns among students to make them aware about the benefits of acquiring multi-skills
c. Provide financial support either in the form of voucher to those who are already employed, but inclined on acquiring multiple skills

Formal certification of informally acquired skills

A large number of the people in the district are seen to be engaged in the informal sector, whose skill levels are either native or are acquired informally. In the absence of formally certified skills these labourers tend to earn meagre wages. The formal vocational system is not accessible to these people as they often do not meet the basic education criteria prescribed

Action Plan:

a. Build a database of existing types of skills provided in the informal sector and design targeted training interventions to up-skill and/or certify those engaged in the informal sector
b. Design special training courses (e.g. fast track evening courses), as pilot projects, to enhance the skills of participants in the informal sector by providing them formal training using the existing vocational training infrastructure
c. Popularize the Recognition of Prior Learning (RPL) system in existing vocational centres. RPL allows for individuals to gain accreditation for their native skills and access formal retraining opportunities even if they do not fulfil basic educational criteria
d. Launch community-based training programmes, which provide demand driven and customized training programmes to cater to the needs of those in the district

20 Thanjavur

20.1 Overview

Thanjavur is located on the eastern coast of Tamil Nadu. It is bordered by Tiruvarur in the east, Ariyalur in the north, Tiruchirapalli and Pudukottai in the west and the Bay of Bengal in the south. This mid-sized district is divided into 3 revenue divisions, 8 taluks and 14 blocks. There are 3 corporations, 22 town panchayats, 906 revenue villages and 589 panchayat villages.

Table 20-1: Basic Information (2010-11)

District Information	Thanjavur	Tamil Nadu
Number of inhabited villages	785	15,400
Area (Sq Km)	3,481	127,905
% of state area	2.72	100
Area rank	20	-
Revenue divisions	3	-
Taluks	8	-
Blocks	14	-
Corporation & municipalities	3	-
Town panchayats	22	-
Revenue villages	906	-
Panchayat Villages	589	-

Source: District Statistical Handbook (2010-11)

20.2 Demographic Profile

The district constitutes about 3% of the state population, making it one of the most populous districts in the state. The population is also densely distributed at over 690 people per square kilometer. The population growth rate is much higher than the state average at 3.07% annually, which suggests that the demographics of the district will be in flux for a while into the future. The sex ratio is significantly higher than the state average at 1030 females per 1000 males. The district is moderately urbanized with over 35% of the population falling under the urban category. Agricultural workers form the majority of the workforce at 46% of the total. More than 62% of the population is in the working age group and worker participation rates are slightly below the state average at 37.34%.

Table 20-2: Demographic Indicators (2011)

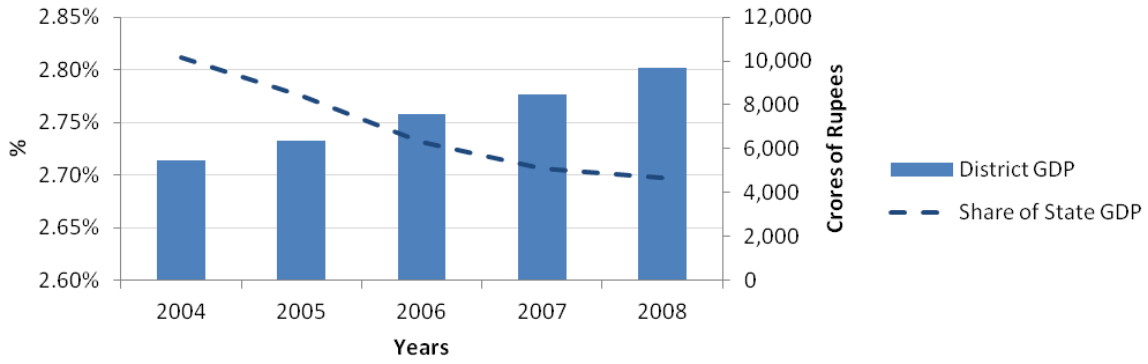
Population	Thanjavur	Tamil Nadu
Population	2,402,781	72,138,958
Share of state population (in %)	3	100
Population density (per sq. km.)	690.22	564
Urban population percentage	35.39	48.45
Total population annual growth rate (in %)	3.07	2
Urban population	850,456	34,949,729
Sex ratio (number of females per 1000 males)	1031	995

Source: Census 2011 (Provisional)

20.3 Economic Profile

The contribution to state GDP has steadily declined in recent years from 2.81% to about 2.7% in 2008-09. The district is moderately developed with a peculiar distribution of per capita incomes. Urban incomes are much below the state average, whereas rural incomes are significantly higher than the corresponding figure for the state. Urban rural disparity is also relatively small, with urban incomes exceeding rural incomes by 36%. Human development indicators are relatively high, though still lower than the state averages at 0.657 and 0.654 for both HDI and GDI respectively.

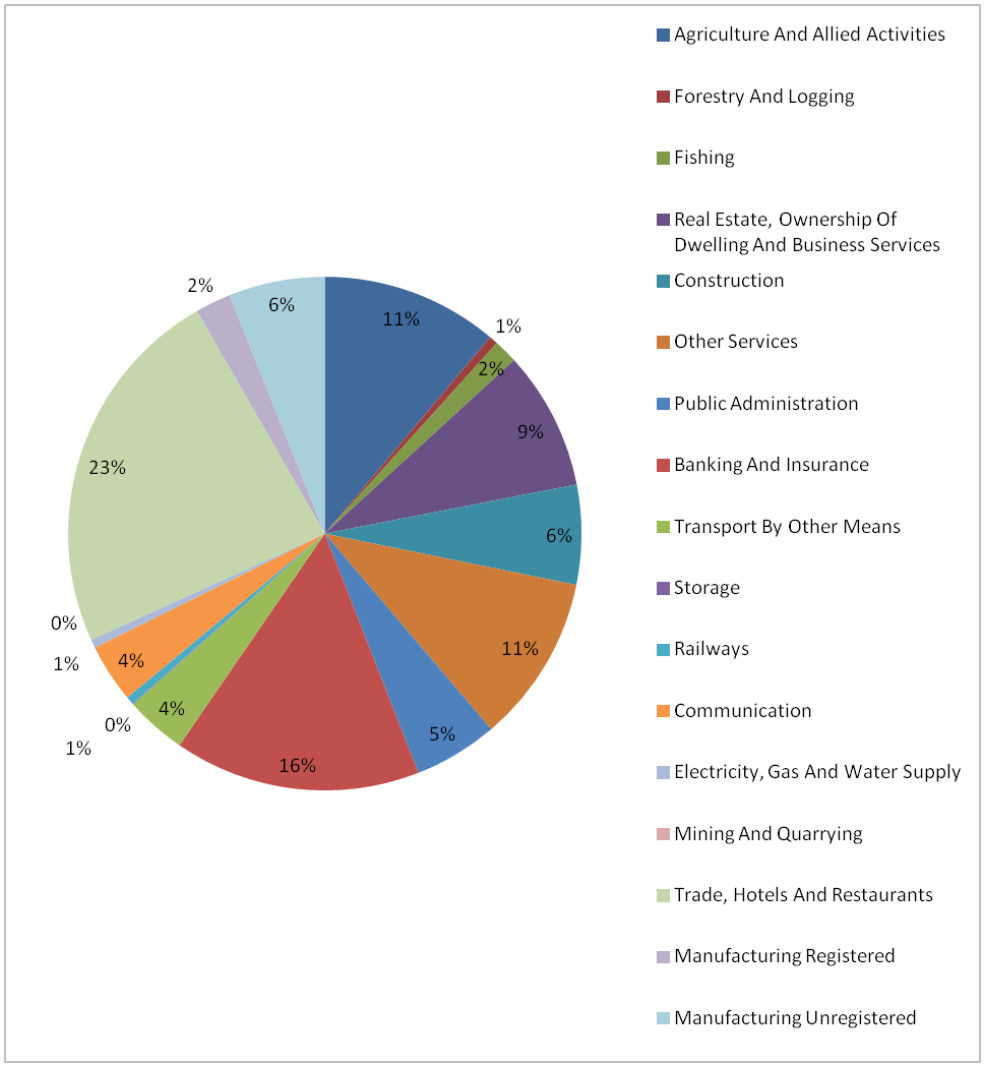
Figure 20.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Trade, hotels and restaurants accounted for 23% of district GDP, followed by banking and insurance services at 15%. Agriculture accounts for 11% while forestry and fishing activities account for another 1% and 2% respectively. Manufacturing accounts for just 8%, of which the majority is unregistered manufacturing at 6%. Other dominant sectors include real estate services and communication.

Figure 20.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 20-3: Per Capita Income (2011-12)

Human Development Indicators	Thanjavur	Tamil Nadu
Per capita urban income	71,300	100,600
Per capita rural income	53,300	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

20.3.1 Agriculture

About 61% of the labor force are engaged in agriculture and allied activities. The household industry accounts for only about 4.2% of the worker population. Almost 34% of the worker population is engaged in other economic activity. Major crops sown include paddy, cotton, gingelly, groundnut, sugarcane and pulses.

Around 81% of the total sown area is under food crops. Nearly 78% of this sown area is under cereals, 11% under pulses and 4% under fruits and vegetables. Non food crops include sugarcane, cotton, and oil seeds. About 19% of the total sown area is under non-food crops. Almost 32% of this area goes to oil seeds while sugarcane has a share of 27% of the remaining sown area. Yield is higher than the state for sugarcane and oil seeds, while it is lower than the state for all other major crop groups.

Table 20-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	163,217	78.03%
Pulses	23,470	11.22%
Condiments	211	0.10%
Fruits and vegetables	8,226	3.93%
Other	14,043	6.71%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	13,819	27.07%
Cotton	538	1.05%
Oil seeds	16,355	32.03%
Tobacco	0	0.00%
Other	20,343	39.85%
Total Area under Food Crops	**209,167**	**80.38%**
Total Area under Non Food-Crops	**51,055**	**19.62%**

Source: Tamil Nadu Crop Report (2011-12)

Table 20-5: Major Crops: Yield in KG per Hectare in 2011-12

Crop	Yield for Thanjavur	Yield for Tamil Nadu
Cereals	15,709	12,136
Pulses	2,172	2,763
Sugarcane	107	101
Condiments	8,142	32,440
Vegetables	61,611	164,422
Mango	4,795	4,795
Cotton	488	368
Tobacco	0	1,524
Oil seeds	19,446	16,484

Source: Tamil Nadu Crop Report (2011-12)

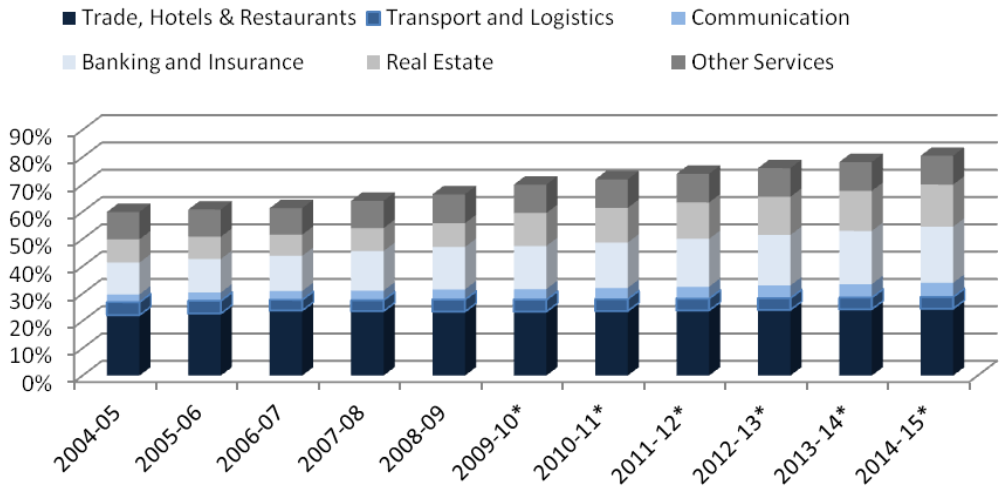
20.3.2 Industry

Availability of agricultural produce such as rice and sugarcane as raw materials has led to the development of a considerable number of medium scale rice and sugar mills in the district, with the industry sector employing over 1.7 lakh people. With the availability of iron ore resources, BHEL has set up its steel making unit in Thanjavur, which provides considerable employment opportunities to the locals. These units are mostly organized in clusters around industrial estates in the district. There are four SIDCO industrial estates in the district that promote small and micro industries primarily engaged in agro-processing and traditional handicraft making.

However, being a primarily agrarian district, Thanjavur's industrial growth has been restricted to agro based and food processing industries. Over the recent years, industrial clusters have been formed for other industrial sub sectors; these initiatives have increased the general efficiency levels that promise to diversify the industrial set up and growth in the district.

20.3.3 Services

Figure 20.3: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

A significant chunk of the district GDP comes from the service sector, which is expected to contribute to 76% of district GDP in 2012-13. Trade, hotels and restaurants are expected to contribute to one –quarter of the district GDP in 2012-13, while the banking and insurance sector is the fastest growing sector and is expected to contribute to 20% of the district GDP in 2013-14.

The organized services sector employs 3.32 lakh people. The rich heritage and the presence of Brihadeeshwara temple - a UNESCO World Heritage Site, attract a considerable number of tourists to the district. Despite a fairly volatile trend at the start of the decade, both domestic and foreign tourism seem to have an increasing trend on an average. However, the relative backwardness of the district, if not checked and improved, might prove as an impediment to the development of any further tourist activity in the future.

The district is moderately developed in terms of infrastructure facilities. There are 35 hospitals, 17 dispensaries and 71 primary health care centres with bed strength of 2,747. However, the doctor to population ratio of one doctor per 8,228 persons leaves more to be desired. There is a moderately inclusive road network running through the district, with over 486 kilometers of state and national highways and more than 6,500 kilometers of district roads. There are at least 10 private banks and 30 cooperative banks in the district; 20 railway stations service 122.07 kilometers of track lines.

20.4 State of Education

The literacy rate is significantly higher than the state average at 83%. Male and female literacy both rose in the period 2001-2011 from 84.5% and 66.7% to 89.06% and 76.61% respectively. It is worth noting that the female literacy rate rose at double the male literacy rate during the same period.

Table 20-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	66.70	76.61	0.15
Male	84.50	89.06	0.05

Source: Census 2001, Census 2011(Provisional)

The schooling network is quite robust; the district has 4% of all schools in the state and has a healthy distribution of the same at about one school every two square kilometers. NERs are quite good relative to the state, at almost 99% for both the primary and upper primary level.

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 1,29,022, while enrolment in schools that had primary and upper primary classes was 73,931. Enrolment in upper primary schools was 1,013 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 65,395, while enrolment in schools with upper primary and secondary/ higher secondary classes was 75,364.

Table 20-7: Education Profile (2010-11)

Educational Statistics	Units in Thanjavur	Units in Tamil Nadu
Primary	1271	33,909
Upper primary	332	8,552
Secondary	195	4,436
Higher secondary	173	4,632
NER – Primary (%)	98.68	98
NER - Upper primary (%)	98.61	98
Dropout rate- Primary (%)	1.98	3.81
Dropout rate - Upper primary (%)	6.21	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

There are 10 engineering colleges and 16 arts and science colleges in the district. There are two colleges for both medicine and pharmacy. There are five management colleges, seven hospitality colleges and nine polytechnics. The combined capacity of all the ITIs and ITCs in the district is 6,195. The details of major ITIs in the district are given in the appendix.

Table 20-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	10
Arts and sciences	16
Management	5
Medical	1
Dental	0
Nursing	0
Pharmacy	2
Other medical	1
Teacher training and education	0
Hospitality	7
Fashion technology	0
Polytechnics	9
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

20.5 Incremental Human Resource Availability

The current work force is estimated to be 9.96 lakh, which is estimated to grow to 11.25 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 62,000 and in 2017-22, the incremental availability is estimated to be 67,000.

Table 20-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	2,418	1,599	1,020	996		
2017	2,549	1,677	1,083	1,058	62	
2022	2,694	1,759	1,151	1,125		67

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level.

Table 20-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	37	6	18	62
2017-22	32	8	28	67

Source: Athena Research

20.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the construction, food processing, BFSI, healthcare and tourism, hospitality and travel. Transportation and logistics, leather and textiles are expected to see a moderate increase in human resource requirements. The human resource requirement in the agriculture sector is expected to decline by 70,000 in 2012-17 and 61,000 in 2017-22.

Table 20-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-58	-1	-11	**-70**	-51	-1	-9	**-61**
Automobile	0	0	0	**0**	0	0	0	**0**
Chemicals and Pharmaceuticals	0	0	0	**0**	0	0	0	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	4	0	1	**5**	5	0	1	**7**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**0**	0	0	0	**0**
Handlooms & Handicrafts	-1	0	0	**-1**	-1	0	0	**-1**
Leather	0	0	0	**1**	1	0	0	**1**
Textiles	1	0	0	**1**	1	0	0	**2**
BFSI	0	2	6	**8**	0	3	8	**11**
Construction	14	3	1	**18**	31	6	3	**39**
Education	0	0	1	**1**	0	0	2	**2**
Healthcare	0	1	2	**3**	0	1	2	**3**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	0	1	2	**3**	0	2	3	**5**
Organized Retail	3	1	2	**7**	6	1	4	**11**
Real Estate	0	0	1	**1**	0	0	1	**1**
Tourism & Travel	6	20	18	**44**	9	35	31	**75**
Transportation & Logistics	1	0	0	**2**	1	0	0	**2**
Unorganized (excluding Agriculture and Construction)	44	22	31	**96**	51	33	40	**124**
TOTAL	**16**	**50**	**55**	**120**	**55**	**82**	**86**	**223**

Source: Athena Research

Thanjavur is a primarily agrarian district. In the long term, as the economy grows and the level of development rises, the service sectors are expected to drive the district economy. Small industries in sectors such as food processing are expected to raise human resource requirements in the manufacturing sector. A number of microfinance initiatives are in place in the district, attempting to encourage entrepreneurship and therefore, growth.

20.7 Skill Gap

The largest skill gap is at the semi skilled level at 43,000 in 2012-17 and 74,000 in 2017-22. There is estimated to be an excess availability of human resources at the unskilled level. In spite of the huge contraction expected in human resource requirements in the agriculture sector, the skill gap remains positive at all levels, indicating rapid growth in requirements and the need to correctly channelize unskilled human resources towards meeting these skill gaps through targeted skilling initiatives. At the skilled level, the gap is estimated to be 12,000 in 2012-17 and 58,000 in 2017-22, as the skill intensity and formalization of various sectors rises over time.

Table 20-12: Skill Gap in 000s

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	16	50	55	**120**	55	82	86	**223**
Incremental Human Resource Availability	12	6	43	**62**	32	8	28	**67**
Skill Gap	**3**	**43**	**12**	**58**	**24**	**74**	**58**	**155**

Source: Athena Research

Qualitative Skill Gap

Rising unemployment in the organized sector

Unemployment in the organized sector has been quite high in recent times in the district. Owing to the high emphasis on education, the district has a high proportion of educated youth. However, on the contrary the local economy does not provide sufficient opportunities to absorb them. This has led to a huge increase in the registry for jobs at the District Employment Office. Prompted by the lack of jobs in the district, highly skilled youth have started migrating to districts such as Tiruchirappalli and Kancheepuram in search of jobs.

High inertia and poor attitude towards work

There is a lot of scope for developing agro-based, food processing industrial units. However, this potential remain under-tapped as the people are not seen to be very enterprising. Further surveys in the district revealed that at the lower skill levels, workers do not have an attitude that is conducive to learning. This has proved to be a major detriment for operations. Industries can train workers with relatively lower levels of skills, but they need to be willing to learn on the job.

Poor linkage between skills delivered and local demand

There are a few ITIs located along the borders of the district. However these ITI are seen to be underutilized on account of two key factors. Firstly very few people opt for the voactional education route owing to the stigma associated with vocational skills. However more importantly, those who do enrol are seen to be struggling to find jobs, owing to the mismatch between the skills delivered at the ITI and local employment opportunities. Thus those who enrol into these ITIs are compelled to migrate to neighbouring districts in search of jobs.

20.8 Youth Aspirations

Table 20-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	BFSI, Tourism & Travel	Food processing
	Low	IT/ITES, Education	Chemicals, Gems & Jewelry

Source: Athena Research

Low confidence levels

The focus group discussions with the students revealed that most of them were apprehensive about their employability and expressed the need for greater emphasis on soft skills and greater use of state-of the art technology in curriculum. They did not think that ITIs equipped them with the required practical knowledge and soft skills required to improve their ability to find jobs and attract better salaries

Lack of guidance regarding skill development

Most of youth interviewed in the district seemed to show almost little or no interest in acquiring vocational skills as they thought of it as a dead end with little or no option for further mobility upwards. Further, they did not seem to be aware of the potential employment opportunities and wages associated with various skills. As a large number of them continued to pursue formal courses, despite the rising unemployment in the organized sector for these skills. The lack of guidance and information regarding opportunities associated with vocational skills is a key factor contributing to the above mentioned tendency.

20.9 Recommendations

20.9.1 State Government

Establishment of a ' Skills Panchayat'

There is mismatch between requirement and availability of skilled human resource in the district, primarily due to the presence of high information asymmetries and the inability of small firms to recruit from vocational institutes. Only large firms recruit from ITIs and other education institutes. For smaller firms, conducting campus recruitments is not a viable option since their human resource requirements are small and sporadic. Additionally, students who have completed diploma courses expect higher compensation even if their skill level does not match the job requirements and small firms are often not in a position to meet such demands.

Meanwhile, a large number of youth graduating out of ITIs and other vocational institutes join the unemployed labour pool, on account of lack of information about the various job opportunities that are available, especially in the MSME sector. Thus the absence of a mechanism to help match the prospective employers with students exacerbates the skill gap. It is recommended that Skills Panchayats be set up in the district under the ambit of the District Skill Development Council to handle the operational details of bridging the skill gap at the micro level.

Action Plan:

a. Set up a 'Skills Panchayat' for specific blocks in the district vested with the responsibility to:

w. Aggregate data on the apprenticeship vacancies and employment opportunities in the specified area and display this information on a dedicated portal that can be accessed by students
x. Undertake counselling for students graduating from ITIs and other vocational training institutes
y. Organize campus placements
z. Prepare students for job interviews
aa. Organize guest lectures and industrial visits
bb. Track the employment status of all students for a period of at least 6 months after completion of the course

b. The Skills Panchayat must consist of personnel from the district administration and local industries and should act as an aggregator of demand and supply in the region

Strengthen implementation of laws to improve working conditions

The strong preference for formal education and white collar jobs is driven, in part, by the poor working conditions prevalent in most industries employing vocational graduates. There is a need to ensure adherence to labor laws and health and safety guidelines in factories.

Action Plan:

a. Incentivize firms complying with safety and health norm prescribed by the government
b. Fund training, retraining and refresher training to workers, trade unions, employers and inspecting staff on various issues, aspects, problems and new developments with respect to working conditions.
c. Invest in concerted media and other publicity mechanisms in a planned, systematic and continuous manner to ensure that due awareness on working conditions is being built to create awareness among workers as well as employers on their respective rights and obligations under the Factories Act, 1948 other relevant acts

20.9.2 Industry

Provide Information on Human Resource Requirements

The lack of adequate information on industry requirements is one of the pertinent factors contributing to the low interest in skill development and uninformed educational choices. The youth in the district do not seem to have clarity on the skill requirements of industry located within the district.

Action Plan:

a. Co-ordinate with employment exchanges/ local district councils and publish the data on the employment requirements in the industry, along with a clear description of the job requirements and the necessary qualifications
b. Promote the creation of a central database which matches information on skill levels to compensation and presents a list of potential employers in the state for a certain skill type – this may be taken by industry associations in the state
c. Participate in campus recruitments at vocational training institutes in the vicinity to establish a strong connection between employment and skill acquisition
d. Undertake frequent interaction with students at vocational education institutes through projects, lectures or visits

Rationalizing the wage norms for skills

The wages for basic vocational skills in the state, on an average continue to remain lower than the average cost of acquiring training (time and money cost), making skill acquisition an unattractive proposition for the youth. The presence of a large number of intermediaries between the employer and the employee further drives down the actual wage level, owing to the higher costs of transactions. There thus an urgent need to rationalize the wage levels for different skills levels in the district.

Action Plan:

a. Revise the minimum wage rate for graduates acquiring vocational training by taking into account the consumer price index number for industrial workers. Ensure that the starting wage is equal to or above the cost of acquiring training
b. Create a pay and career path for graduates coming out of vocational institutes
c. Incentivize the youth to acquire advanced or specialized skills by providing higher wage rates
d. Engage in off-campus recruitments by directly contacting training providers

20.9.3 Training Providers

Participation in skill development

To ensure relevance of training imparted to the industry, greater involvement and interaction with skill training providers is essential.

Action Plan:

a. Play a proactive role in skill development through participation in skill development schemes initiated by the government such as the PPP scheme.
b. Create captive training institutes that serve as model institutes for other training providers in the district.
c. Provide inputs to training providers on curriculum, pedagogy and equipment.
d. Regularly engage with the trainers to acquaint them of new developments and apprise them of suitable training methods.

Institutionalized wage escalation for lower skill levels

People with low skills often have stagnant careers, working at the same level throughout the period of their employment with no provision for promotions or career growth. In order to make blue collar jobs desirable, it is essential to introduce vertical mobility by institutionalizing wage escalation to reflect skill acquisition and experience, particularly for growing labor-intensive sectors such as textiles and construction.

Action Plan:

a. Industry associations can facilitate the adoption of skill levels defined by the relevant SSCs and benchmark wages through industry consensus
b. The industry must create competency standards and performance evaluation parameters, on the basis of which employees at different skill levels will be regularly apprised
c. Employees at different skill levels should be aware of the career trajectory they are likely to follow
d. The acquisition of skill or experience linked with a demonstrable improvement in performance must be rewarded with higher compensation

20.9.4 NSDC

Capacity Creation

There is a need for focused capacity creation for sectors such as BFSI, organized retail, tourism and travel and construction.

Action Plan:

a. Set up training facilities in industrialized parts of the district to ensure proximity to potential employers.
b. Adequate infrastructure and facilities must be provided at the training location to incentivize them to enroll in vocational training.
c. Focus on semi skilled level courses for sectors such as construction.
d. Offer career counseling to control drop outs from the institute and attrition from industry.
e. Create media awareness campaigns to improve the perception of vocational education in the district.

Facilitate optimal pricing of training programmes

Primary surveys reveal that several youth in district do not enroll into vocational programs as they perceive the cost of training to be much higher than what they can earn on completion of the programme. Thus, pricing the training delivered appropriately is a critical component to the success of such initiatives.

Action Plan:

a. Map the various courses delivered in the district and the likely wages associated with each
b. Undertake a 'willingness to pay' survey among the students for different types of trades. Use the information to compare how students perceive the utility of different trades as against how the market behaves.
c. Capture the actual fee charged for every trade and correct for any distortion based on market reality
d. Disseminate information among students on the ideal charges for different types of trade and the likely wage rates

21 The Nilgiris

21.1 Overview

The Nilgiris are located along the western boundary of Tamil Nadu. It is surrounded by Coimbatore in the south, Erode in the east, the state of Kerala in the west and the state of Karnataka in the north. It is amongst the smallest districts in the state and is a nationally famous tourist destination. The district is divided into 2 revenue divisions, 6 taluks and 4 blocks. There are 4 corporations, 11 town panchayats, 54 revenue villages and 35 panchayat villages.

Table 21-1: Basic Information (2010-11)

District Information	The Nilgiris	Tamil Nadu
Number of inhabited villages	41	15,400
Area (Sq Km)	2,578	127,905
% of state area	2.02	100
Area rank	27	-
Revenue divisions	2	-
Taluks	6	-
Blocks	4	-
Corporation & municipalities	4	-
Town panchayats	11	-
Revenue villages	54	-
Panchayat villages	35	-

Source: District Statistical Handbook (2010-11)

21.2 Demographic Profile

The district constitutes 1% of the state population, making it one of the least populous districts in the state. The population is also very sparsely distributed at 285 people per square kilometer, much less than the state average. The population growth rate is lower than the state average at 1.66% annually, but higher than comparable regions, which suggests a stabilization of demographics in the future. The sex ratio is lower than the state average at 990 females per 1000 males. The district is highly urbanized with over 59% of the population falling under the urban category. Agricultural workers constitute a small fraction of the workforce at 13.9%. Almost 64% of the population is in the working age group and worker participation rates are higher than the state average at 46.71%.

Table 21-2: Demographic Indicators (2011)

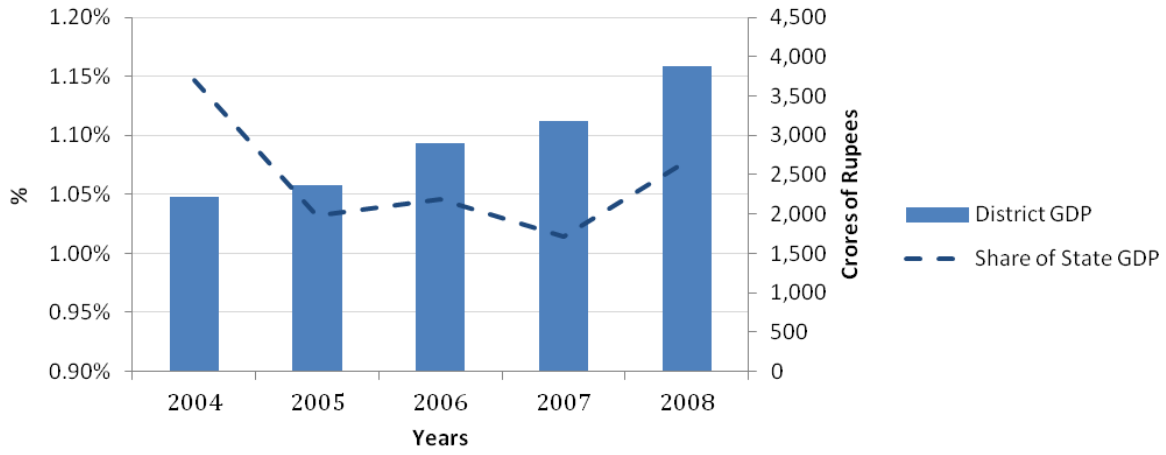
Population	The Nilgiris	Tamil Nadu
Population	735,071	72,138,958
Share of state population (in %)	1	100
Population density (per sq. km.)	285.12	564
Urban population percentage	59.32	48.45
Total population annual growth rate (in %)	1.66	2
Urban population	436,010	34,949,729
Sex ratio (number of females per 1000 males)	1041	995

Source: Census 2011 (Provisional), Census 2001

21.3 Economic Profile

The contribution of the district to state GDP has varied between a high of 1.15% and a low of 1.02%. The contribution has moderated in recent years and is steady at about 1.07% in 2008-09. The district is highly developed with high per capita incomes. Urban and rural incomes are significantly higher than the state average. Urban rural disparity is lower than other districts with urban incomes 52% higher than rural incomes. Human development indicators are higher than the state average at 0.685 and 0.686 for HDI and GDI respectively.

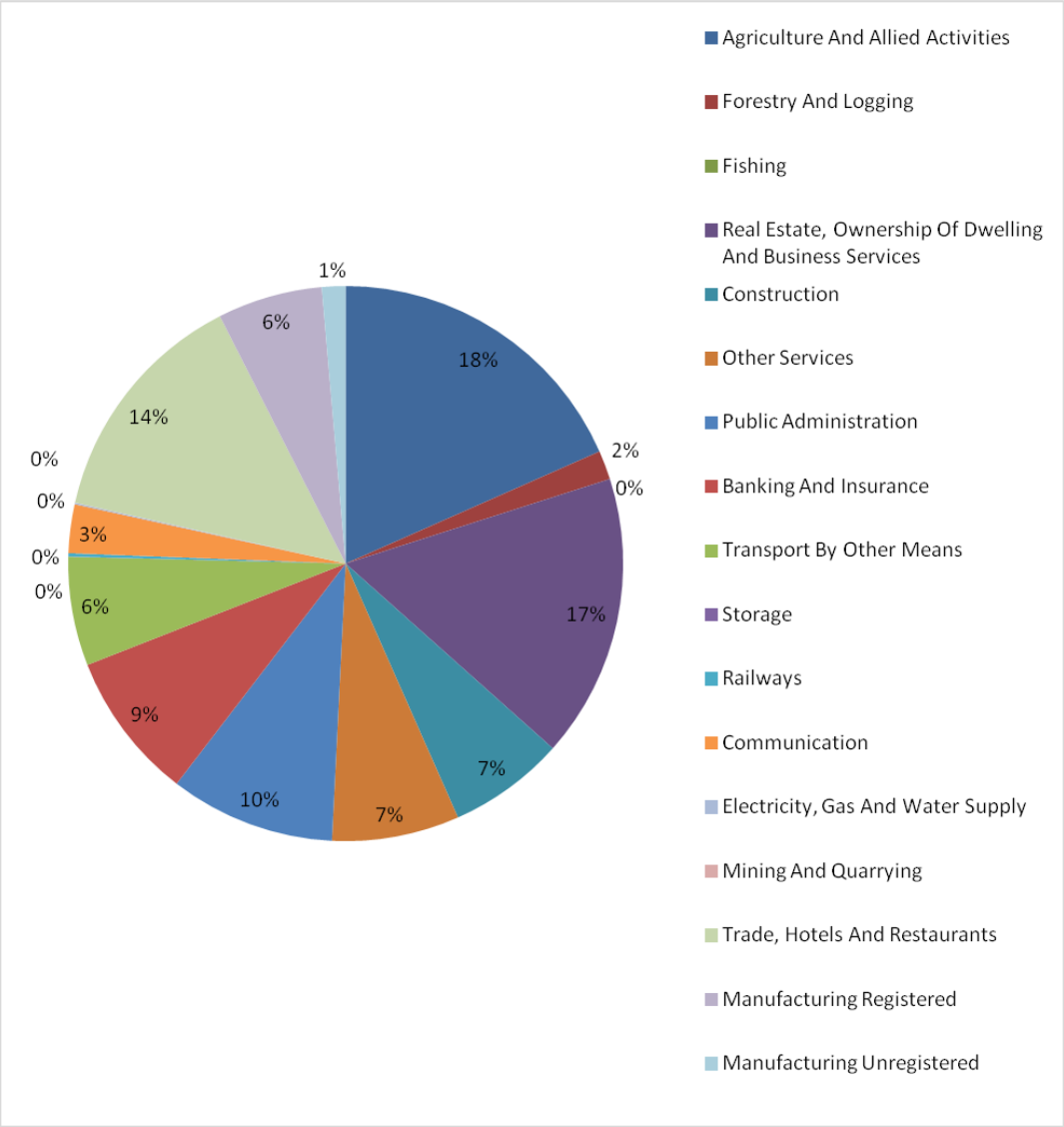
Figure 21.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Real estate activities form a major part of this district at 17% while trade, hotels and restaurants accounted for 14% of the district GDP, followed by public administration at 10%, and banking and insurance at 9%. Agriculture accounts for 18% while manufacturing accounts for just 7%, of which just 1% is unregistered manufacturing. Other dominant sectors include banking and financial services, communication and railways.

Figure 21.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 21-3: Per Capita Income (2011-12)

Human Development Indicators	The Nilgiris	Tamil Nadu
Per capita urban income	81,100	100,600
Per capita rural income	53,300	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

21.3.1 Agriculture

Only about 12% of the population is engaged in agricultural activity in the district. Coupled with the fact that 30% of the land area is under agriculture, this indicates the presence of large scale organized farming in the district. About 47% of the labor force is engaged in other, unregistered activities, most likely small scale industries or services. Major crops sown include paddy, potato, pepper, garlic and ginger.

Table 21-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	1,022	7.82%
Pulses	6	0.05%
Condiments	685	5.24%
Fruits and vegetables	8,195	62.72%
Other	3,157	24.16%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	13	0.02%
Cotton	5	0.01%
Oil seeds	3	0.00%
Tobacco	0	0.00%
Other	65,399	99.97%
Total Area under Food Crops	**13,065**	**16.65%**
Total Area under Non Food- Crops	**65,420**	**83.35%**

Source: Tamil Nadu Crop Report (2011-12)

About 78% of the total sown area is under food crops. Nearly 74% of this sown area is under cereals, 7% under pulses and 11% under fruits and vegetables. Non food crops include sugarcane, cotton, oil seeds and tobacco. Around 22% of the total sown area is under non-food crops. Almost 16% of this area goes to sugarcane, 25% is under cotton while oil seeds have a share of 18% of the remaining sown area. Yield is higher than the state for pulses, while it is lower than the state for all other major crop groups.

Table 21-5: Major Crops: Yield in KG per Hectare in 2011-12

Crop	Yield for The Nilgiris	Yield for Tamil Nadu
Cereals	5,253	12,136
Pulses	436	2,763
Sugarcane	0	101
Condiments	28,430	32,440
Vegetables	135,499	164,422
Mango	4,795	4,795
Cotton	340	368
Tobacco	0	1,524
Oil seeds	3,172	16,484

Source: Tamil Nadu Crop Report (2011-12)

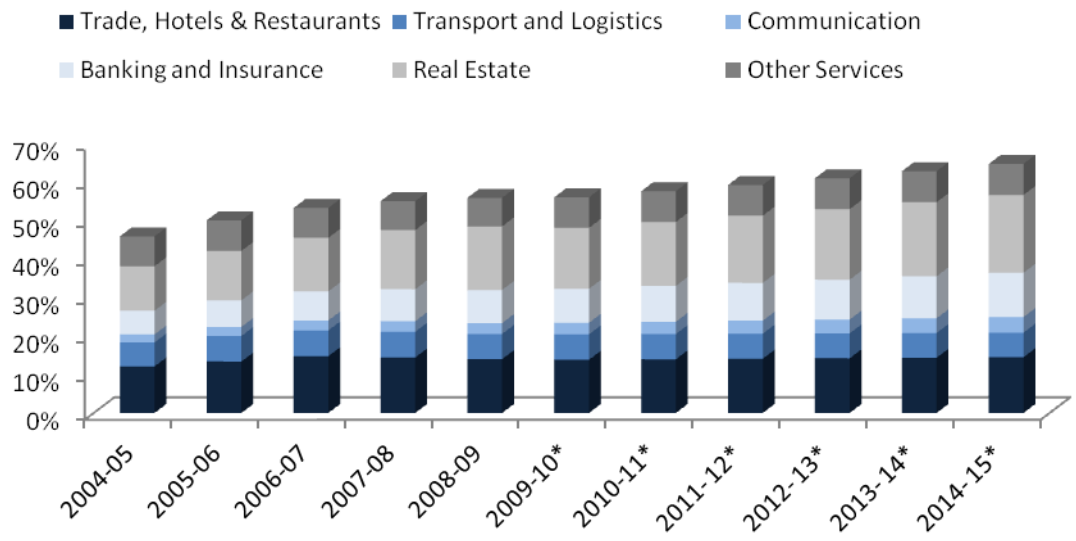
21.3.2 Industry

The district is not a major industrial centre, with only 85,000 people employed in major organized industries. Most of the large industries here are chemical based or are agro based. There is a SIDO estate at Ooty along with a TANSIDCO estate. There is a government cordite factory at Aruvankadu, which manufactures propellants for ammunition. Rallis India at Ooty manufactures gelatine and phosphorous based compounds, with 328 employees. A former British gramophone needle manufacturer, Needle Industries India Ltd, now manufactures needles for the textile industry and employs about 547 people. Hindustan Unilever has a plant processing mushrooms for export which employs 355 people. The presence of large tea estates has made the district a natural location for a plant by Nestle India Ltd, with 83 employees, for the manufacture of tea.

The composition of the SME space shows that the majority of units are concentrated in agro processing and textiles. The largest employers are textiles and engineering units, employing about 3,000 people. This can be attributed to the district's proximity to Coimbatore. The geographical terrain, coupled with people's apprehension about pollution has not led to any industrial development as such, especially on the manufacturing front, as evidenced by primary research. Industrial activity is limited to small and micro scale units such as chocolate making that do not pose a pollution threat. Further, acquiring land too would be a problem, for the district's inhabitants are very particular about forest conservation. In response to these cultural and sociological factors, the private manufacturing players choose to stay away and source their raw material from the Nilgiris instead.

21.3.3 Services

Figure 21.3: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

On account of the rising tourism in the district, select service sectors such as trade, hotels and restaurants and real estate have seen a significant rise and expected to contribute to 14% and 20% of the district GDP in 2014-15 respectively. Driven by these sectors, the contribution of the service sector overall is expected to rise from 56% in 2008-09 to 65% in 2014-15.

Nearly 1.22 lakh people are engaged in the services sector. The Nilgiris is a major tourist centre in the nation. Historically, it has been one of the most famous hill stations the nation had to offer, a role it still plays today. In the six years from 2000-06, the number of domestic tourist arrivals increased from over 13 lakh to over 33 lakh. The growth in domestic tourists was especially steep in 2005-06. In the same period, foreign tourist inflows went from a little over 50,000 to over 1.17 lakh. Though the growth in foreign tourism contracted in the year 2005-06, there was a steep growth in domestic tourism. The contraction in foreign tourism may be attributed to a seasonal change in the patterns of tourist arrivals as more foreign tourists chose other parts of India to visit, as the overall flow of foreign arrivals increased for the nation as a whole.

The district's infrastructure is small, but well suited to the district's needs. There are 26 hospitals, 6 dispensaries, 28 primary health care centres and 194 health sub centres with a bed strength of 809. About 1900 kilometers of surfaced roads run through the district, including national and state highways, connecting it to the nearby states of Kerala and Karnataka. There are also 326 kilometers of un-surfaced roads. There are 8 railway stations serving about 46 kilometers of track, suggesting that the primary function of the rail network here is to connect the sparsely distributed human settlements and that trade and commerce for the most part must be road based.

21.4 State of Education

The literacy rate is significantly higher than the state average at 86%. Male and female literacy rates rose in the period 2001-2011 from 88.5% and 71.6% to 92.15% and 79.44% respectively. Both male and female literacy are at relatively high levels and there is not much gap in both figures as in most other districts. The schooling network is quite sparse; the district has 1% of all schools in the state at a rate of about 1 school per 4 square kilometer. NERs are quite good relative to the state, at almost 99% for both primary and upper primary levels. The dropout rates at the upper primary level are much lower than the state average at 4.1%.

Table 21-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	71.60	79.44	0.11
Male	88.50	92.15	0.04

Source: Census 2001, Census 2011(Provisional)

The schooling network is quite robust; the district has 4% of all schools in the state and has a healthy distribution of the same at about a one school every two square kilometers.

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 22,219, while enrolment in schools that had primary and upper primary classes was 19,626. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 27,972, while enrolment in schools with upper primary and secondary/ higher secondary classes was 19,149.

Table 21-7: Education Profile (2010-11)

Educational Statistics	Units in The Nilgiris	Units in Tamil Nadu
Primary	419	33,909
Upper primary	116	8,552
Secondary	128	4,436
Higher secondary	91	4,632
NER – Primary (%)	98.73	98
NER - Upper primary (%)	98.67	98
Dropout rate- Primary (%)	3.81	3.81
Dropout rate - Upper primary (%)	4.14	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

There is just one engineering college in the district and two arts and science colleges. There is one college to study hospitality and there are two polytechnics in the district. The combined capacity of all the ITIs and ITCs in the district is 1,134.

Table 21-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	1
Arts and sciences	2
Management	0
Medical	0
Dental	0
Nursing	0
Pharmacy	0
Other medical	0
Teacher training and education	0
Hospitality	1
Fashion technology	0
Polytechnics	2
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

21.5 Incremental Human Resource Availability

The current work force is estimated to be 3.02 lakh, which is estimated to decline to 2.77 lakh by 2022. The falling crude birth rate and rising outward migration of human resources from the district have caused negative population growth in the district over the past decade. This trend is also mirrored in the district GDP, which fell for two out of the past five years.

Table 21-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	733	485	309	302		
2017	715	469	298	291	-11	
2022	696	452	284	277		-13

Source: Athena Research

The highest decline in incremental human resource availability is expected at the unskilled level, since many of those at this level tend to migrate out of the district in search of jobs or educational opportunities. The incremental availability of skilled resources is expected to be 2,000 in 2012-17 and 4,000 in 2017-22. Semi-skilled human resource availability will grow to a lesser extent.

Table 21-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	-15	2	2	-11
2017-22	-18	1	4	-13

Source: Athena Research

21.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in tourism and travel and the unorganized sector. Construction, food processing, BFSI and textiles will show moderate growth in human resource requirements.

Table 21-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	0	0	0	**0**	0	0	0	**0**
Automobile	0	0	0	**0**	0	0	0	**0**
Chemicals and Pharmaceuticals	0	0	0	**0**	0	0	0	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	2	0	0	**3**	3	0	1	**4**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**0**	0	0	0	**0**
Handlooms & Handicrafts	0	0	0	**0**	0	0	0	**0**
Leather	0	0	0	**0**	0	0	0	**0**
Textiles	1	0	0	**2**	2	0	0	**2**
BFSI	0	0	1	**2**	0	1	2	**2**
Construction	6	1	1	**7**	13	2	1	**16**
Education	0	0	0	**1**	0	0	1	**1**
Healthcare	0	0	1	**1**	0	0	1	**1**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	0	0	1	**1**	0	1	1	**2**
Organized Retail	1	0	1	**1**	1	0	1	**3**
Real Estate	0	0	1	**1**	0	0	1	**1**
Tourism & Travel	8	30	26	**64**	13	51	45	**109**
Transportation & Logistics	1	0	0	**1**	1	0	0	**1**
Unorganized (excluding Agriculture and Construction)	13	7	9	**30**	16	10	12	**38**
TOTAL	**33**	**40**	**42**	**114**	**49**	**67**	**66**	**181**

Source: Athena Research

The long term growth sectors for Nilgiris appear to be tourism and food processing. The tourism industry is already well established in the district and is expected to grow rapidly. The food processing industry will require an enabling environment to grow, and is expected to expand rapidly over a span of several years.

21.7 Skill Gap

The negative growth in human resource availability exacerbates the skill gap in the district, leading to positive skill gaps at all levels. The high outward migration of youth from the district before completion of higher education or employment leads to a skill gap at the unskilled level – this is driven by less skill-intensive sectors such as food processing and construction. At the skilled level, the rapid growth of industries such as BFSI and tourism and travel is expected to create a significant requirement for skilled human resources, which the district may be unable to meet in the absence of a reversal of migration trends and increased skilling initiatives at all skill levels.

Table 21-12: Skill Gap in 000s

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	33	40	42	**114**	49	67	66	**181**
Incremental Human Resource Availability	-15	2	2	**-11**	-18	1	4	**-13**
Skill Gap	**48**	**38**	**40**	**125**	**67**	**66**	**62**	**195**

Source: Athena Research

Qualitative Skill Gaps

Low emphasis on multi-skilling

The Nilgiris district has two unique features. Firstly, the district's population mostly consists of Scheduled Tribes, whose livelihoods are closely tied to the district and have a very low propensity to migrate outside for work. Secondly, the local population are seen to be rather enterprising and have a high tendency to set up their own business units and display an increasing preference for entrepreneurship, albeit on a small scale. These two features creates a pressing need to set up skill institutes that can deliver courses that equip people with multiple-complementary skills that cater to the needs of setting and running small business units. While there are a few ITIs operating in the district they do not have a strong focus on delivering courses that can equip them in multiple-complimentary skills required for self-employment.

High attrition preventing assimilation of skills

The workforce available to be engaged in industries is very limited in the district as most people prefer to be self-employed or work in the tea plantations. Small disturbances at work could cause people currently working in industries to return to their village. This has prevented the local populace from acquiring and assimilating skills and industry is also seen to averse to employing people from the region owing to high attrition rates

21.8 Youth Aspirations

Table 21-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	Tourism and Travel, BFSI	Food Processing
	Low	Education, Electronics	Handloom & Handicraft, Gems & Jewelry

Source: Athena Research

High tendency to drop out

The district suffers from a fairly high dropout rate at the school level as the youth are keen to start earning early on. Girls often do not even study up to Class 10 on account of cultural reasons. Thus the youth seem to have a higher propensity to enrol into short term programmes that will equip them to hit the job market faster rather than go through the formal education route

Limited career guidance

Despite the enthusiasm to acquire skills that will enhance their economic opportunities, the youth are seen to be lacking guidance on how to go about doing the same. Very few of them are proactive and tend to go in for mobile repair or enrol in ITIs for courses such as electrician. But many of them require career counselling . A structure mechanism to help students explore and identify their abilities and counsel them on the nature of economic opportunities attached with different vocational skills will go a long way in increasing the student's ability to make informed choices.

21.9 Recommendations

21.9.1 State Government

Improve ITI infrastructure and performance

Primary research reveals that ITI graduates are often treated at par with 10th pass workers by employers, indicating no returns to investment in skilling. This must be addressed by revamping the ITIs.

Action Plan:

a. Upgrade existing infrastructure to provide hostels and other facilities to make it possible for students from far off blocks to pursue training at ITIs.
b. Upgrade equipment used for training delivery to ensure relevance of learning to industry needs. Introduce modules on basic numeracy in advanced courses to bridge the gap between basic and vocational education.
c. Provide refresher courses and tutorials for weak students.
d. Obtain feedback from industry on suitable modules and training delivery methods to ensure relevance.

Encourage private sector participation in training

The level of private sector participation in skill development is relatively low, with most vocational training initiatives being undertaken by NGOs and other groups with strong community outreach. There is also a need to target marginalized groups such as women and specific tribes.

Action Plan:

a. Make details of all schemes (e.g. PPP scheme for ITIs) soliciting private sector participation available online
b. Conduct workshops to disseminate information regarding such schemes to NGOs, training providers, industry and other relevant stakeholders
c. Encourage private training providers by providing standardized curriculum, accreditation based on adherence to infrastructure norms, etc.

21.9.2 Industry

Institutionalized wage escalation for lower skill levels

People with low skills often have stagnant careers, working at the same level throughout the period of their employment with no provision for promotions or career growth. In order to make blue collar jobs desirable, it is essential to introduce vertical mobility by institutionalizing wage escalation to reflect skill acquisition and experience, particularly for growing labor-intensive sectors such as textiles and construction.

Action Plan:

a. Industry associations can facilitate the adoption of skill levels defined by the relevant SSCs and benchmark wages through industry consensus
b. The industry must create competency standards and performance evaluation parameters, on the basis of which employees at different skill levels will be regularly apprised
c. Employees at different skill levels should be aware of the career trajectory they are likely to follow
d. The acquisition of skill or experience linked with a demonstrable improvement in performance must be rewarded with higher compensation

Cluster Approach

The low wage rate is one of the causes for outward migration from the district. Youth graduating from vocational institutes prefer to continue to be employed in agriculture in their home district or enter the informal sector or remain employed/ underemployed.

High growth sectors like tourism and travel and food processing are well suited to the cluster mode of development. It is recommended that industry help develop these clusters by partnering with training providers or individually providing on site captive training schools, with easy access to the cluster.

Action Plan:

a. Create training facilities in close proximity to the areas of industrial growth
b. Create accommodation facilities to incentivize students from far-off blocks to enrol in such courses
c. Create a system of reimbursements for existing employees who choose to get up-skilled, where the expenditure incurred on tuition and accommodation by the migrant employee is reimbursed on actuals

21.9.3 Training Providers

Short-term courses

For less skill intensive jobs in sectors such as food processing and construction, which have shown steady growth in the district, industry may up-skill existing workers and skill potential candidates through partnerships with local NGOs or training providers.

Action Plan:

a. Identify blocks where the availability of human resources is high.
b. Partner with local NGOs and training providers to engage in community outreach to raise awareness about skill development.
c. Offer short-term training courses to equip students with the basic skills required for the industry.
d. Ensure upward revision of wages on completion of the course to incentivize students to enroll.

Community engagement for student mobilization

The presence of a number of diverse tribal communities makes mobilization and outreach difficult without the assistance of local partners such as NGOs, who have strong networks with these groups. Student mobilization may be strengthened through greater community engagement, particularly in rural areas for sectors such as food processing and textiles.

Action Plan:

a. Collaborate with local NGOs to mobilize students for training programs.
b. Provide incentives such as flexible course timings to encourage students to enroll in vocational training.
c. Establish strong industry linkages to create a link between employment and training to raise interest in vocational training.

21.9.4 NSDC

Community learning initiatives for backward areas

There is a need for skill development among the tribal communities and women in the district, who are often unable to access the formal education and training system and often are subject to greater economic and social constraints. Skill development is crucial to the empowerment of these communities. Since access and outreach to these diverse groups is difficult, a set of community led initiatives must be designed to help skill the populace in backward areas in the district in sectors.

Action Plan:

a. Design short training modules customized for sectors such as food processing, textiles and construction
b. Collaborate with local Self Help Groups or Community based organizations to deliver the training modules
c. Facilitate the creation of Community Learning Centres in every district, to co-ordinate the activities of the Self Help Groups and provide the required support in terms access to funding and placement for the trained women

Encourage multi-skilling courses

High migration, low level of formalization of district industries and high employment in the unorganized sector have created the need for multiple skills. Workers are required to perform multiple and changing roles, indicating the need for courses that provide portable skills that would be applicable in different settings, particularly for the service sectors.

Action Plan:

a. Create multi-skilling modules and make them available for training centres who fulfil a set of pre-determined infrastructure criteria
b. Undertake campaigns among students to make them aware about the benefits of acquiring multi-skills
c. Provide financial support either in the form of voucher to those who are already employed, but inclined on acquiring multiple skills
d. Enable formal certification of informally acquired skills through NSDC's partner institutes
e. Encourage the inclusion of soft skills and organizational behavior in the training modules for service sector courses

22 Theni

22.1 Overview

Theni was carved out of Madurai district in 1997. Located in west Tamil Nadu, the district spans an area of 2,748 square kilometers, and lies at the foot of Western Ghats. The district is surrounded by the state of Kerala in the west, Madurai in the east, Dindigul in the north and Virudhunagar in the south. Administratively, the district is divided into two revenue divisions of Periyakulam and Uthamapalayam, comprising 5 taluks, 17 firkas and 113 revenue villages. Further, the urban areas are governed by 6 municipalities, while the relatively rural areas are governed by 22 town panchayats and 130 village panchayats.

Table 22-1: Basic Information (2010-11)

District Information	Theni	Tamil Nadu
Number of inhabited villages	81	15,400
Area (Sq Km)	2,748	127,905
% of state area	2.15	100
Area rank	24	-
Revenue divisions	2	-
Taluks	5	-
Blocks	8	-
Corporation & municipalities	6	-
Town panchayats	22	-
Revenue villages	113	-
Panchayat villages	130	-

Source: District Statistical Handbook (2010-11)

22.2 Demographic Profile

The 2011 census figures indicate that the population of Theni has grown by 13.69% between 2001 and 2011. With a population of about 12 lakh, the district constitutes 2% of the state's total population, while the geographical area of the district forms 2.15% of the state's total area. This results in a relatively stable population density for the district, at about 452 persons per square kilometer, which is lower than the state average. Further, the annual population growth of the district stands at 1.21%, which would lead to a fairly stable population growth rate over the next few years. A little more than half of the district is urbanized, with 53.83% of the population residing in urban areas.

The share of working age population is high at about 65%, while the worker participation rate is lower at approximately 42%, reflecting trends found in most of the other districts in the state. Agriculture seems to be the primary mode of employment, with more than half of the population engaged as agricultural laborers. The sex ratio of the district is lower than the state average, at 990 females for every 1,000 males – this might be partly explained by the low female life expectancy at birth observed in the district.

Table 22-2: Demographic Indicators (2011)

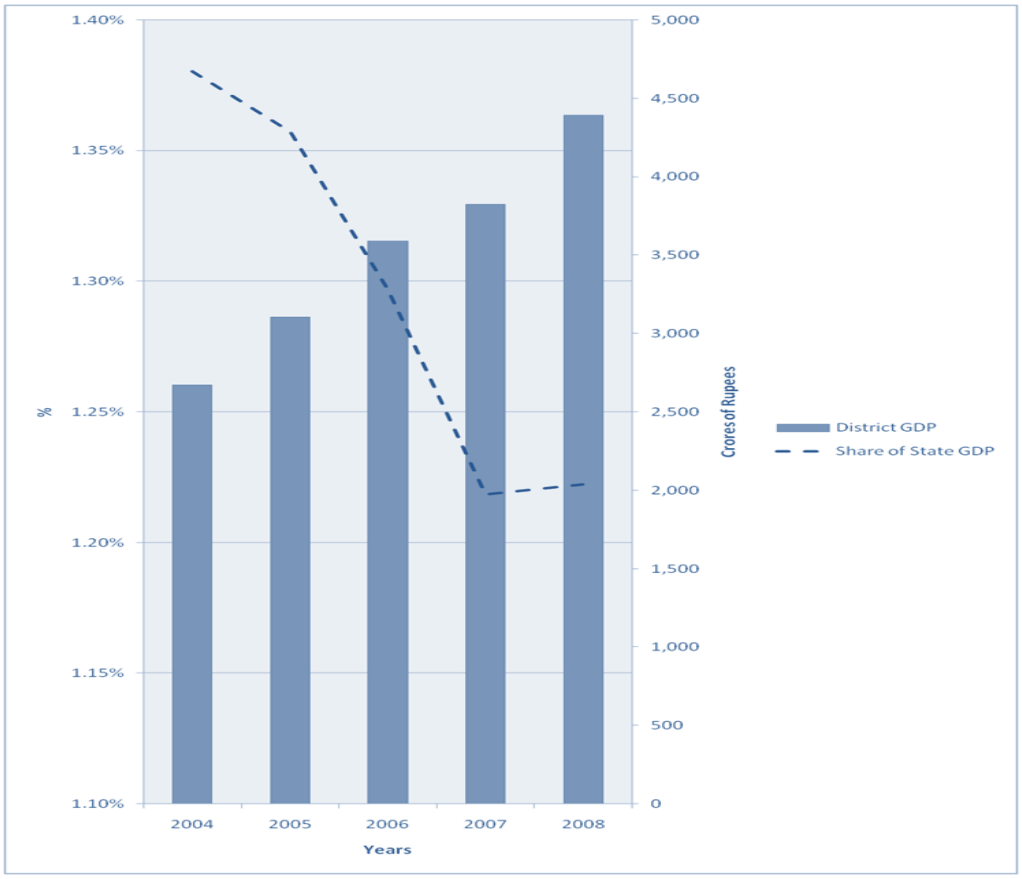
Population	Theni	Tamil Nadu
Population	1,243,684	72,138,958
Share of state population (in %)	2	100
Population density (per sq. km.)	452.53	564
Urban population percentage	53.83	48.45
Total population annual growth rate (in %)	1.21	2
Urban population	669,488	34,949,729
Sex ratio (number of females per 1000 males)	990	995

Source: Census 2011 (Provisional)

22.3 Economic Profile

The contribution of the district to the state GDP has dropped steadily from a high of 1.37% to a low of 1.23% in 2008-09. The per capita income of the district is also lower than the state average, at INR 41,668. Additionally, urban and rural incomes are lower than the state average, although the disparity between the urban and rural areas is lower in comparison to the other districts of the state. The development indicators for the district reflect medium levels of development, with both the HDI and GDI figures slightly lower than the state average at 0.628 each.

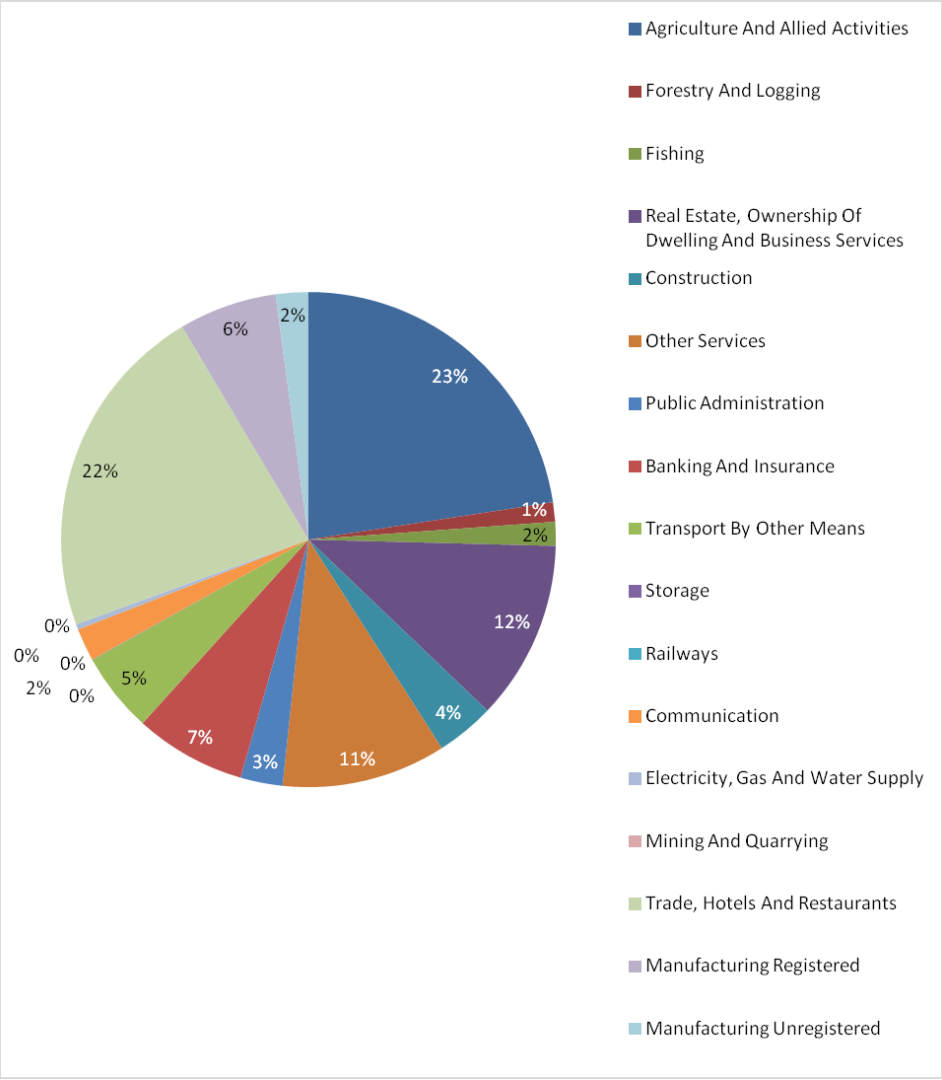
Figure 22.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Trade, hotels and restaurants accounted for 22% of the district GDP, followed by real estate services at 12%. Agriculture accounts for 23% while forestry and fishing activities account for another 1% and 2% respectively. Manufacturing accounts for just 8%, of which the majority is registered manufacturing at 6%. Other dominant sectors include banking and financial services, storage and other services.

Figure 22.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 22-3: Per Capita Income (2011-12)

Human Development Indicators	Theni	Tamil Nadu
Per capita urban income	44,900	100,600
Per capita rural income	37,900	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

22.3.1 Agriculture

The district is primarily agrarian in nature, with 1,26,148 hectares of land being cultivated. The cultivated area is divided into a substantial number of land holdings. There are 1,28,081 land holdings in the district, of which the majority of the land holdings are either marginal or small land holdings, amounting to less than one hectare per land holding. Despite the marginal landholdings, the productivity of agriculture in the state has increased on account of the wide usage of mechanized agricultural techniques and substantial irrigation facilities.

About 72% of the total sown area is under food crops. Around 46% of this sown area is under cereals, 8% under pulses and 32% under fruits and vegetables. Non food crops include sugarcane, cotton, and oil seeds. Nearly 27% of the total sown area is under non-food crops. Almost 22% of this area goes to sugarcane while oil seeds have a share of 8% of the remaining sown area. Yield is higher than the state for almost all crops except condiments, vegetables and mango.

Table 22-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	40,961	46.09%
Pulses	7,447	8.38%
Condiments	4,445	5.00%
Fruits and vegetables	28,603	32.19%
Other	7,414	8.34%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	7,228	21.92%
Cotton	1,545	4.69%
Oil seeds	2,805	8.51%
Tobacco	19	0.06%
Other	21,379	64.83%
Total Area under Food Crops	**88,870**	**72.94%**
Total Area under Non Food- Crops	**32,976**	**27.06%**

Source: Tamil Nadu Crop Report (2011-12)

Table 22-5: Major Crops: Yield in KG per Hectare in 2011-12

Crop	Yield for Theni	Yield for Tamil Nadu
Cereals	18,410	12,136
Pulses	3,587	2,763
Sugarcane	131	101
Condiments	10,026	32,440
Vegetables	136,532	164,422
Mango	4,154	4,795
Cotton	849	368
Tobacco	2,203	1,524
Oil seeds	24,348	16,484

Source: Tamil Nadu Crop Report (2011-12)

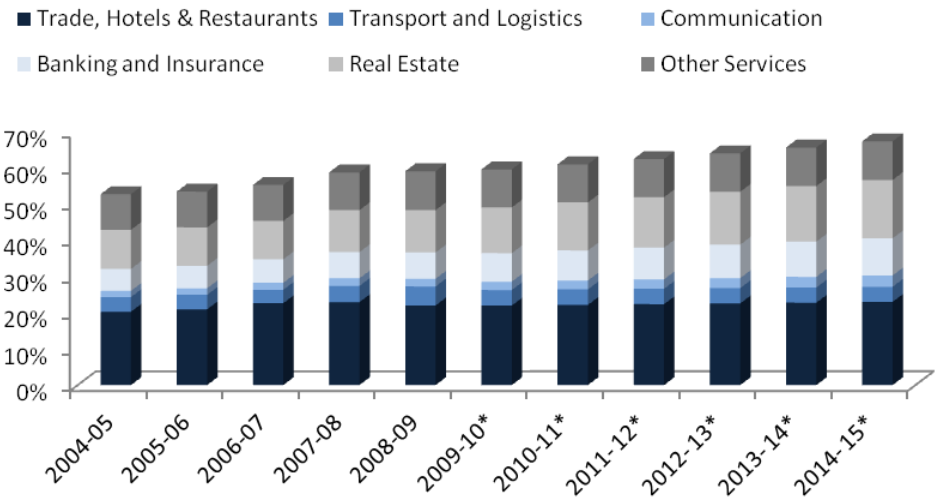
22.3.2 Industry

The high performing agricultural sector trend in the district spills over to the secondary sector too. The district is dotted with a number of agro based, small and medium scale food processing industries. The industry sector employs about 55,000 people. There are a total of 5,375 MSME units involved in various activities such as food processing units, manufacturing of electrical components and other minor metal products. These units generate significant employment opportunities; they currently employ a total of 13,724 people in the district. There are also a number of other medium scale units including textiles, rubber products, chemical products and other transport equipment industries.

Further, the SIDCO Industrial Estates at Theni and Aundipatty are symbols of the growing industrial development in the district. Various manufacturing activities are carried out in these estates, ranging from the processing of various food grains to the manufacturing of chemicals. A few textile and rice mills have also been set up recently in these industrial estates. In terms of large scale industries, there are a total of 11 textile companies, one paper company, one chemicals manufacturing company and two food processing companies operating in the district. The textile and food processing companies also export some of their products to other countries. The district is set to witness further growth in the textiles sub sector; Capex information indicates that an investment of INR 61 crore has been sanctioned for setting up new textile units and spinning mills.

22.3.3 Services

Figure 22.3: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The contribution of the service sector to Theni's output is expected to rise from 59% in 2008-09 to 67% in 2014-15, driven from growth in the real estate and banking and insurance sectors. Banking and insurance and real estate are expected to contribute to 10% and 16% of the district GDP in 2012-13 as against the 7% and 12% in 2008-09.

Approximately 1.52 lakh people are employed in the services sector. The idyllic location of the district makes it a favorable spot for the development of tourism. The district is home to a number of dams, waterfalls, natural parks and antique temples. This has prompted the establishment of various hotels and restaurants in the district – at present there are 21 registered hotels and restaurants in the district. However, the prevailing unorganized section within this sub sector has not led to the growth of tourism within the district.

Banking and health care services in the district are moderately developed. There are a total of 59 government bank branches and 48 private banks catering to the districts' inhabitants. Further, there are 13 hospitals, 39 primary health centres and 162 health sub centres spread across the towns and villages of the district. However, these health care centres are staffed by a meager number of 15 doctors, suggesting the need for more qualified professionals in this particular sub sector. Transport infrastructure services reflect modest connectivity within the district. The larger forest cover leads to higher road connectivity than railway services.

The robust agrarian economy in the district has led to the development of trade and commerce for agricultural produce. Bodinayakanur, in particular, is a major market place for agricultural produce such as cardamom, coffee, tea and black pepper. The huge amounts of cardamom traded along with the presence of an auction centre for cardamom has led to this city being called the 'Cardamom City' of Tamil Nadu.

22.4 State of Education

Literacy trends in Theni more or less follow the state average trends; according to the 2011 census provisional data, the literacy rate in the district is 78%. Male and female literacy have witnessed considerable developments over the decade – male literacy has increased from 81.9% to 85.48%, while the female literacy rate has increased at a faster pace from 61.2% in 2001 to 69.72% in 2011.

Table 22-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	61.20	69.72	0.14
Male	81.90	85.48	0.04

Source: Census 2001, Census 2011(Provisional)

There are 495 primary schools, 181 upper primary schools, 82 secondary and 96 higher secondary schools in the district. The net enrolment ratio is higher for primary schools as opposed to upper primary schools; however, the dropout rates for upper primary schools are lower.

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 64,215, while enrolment in schools that had primary and upper primary classes was 53,533. Enrolment in upper primary schools was 1,013 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 28,869, while enrolment in schools with upper primary and secondary/ higher secondary classes was 38,747.

Table 22-7: Education Profile (2010-11)

Educational Statistics	Units in Theni	Units in Tamil Nadu
Primary	495	33,909
Upper primary	181	8,552
Secondary	82	4,436
Higher secondary	96	4,632
Primary age population	98.19	6,420,747
NER – Primary (%)	96.88	98
NER - Upper primary (%)	3.52	98
Dropout rate- Primary (%)	2.21	3.81
Dropout rate - Upper primary (%)	Theni	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12

There are four engineering colleges and four arts and science colleges in the district. There is one pharmacy college and four polytechnics. The combined capacity of all the ITIs and ITCs in the district is 2,310. The details of the major ITIs in the district are given in the appendix.

Table 22-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	4
Arts and sciences	4
Management	0
Medical	0
Dental	0
Nursing	0
Pharmacy	1
Other medical	0
Teacher training and education	0
Hospitality	0
Fashion technology	0
Polytechnics	4
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

22.5 Incremental Human Resource Availability

The current work force is estimated to be 5.18 lakh, which is estimated to grow to 6.28 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 52,000 and in 2017-22, the incremental availability is estimated to be 58,000.

Table 22-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	1,257	831	530	518		
2017	1,364	898	583	570	52	
2022	1,484	970	642	628		58

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level.

Table 22-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	36	5	11	52
2017-22	39	4	15	58

Source: Athena Research

22.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the unorganized sector. Construction, textiles, retail, BFSI, transportation and logistics and food processing are expected to see a moderate increase in human resource requirements. The human resource requirement in the agriculture sector is expected to decline by 18,000 in 2012-17 and 15,000 in 2017-22.

Table 22-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-15	0	-3	**-18**	-13	0	-2	**-15**
Automobile	0	0	0	**0**	0	0	0	**0**
Chemicals and Pharmaceuticals	0	0	0	**0**	0	0	0	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	1	0	0	**1**	1	0	0	**1**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**0**	0	0	0	**0**
Handlooms & Handicrafts	0	0	0	**0**	0	0	0	**0**
Leather	0	0	0	**0**	0	0	0	**0**
Textiles	2	0	0	**3**	3	1	1	**4**
BFSI	0	0	1	**2**	0	1	2	**2**
Construction	4	1	0	**5**	8	2	1	**10**
Education	0	0	1	**1**	0	0	1	**1**
Healthcare	0	0	1	**1**	0	0	1	**1**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	0	0	1	**1**	0	0	1	**2**
Organized Retail	1	0	1	**3**	2	1	2	**5**
Real Estate	0	0	0	**1**	0	0	1	**1**
Tourism & Travel	0	0	0	**0**	0	0	0	**0**
Transportation & Logistics	1	0	0	**1**	1	0	0	**1**
Unorganized (excluding Agriculture and Construction)	23	11	16	**50**	27	17	21	**64**
TOTAL	**17**	**14**	**19**	**49**	**29**	**22**	**26**	**77**

Source: Athena Research

The long term growth sectors for Theni appear to be textiles and construction. The textiles industry is already well established in the district and is expected to grow rapidly. The growth of these industries is likely to be accompanied by the growth of service sectors such as retail, BFSI and transportation and logistics. The skill intensity of the sectors is expected to rise gradually over time with improvements in technology.

22.7 Skill Gap

The largest skill gap is at the semi skilled level at 9,000 in 2012-17 and 17,000 in 2017-22. There is estimated to be an excess availability of human resources at the unskilled level. However, with an increasing number of youth opting for skilling, this gap is expected to decline by 2022. At the skilled level, the gap is estimated to be 7,000 in 2012-17 and 11,000 in 2017-22. The aggregate negative skill gap indicates the need for skilling the unskilled to bridge the skill gap and create additional employment opportunities to meet the fall in human resource requirements precipitated by the change in human resource requirements in the agriculture sector.

Table 22-12: Skill Gap in 000s

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	17	14	19	**49**	29	22	26	**77**
Incremental Human Resource Availability	36	5	11	**52**	39	4	15	**58**
Skill Gap	**-19**	**9**	**7**	**-4**	**-10**	**17**	**11**	**18**

Note: Figures in parenthesis indicate excess supply
Source: Athena Research

Qualitative Skill Gaps

High levels of disguised unemployment

Disguised unemployment is a major problem in the district due to over-reliance on agriculture for employment. Most of the people are either unaware of the opportunities for employment in the industry, or are unwilling to work in these industries due to lower flexibility in work conditions. Therefore, to keep themselves engaged, they usually work with their families on fragmented land holdings.

High attrition rates prevent assimilation of labour

Attrition is a major challenge in these companies, with employees often leaving their jobs after a few months, citing reasons such as low pay, unreasonable work hours and zero fringe benefits. Therefore, the district's residents do not see much value in education or skill acquisition.

22.8 Youth Aspirations

Table 22-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	Retail	Construction
	Low	Electronics	Chemicals

Source: Athena Research

Negative Disposition towards acquisition of formal skills

There are few industries in Theni and are mostly extensions of the primary sector – they focus on agro and food processing. They rely on agricultural produce, which may vary significantly in quantity and quality, depending on weather conditions. Hence, these industrial units too are not very profitable, pay meagre salaries and are unable to generate viable job opportunities. Further, since most of them are averse to leaving their district, the youth youth in district do not see any real incentive in acquiring skills.

Poor emphasis on formal education

Education levels in the district are low and the educational infrastructure is poor. The schools often do not have teachers or proper classrooms. Furthermore, people do not see much value in education, leading them to choose to discontinue their education. They educate themselves enough to be able to read and write. There are very few higher educational institutions in the district, and are often privately owned. The people are often hesitant to spend on such education. They do not understand the benefit of an undergraduate education or a diploma. Therefore, although the district may have some good institutions, it does not result in an improvement in the overall educational levels of the population.

There are a few government ITIs and polytechnics in the district, but they have high vacancies. Students who graduated from these ITIs are either unable to find jobs, or do not like the jobs they were offered. Thus they prefer to gain work experience by working in the industry rather than expending time and money on vocational education.

22.9 Recommendations

22.9.1 State

Improve quality and access to basic education

The development of educational facilities is low in the district and is constrained by the low availability of infrastructure. The lack of access to good basic education makes skill training very challenging since the students are not familiar with basic concepts and are often unable to absorb the skill training imparted to them. Most of the students choose to drop out of school by the sixth or eighth grade, which further acts a restraint on any developmental activities proposed. This calls for increased emphasis on improving the quality of basic education and to improve retention of students in school at least till the 10th grade and to ensure strong fundamentals, particularly in backward regions.

Action Plan

a. Expand and rehabilitate basic educational infrastructure in backward regions to improve access

b. Build strong teacher training institutions, with a greater focus on the improvement of pedagogical methods and provide continuous training for contractual teachers
c. Use campaigns to improve community awareness and involvement to ensure the sustainability, maintenance and good management of the school and ensure that children stay in school at least till the 10th

Facilitate programs to encourage entrepreneurship

Lack of skilled development opportunities coupled with the lack of incentives to foster entrepreneurship is a major problem in this district. Initiatives such as SIDCO and SIPCOT have shown success in promoting entrepreneurship in other districts. There is a need for an overt emphasis on grooming people to set up their own business or encourage entrepreneurship.

Action Plan:

a. Train the youth in multiple skills, with greater emphasis on sectors which can support local self employment
b. The Entrepreneurship Development Institute in the state must play a more proactive role in financing and regulating entrepreneurship programmes for youth in the district
c. Disburse seed capital to the youth based on a set of pre-determined criteria at a lower interest rate
d. Expand the voucher scheme to include multi-skilling and entrepreneurship programs

22.9.2 Industry

Provide options for skill development programs on the job

Graduates who complete vocational training courses perceive employment in industry as being a static option, with little or no upward mobility. Further, given that the poorest sections are the ones that often opt to enrol in Industrial Training Institutes, they are compelled to begin work early on and do not have the monetary bandwidth to acquire additional skills. The high opportunity cost of skill development in the form of loss of wages for the duration of training deters the youth from enrolling in vocational education. Creating opportunities for learning on the job, will help industries improve employee morale and the productivity of human resources.

Action Plan:

a. Encourage employees to attend external seminars, training sessions and conferences
b. Incentivize employees to acquire additional skills on the job by enrolling in part time courses and link promotions and wage increases to additional skills acquired
c. Hold orientation programs to acclimatise workers to formal work environments
d. Broaden an employee's knowledge of other functions and departments in the organization to improve portability of skills
e. Arrange for periodic in-house training with a training consultant/ tie-up with training institutions to up-skill the employees through on the job-training programmes
f. Establish a sponsorship program for high performing employees and sponsor the acquisition of certain specialized skills of relevance to the firm

Gender sensitization at the work place

The level of participation in education and formal employment by women is relatively low. There is a need to encourage female participation through gender sensitization at the work place.

Action Plan:

a. Create strong gender policies, emphasizing the need for parity in terms of access to promotions, wage rates and devote resources to put the policy into practice
b. Offer non-gender stereotyped roles and choices for both men and women
c. Institutionalize women's access to decision making roles
d. Create a strong redressal mechanism to resolve concerns in a time bound manner

22.9.3 Training Providers

Provision of accommodation and other benefits to incentivise migration to industrialized areas

Access to vocational education is low, particularly in backward blocks and the absence of accommodation and basic infrastructure further deters enrolment in vocational training. In order to incentivize youth engaged in agriculture or the unorganized sector to enter skilling and formal employment, there is a need to make it possible for youth in backward areas to access vocational training facilities.

Action Plan:

a. Create accommodation facilities in close proximity to the area of work and allocate the same to migrant labour
b. Create a system of reimbursements, where the expenditure incurred on rents by the migrant employee is reimbursed on actuals.
c. Set up remote classes through schools or other locally accessible educational institutions at the block level
d. Provide information on skill development to the youth through employment exchanges

Focus on up-skilling workers in the unorganized sector

Owing to the high dropout rates at various stages of the value chain starting from primary schooling in the district, a large number of people tend to enter the workforce as unskilled or semi-skilled resources. Most of these people are employed in the unorganized sector and tend to operate at low productivity levels and receive low wages. Thus, there is a huge requirement to up skill those who are already employed in the unorganized sector and provide them with the necessary certifications to transition into the formal sector.

Action Plan:

a. Focus on growing industry sectors such as construction, textiles and retail
b. Introduce short modular employability courses in trades that have high local or regional demand
c. Introduce flexible course timings
d. Certify and provide placement support to those graduating from the MES trades to catalyze transition into the formal sector

22.9.4 NSDC

Encourage earn while you learn programmes

Given the high levels of disguised unemployment in the district, there is a clear case for up skilling. However most people in the district are observed to be economically backward and often tend to drop out of the formal educational system owing to economic compulsions. Thus, there is a need in the district to up-skill its workforce through the encouragement of earn while you learn programmes

Action Plan:

a. Group the people engaged as labour into groups based on location and provide select skill trainers in the district with the required inventory to implement the mobile classroom concept
b. Provide stipends to those interested in acquiring certifications in skill on a part time basis by using the existing vocational infrastructure
c. Encourage skill trainers to introduce modular employability trades of relevance to local demand with flexible timings

Introductory classes on basic concepts

Most students in the district seemed to find the curriculum delivered in the vocational institutes rather difficult to absorb owing to the poor levels of basic education in the district. This has led to falling pass rates and low student morale in the district. This is mostly true of technical trades.

Action Plan:

a. Identify a set of basic concepts that all students enrolling in engineering trades must know
b. Develop a beginners guide which covers these basic concepts in simple language
c. Use master trainers to train the faculty members to deliver the beginners guide appropriately
d. Provide refresher courses and tutorials for weak students

23 Thiruvallur

23.1 Overview

Thiruvallur is a relatively new district, carved out of the erstwhile Chengalpattu district in January 1997. Located in northeast Tamil Nadu, it is bordered by Kancheepuram in the south, Vellore in the west, the Bay of Bengal in the east and the state of Andhra Pradesh in the north. The district is divided into 4 revenue blocks: Tiruvallur, Tiruttani, Ponnari and Ambattur, containing a total of 9 taluks. There are 620 inhabited villages, 558 panchayats, and 14 CD blocks.

Table 23-1: Basic Information (2010-11)

District Information	Thiruvallur	Tamil Nadu
Number of inhabited villages	620	15,400
Area (Sq Km)	3,011	127,905
% of state area	2.35	100
Area rank	22	-
Revenue divisions	4	-
Taluks	9	-
Blocks	14	-
Corporation & municipalities	12	-
Town panchayats	13	-
Revenue villages	705	-
Panchayat Villages	540	-

Source: District Statistical Handbook (2010-11)

23.2 Demographic Profile

Thiruvallur is one the most populous districts in the state, constituting over 5% of the total state population. Given its comparatively moderate size, it is also very densely populated at 1,237 people per square kilometer, much higher than most other districts. The growth rate is extremely low at only 0.79 % annually, which hints at near stability with a possibility of declining population growth in the future. It is likely that Thiruvallur will largely rely on migration to fulfill its labor requirements. The district is highly urbanized with over 65% of the population falling under this category. Primary sector workers account for about 25% of all workers. However, the worker participation rate remains rather low at about 27%.

Per capita incomes are high in the district, comfortable above the state level. Given the minor showing of agriculture in the district, the spread between urban and rural earnings is quite high, with urban incomes being 180% times that of rural incomes.

Table 23-2: Demographic Indicators (2011)

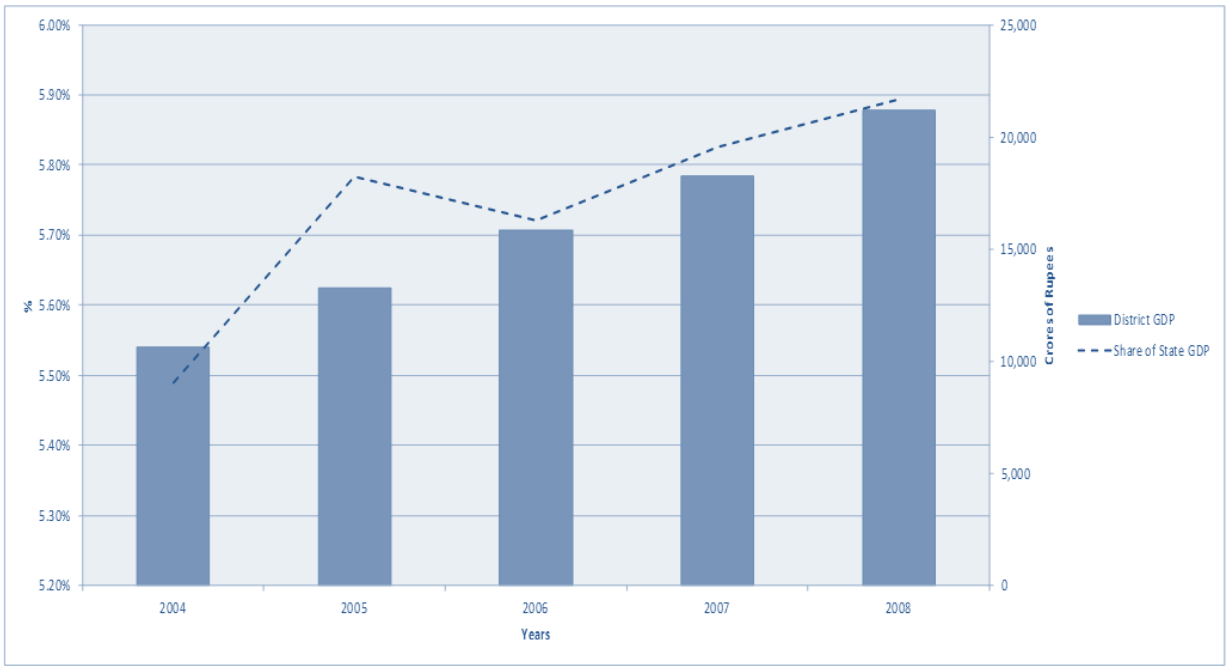
Population	Thiruvallur	Tamil Nadu
Population	3,725,697	72,138,958
Share of state population (in %)	5	100
Population density (per sq. km.)	1237.24	564
Urban population percentage	65.30	48.45
Total population annual growth rate (in %)	0.79	2
Urban population	2,433,018	34,949,729
Sex ratio (number of females per 1000 males)	983	995

Source: Census 2011 (Provisional)

23.3 Economic Profile

The economy of the district has seen a steady rise over the past decade, with its contribution to the state GDP increasing from just about 2% to over 3.8% in 2008-09. The total per capita income for the district is slightly lower than the state average at INR 61,082. The disparity between urban and rural per capita income is also relatively lower – the rural per capita income, in particular, is significantly higher than the state average.

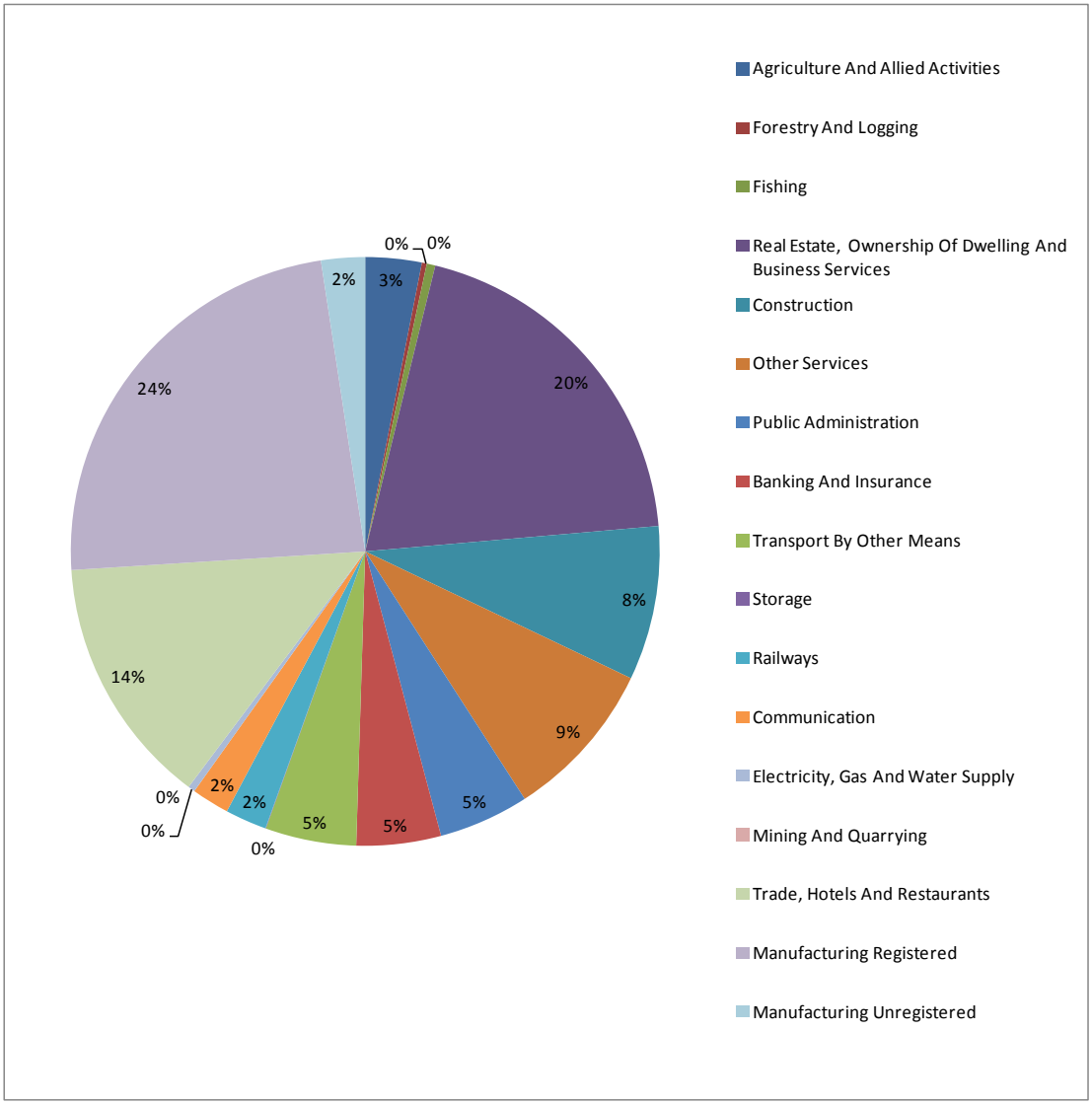
Figure 23.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Manufacturing contributes 26% to the district GDP, with unregistered manufacturing occupying more than 8% of the total manufacturing. Agriculture has just a 3% share in district income and services occupy the rest, mostly in real estate, tourism and travel, and communication.

Figure 23.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 23-3: Per Capita Income (2011-12)

Human Development Indicators	Thiruvallur	Tamil Nadu
Per capita urban income	44,900	100,600
Per capita rural income	37,900	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

23.3.1 Agriculture

Despite its high rate of urbanization, a significant proportion of the population is engaged in agricultural activity. As of 2009-10, 47% of the total labor force is occupied in agriculture and related activities, mostly on small and marginal holdings. Limited availability of further land for agriculture expansion, increasing industrialization and growing acquisition of land for non agricultural purposes indicates that the role of this sector is set to shrink in the district. The associated small and household industries are beginning to complement the industrial activities in the district, further reducing the case for agricultural expansion. The amount of land under cultivation and the small rural population suggest that agriculture in the district is largely organized. Hence, there is scope for technological improvement.

About 82% of the total sown area is under food crops. Nearly 76% of this sown area is under cereals, 6% under pulses and 11% under fruits and vegetables. Non food crops include sugarcane, oilseeds and tobacco. Around 18% of the total sown area is under non-food crops. Almost 62% of this area goes to oil seeds while sugarcane has a share of 25% of the remaining sown area. Yield is higher than the state for cereals, pulses and oilseeds, while it is lower than the state for all other major crop groups.

Table 23-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	86,920	75.70%
Pulses	7,243	6.31%
Condiments	670	0.58%
Fruits and vegetables	13,426	11.69%
Other	6,558	5.71%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	6,440	24.97%
Cotton	8	0.03%
Oil seeds	15,980	61.96%
Tobacco	0	0.00%
Other	3,363	13.04%
Total Area under Food Crops	**114,817**	**81.66%**
Total Area under Non Food- Crops	**25,791**	**18.34%**

Source: Tamil Nadu Crop Report (2011-12)

Table 23-5: Major Crops: Yield in KG per Hectare in 2011-12

Crop	Yield for Thiruvallur	Yield for Tamil Nadu
Cereals	12,323	12,136
Pulses	2,836	2,763
Sugarcane	102	101
Condiments	4,309	32,440
Vegetables	79,578	164,422
Mango	2,177	4,795
Cotton	0	368
Tobacco	0	1,524
Oil seeds	18,356	16,484

Source: Tamil Nadu Crop Report (2011-12)

23.3.2 Industry

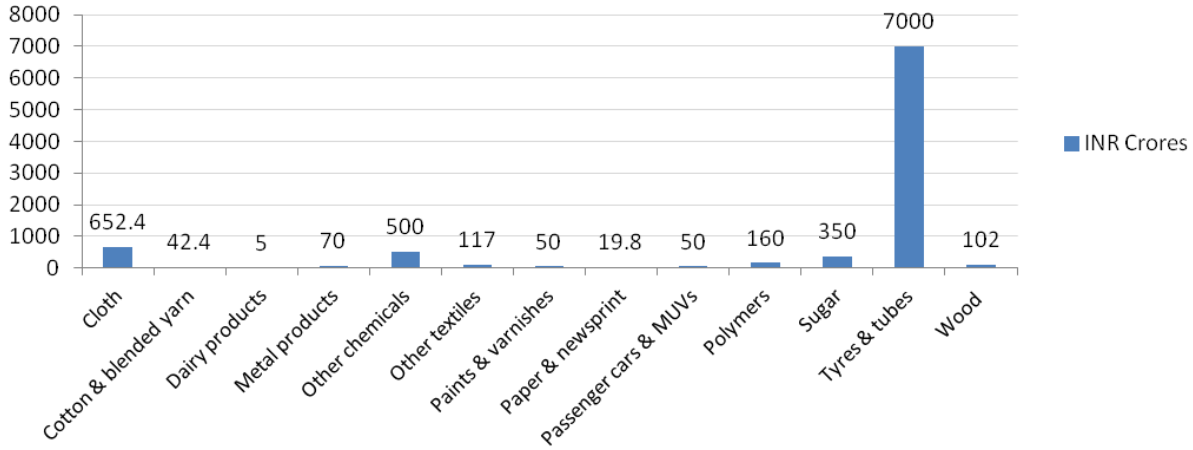
Thiruvallur is one of the fastest developing industrial centres in the state, with nearly 2.97 lakh people employed in the major industries. Its strategic location to the state capital and proximity to important ports of Chennai and Ennore makes it a favored destination of large manufacturing industries like textiles, bricks, electronics, engineering and allied industries. Some examples of such industries include Madras Refineries, Madras Fertilizers, Manali Petro Chemicals, MRF, Ashok Leyland, TI Cycles, Britannia India Ltd, Parry India Ltd and Hindustan Motors.

The tank factory at Avadi produces India's frontline battle tank. There are 11 government and 5 private industrial complexes in the district.

Besides the large scale industries, Thiruvallur is also home to many small scale industries. Textiles are concentrated in the Pallipatu and R.K. Pet blocks, brick manufacturing in the Poonamallee and Villivakkam blocks and electronics and engineering in the Thiruvallur, Gummidipoondi and Villivakkam blocks. In total, 16,940 small industries exist in the food, wood, textile, chemical, engineering, non-metallic and leather sectors.

Capex data indicates a large amount of industrial investment in recent years, mainly in automotive parts and textiles. There has also been significant investment in chemicals and sugar. The graph below summarizes the investment amounts and distribution from 2007-2012. The massive investment in tyres and tubes is a planned plant by Michelin.

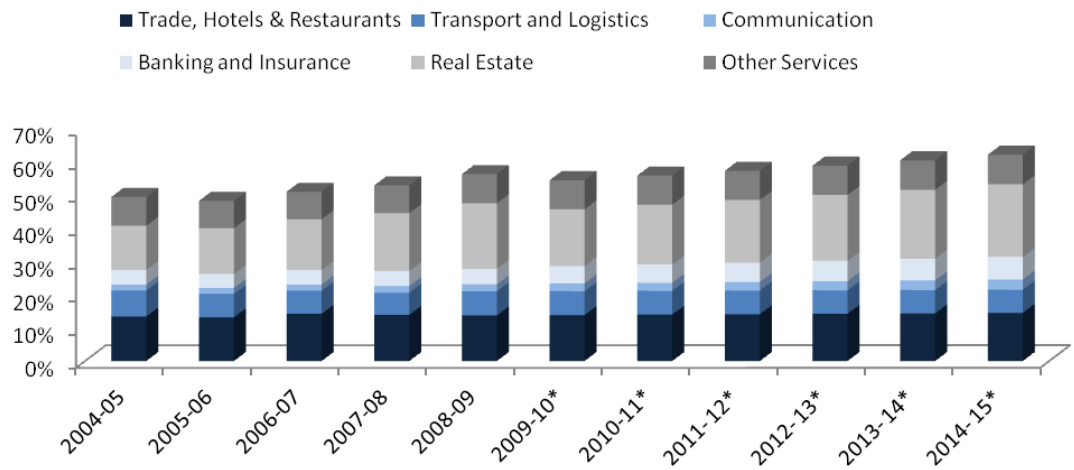
Figure 23.3: Investments in INR Crore



Source: Capex, CMIE (2011-12)

23.3.3 Services

Figure 23.4: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The contribution of the service sector to district output in Thrivallur is expected to grow at a marginal rate from 56% in 2008-09 to 59% in 2012-13, with most of this growth being driven by the real estate sector. Owing to the rapid urbanization of the district, the real estate sector in the district has seen significant growth at a CAGR of 23% between 2004-05 and 2008-09 and is expected to contribute to 22% of the district GDP in 2014-15.

The services sector employs 5.81 lakh people in the district. Thiruvallur is quickly becoming an urban extension of the Chennai suburbs. As such, there is great potential for the growth of related services in this region. There are 17 hospitals in the district with a bed strength of 760. There is a large network of secondary health care centres, over 370, in total. About 254 bank branches are distributed about the district. Over 440 kilometers of

state highways run through the district, along with more than 1100 kilometers worth of internal road networks. There are 37 railways stations serving railway lines with a track length of 321 kilometers.

23.4 State of Education

The literacy rate in Thiruvallur is high at 84%, which is greater than the state average of 80%. Female and male literacy both rose in the decade 2001-11 from 68% and 85% to 78% and 89% respectively.

Table 23-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	68.40	78.39	0.15
Male	85.40	89.18	0.04

Source: Census 2001, Census 2011(Provisional)

There are 1164 primary schools, 355 upper primary schools, 219 secondary schools and 200 higher secondary schools in the district. According to data available from the District Information System for Education, net enrolment ratios improved from 94 to 97 from 2007-08 to 2009-10. Analysis of key indicators reveals that dropout rates are high for both primary and upper primary levels. Also, about a quarter of those enrolled do not complete their primary education, but this drops off to about 18% at the upper primary level.

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 1,25,904, while enrolment in schools that had primary and upper primary classes was 79,357. Enrolment in upper primary schools was 451 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 1,83,386, while enrolment in schools with upper primary and secondary/ higher secondary classes was 75,317.

Table 23-7: Education Profile (2010-11)

Educational Statistics	Units in Thiruvallur	Units in Tamil Nadu
Primary	1164	33,909
Upper primary	355	8,552
Secondary	219	4,436
Higher secondary	200	4,632
NER – Primary (%)	98.52	98
NER - Upper primary (%)	97.65	98
Dropout rate – Primary (%)	7.43	3.81
Dropout rate - Upper primary (%)	8.02	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

Thiruvallur has six universities, one of which is purely medical and two offer only engineering courses. The total enrolment in these institutions is about 19,593 students. The dominant presence of medical education is probably due to the proximity to major national health centres in Chennai and Vellore. Similarly, the presence of a dense network of engineering colleges is complementary to the industrial belts criss-crossing the region. Besides the five universities offering engineering courses, there are also 39 private engineering colleges with about 15,574 students in total. Additionally there are 18 polytechnics with 5847 students and 14 ITIs. There are also 23 arts and science colleges, the majority of whom are self financed private institutions. Additionally, four

hotel management training institutes are also located in the district. The combined capacity of all the ITIs and ITCs in the district is 420.

Table 23-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	19
Arts and sciences	5
Management	1
Medical	0
Dental	0
Nursing	0
Pharmacy	2
Other medical	1
Teacher training and education	0
Hospitality	2
Fashion technology	0
Polytechnics	4
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

23.5 Incremental Human Resource Availability

The current work force is estimated to be 15.73 lakh, which is estimated to grow to 23.04 lakh by 2022, with rising inward migration from other states as well as the other districts of Tamil Nadu. The incremental availability of human resources in 2012-17 is estimated to be 3.4 lakh and in 2017-22, the incremental availability is estimated to be 3.91 lakh.

Table 23-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	3,818	2,524	1,610	1,573		
2017	4,524	2,981	1,955	1,913	340	
2022	5,342	3,499	2,351	2,304		391

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level.

Table 23-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	253	11	76	340
2017-22	279	13	100	391

Source: Athena Research

23.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the unorganized sector, construction, tourism and travel, automobile, textiles, IT/ITES, leather and organized retail. With opportunities for expansion in Chennai contracting, Thiruvallur is emerging as an alternative for growing industries. The human resource requirement in the agriculture sector is expected to decline by 35,000 in 2012-17 and 31,000 in 2017-22.

Table 23-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-29	-1	-5	**-35**	-25	-1	-5	**-31**
Automobile	13	16	6	**35**	22	29	10	**61**
Chemicals and Pharmaceuticals	7	10	15	**0**	6	10	14	**0**
Electronics Hardware	0	0	1	**2**	0	1	2	**3**
Food Processing	4	0	1	**5**	5	0	1	**7**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**1**	1	0	0	**1**
Handlooms & Handicrafts	-2	0	0	**-2**	-2	0	0	**-2**
Leather	6	2	2	**10**	9	4	3	**15**
Textiles	20	4	4	**28**	28	6	6	**40**
BFSI	0	1	4	**5**	0	2	6	**8**
Construction	43	8	4	**55**	95	18	9	**121**
Education	0	1	6	**6**	0	1	7	**8**
Healthcare	1	2	4	**7**	1	2	4	**7**
IT and ITES	0	1	11	**12**	0	1	15	**16**
Media & Entertainment	1	3	5	**8**	1	5	9	**14**
Organized Retail	5	1	3	**9**	8	2	6	**15**
Real Estate	0	1	4	**5**	0	1	6	**7**
Tourism & Travel	5	19	17	**42**	8	33	30	**71**
Transportation & Logistics	4	1	1	**6**	5	1	1	**7**
Unorganized (excluding Agriculture and Construction)	68	34	47	**150**	80	52	61	**193**
TOTAL	**147**	**105**	**130**	**351**	**243**	**166**	**185**	**564**

Source: Athena Research

The long term growth sectors for Thiruvallur appear to be textiles, automobiles and IT. Leather and electronics hardware industries, and will depend heavily on consumer demand for the products, which may fluctuate over time.

23.7 Skill Gap

The largest skill gap is at the semi skilled level at 94,000 in 2012-17 and 1.54 lakh in 2017-22. There is estimated to be an excess availability of human resources at the unskilled level over the next decade. At the skilled level, the gap is estimated to be 53,000 in 2012-17 and 85,000 in 2017-22.

Table 23-12: Skill Gap in 000s

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	147	105	130	**351**	243	166	185	**564**
Incremental Human Resource Availability	253	11	76	**340**	279	13	100	**391**
Skill Gap	**-106**	**94**	**53**	**11**	**-36**	**154**	**85**	**173**

Note: Figures in negative indicate excess supply
Source: Athena Research

The skill intensity of traditional sectors such as textiles and food processing is expected to rise gradually. However, a large proportion of inward migration is at the unskilled level, whereas skilled human resources often migrate outwards in search of better employment opportunities. These factors combine to precipitate a large skill gap across levels.

Qualitative Skill Gaps

Low industry training provider collaboration

A large number of automobile firms and IT firms are clustered in Thiruvallur. Despite the presence of these various industries, the interaction between the vocational training providers and the industries have remained minimal. As a consequence the curriculum delivered in these institutes is not relevant to industry needs and the graduates from these institutes are not considered industry-ready.

High variation in quality of workforce

Despite the rising industrialization and urbanization of the district, the district has not seen uniform development. The less developed areas have poor access to skilling and employment opportunities and the quality and intensity of skill acquisition is seen to vary widely within the district. More even development is required to ensure that the youth belonging to more backward regions of the district have adequate information and aspire to become more skilled.

23.8 Youth Aspirations

Table 23-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	IT/ITES, Automobile	Leather, Construction
	Low	Electronics	Gems and Jewelry, Handloom

Source: Athena Research

High drop-out rates in schools

People often choose to get educated in the district, on account of job availability at the rising number of industrial units. But a lot of jobs in these industries do not require advanced skills; they only require the applicants to have a basic understanding of English, and some understanding of machines and computers. So after completing the eighth grade, a lot of students drop out and opt for jobs in these industrial units. While the pay is very basic for those who opt to drop out of schools, these units provide a number of fringe benefits, such as accommodation, meals and more recently, transportation facilities. These benefits make up for the relatively low pay and more teenagers have started discontinuing their education to work in these industrial units.

High information asymmetry

There are some vocational training institutes in the district, but these institutes have very low enrolment rates. A majority of the jobs being created in the district are blue collar jobs in the automobile manufacturing companies, which require low skill levels. Most of the people are unaware about these opportunities, and there is plenty of scope to create awareness in this regard.

23.9 Recommendations

23.9.1 State Government

Establishment of a 'Skills Panchayat'

There is mismatch between requirement and availability of skilled human resource in the district, primarily due to the presence of high information asymmetries and the inability of small firms to recruit from vocational institutes. Only large firms recruit from ITIs and other education institutes. For smaller firms, conducting campus recruitments is not a viable option since their human resource requirements are small and sporadic. Additionally, students who have completed diploma courses expect higher compensation even if their skill level does not match the job requirements and small firms are often not in a position to meet such demands.

Meanwhile, a large number of youth graduating out of ITIs and other vocational institutes join the unemployed labour pool, on account of lack of information about the various job opportunities that are available, especially in the MSME sector. Thus the absence of a mechanism to help match the prospective employers with students exacerbates the skill gap. It is recommended that Skills Panchayats be set up in the district under the ambit of the District Skill Development Council to handle the operational details of bridging the skill gap at the micro level.

Action Plan:

a. Set up a 'Skills Panchayat' for specific blocks in the district vested with the responsibility to:
   cc. Aggregate data on the apprenticeship vacancies and employment opportunities in the specified area and display this information on a dedicated portal that can be accessed by students
   dd. Undertake counselling for students graduating from ITIs and other vocational training institutes
   ee. Organize campus placements
   ff. Prepare students for job interviews
   gg. Organize guest lectures and industrial visits
   hh. Track the employment status of all students for a period of at least 6 months after completion of the course
b. The Skills Panchayat must consist of personnel from the district administration and local industries and should act as an aggregator of demand and supply in the region

Facilitate private sector participation in training

While there are a number of government schemes such as the PPP scheme for ITIs, the industry appears to be unaware of such initiatives and private sector participation in skill development is relatively low.

Action Plan:

a. Make details of all schemes soliciting private sector participation available online
b. Disseminate information through industry associations
c. Encourage private training providers by providing standardized curriculum, accreditation based on adherence to infrastructure norms, etc.

23.9.2 Industry

Information on Human Resource Requirements

The lack of adequate information on industry requirements is an important factor contributing to the low interest in vocational education. The youth in the district do not appear to have clarity on the skill requirements of industry located within the district.

Action Plan:

a. Co-ordinate with employment exchanges/ local district councils and publish the data on the employment requirements in the industry, along with a clear description of the job requirements and the necessary qualifications
b. Promote the creation of a central database which matches information on skill levels to compensation and presents a list of potential employers in the state for a certain skill type – this may be taken by industry associations in the state
c. Participate in campus recruitments at vocational training institutes in the vicinity to establish a strong connection between employment and skill acquisition
d. Undertake frequent interaction with students at vocational education institutes through projects, lectures or visits

Rationalizing the wage norms for skills

The wages for basic vocational skills in the state, on an average continue to remain lower than the average cost of acquiring training (time and money cost), making skill acquisition an unattractive proposition for the youth. The presence of a large number of intermediaries between the employer and the employee, particularly for

informal workers, further drives down the actual wage level, owing to the higher costs of transactions. There is an urgent need to rationalize the wage levels for different skills levels in the district.

Action Plan:

a. Revise the minimum wage rate for graduates acquiring vocational training by taking into account the consumer price index number for industrial workers. Ensure that the starting wage is equal to or above the cost of acquiring training
b. Create a pay and career path for graduates coming out of vocational institutes
c. Incentivize the youth to acquire advanced or specialized skills by providing higher wage rates
d. Engage in off-campus recruitments by directly contacting training providers

23.9.3 Training Providers

Create partnerships with Industry

The close collaboration of industry and training providers can develop a competent and highly skilled workforce. The presence of a feedback loop, where the industry provides inputs regarding their perception of the quality and relevance of training delivered in a structured manner is critical for the continuous development of the training facility. However, the linkage between the trainer and the industry is observed to be weak in the district.

Action Plan:

a. Map the set of industries that absorb students through on campus/ off-campus recruitments
b. Create a formal feedback mechanism – Undertake an annual survey to extract feedback on the quality and relevance of training delivered in the institute
c. Incorporate the feedback and upgrade curriculum and pedagogy to reflect industry demand
d. Invite members from the Industry to deliver guest lectures at the institute
e. Enter into MOUs with industry to ensure continuous placements of students

Introduction of a dual apprenticeship model

Apprenticeship is designed to help students acquire the much required practical experience and remains the key channel of connecting them with industry. In the district, apprenticeship has remained a nominal feature, with the students acquiring little or practical knowledge post completion of their course period. Further students who are employed as apprentices by the industry are rarely absorbed into the firm as full time employees, owing to the lack of practical experience built into their course curriculum and the high costs associated with training them on the job. Thus there is an urgent need to strengthen the practical component of training by introducing a dual apprenticeship model, wherein the student is expected to acquire industry experience both during the course and after completion.

Action Plan:

a. Introduce a two month internship with local industries, embedded as a part of the course curriculum
b. Enter into an MOU with local industries to ensure a continuous supply of trainees to industries and a strong placement mechanism
c. Create a system to track the status of apprentices employed from the institute

23.9.4 NSDC

Capacity Creation

There is a need for focused capacity creation for growing sectors such as automobile, transportation and logistics, textiles, leather and construction.

Action Plan:

a. Set up training facilities in industrialized parts of the district to ensure proximity to potential employers.
b. While the youth do not show much resistance to migration, adequate infrastructure and facilities must be provided at the training location to incentivize them to enroll in vocational training.
c. Focus on semi skilled level courses for sectors such as automobile.
d. Offer career counseling to control drop outs from the institute and attrition from industry.

Quality control

Since the development of training infrastructure is relatively low in the district, the SSCs may play a proactive role in standardization of quality for additional capacity created in the district.

Action Plan:

a. Develop standardized content by industry, mandating the inclusion of specific topics in the courses.
b. Accredit institutions that comply with SSC guidelines.
c. Maintain a database of skill training providers in the district.
d. Develop and disseminate a standardized evaluation framework based on competency benchmarks.
e. Bridge information gaps among industry, students and training providers through the Labor Market Information System.

24 Thiruvarur

24.1 Overview

Thiruvarur lies on the eastern coast of Tamil Nadu and is bordered by Thanjavur in the west, Nagapattinam in the north, and both Nagapattinam and the Bay of Bengal in the south. It encloses the union territory of Puducherry. It is one of the smaller districts in the state, constituting only about 2% of the total land mass. The district is divided into two revenue divisions, seven taluks and ten blocks. There are 4 corporations, 7 town panchayats, 573 revenue villages and 540 panchayat villages.

Table 24-1: Basic Information (2010-11)

District Information	Thiruvarur	Tamil Nadu
Number of inhabited villages	541	15,400
Area (Sq Km)	2,654	127,905
% of state area	2.08	100
Area rank	25	-
Revenue divisions	2	-
Taluks	7	-
Blocks	10	-
Corporation & municipalities	4	-
Town panchayats	7	-
Revenue villages	573	-
Panchayat villages	540	-

Source: District Statistical Handbook (2010-11)

24.2 Demographic Profile

The district is moderately populated, constituting about 2% of the state population. The distribution of population is much sparser than the state average at almost 478 people per square kilometer. The population growth rate is lower than the state average at 1.29%. The sex ratio is much higher than the state average at 1020 females per 1000 males. The district is primarily agrarian, with the urban population comprising only about 20% of the total population. More than 62% of the population is of the working class age. Worker participation rates are marginally better than the state average at almost 39%.

Table 24-2: Demographic Indicators (2011)

Population	Thiruvarur	Tamil Nadu
Population	1,268,094	72,138,958
Share of state population (in %)	2	100
Population density (per sq. km.)	477.75	564
Urban population percentage	20.40	48.45
Total population annual growth rate (in %)	1.29	2
Urban population	258,683	34,949,729
Sex ratio (number of females per 1000 males)	1020	995

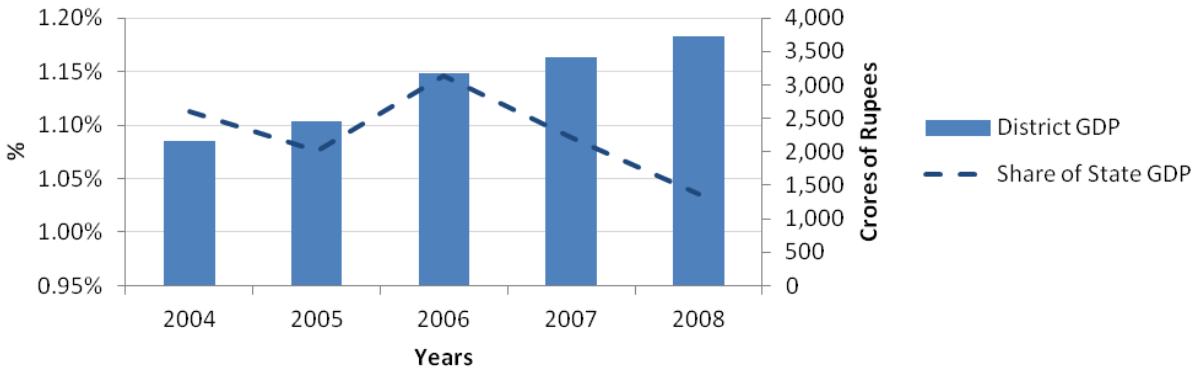
Source: Census 2011 (Provisional)

24.3 Economic Profile

The contribution of the district to the state GDP has varied between a high of 1.15% and a low of 1.03%. The contribution has been shaky and has fallen to 1.03% in 2008-09.

Per capita incomes in Thiruvarur show a peculiar pattern. Urban incomes are much lower than the state level, but rural incomes are much higher than the state level. Urban rural disparity is extremely low, with urban incomes exceeding rural incomes by only about 8%. Human development indicators are also high, though still lower than the state average, at 0.637 and 0.633 for HDI and GDI respectively.

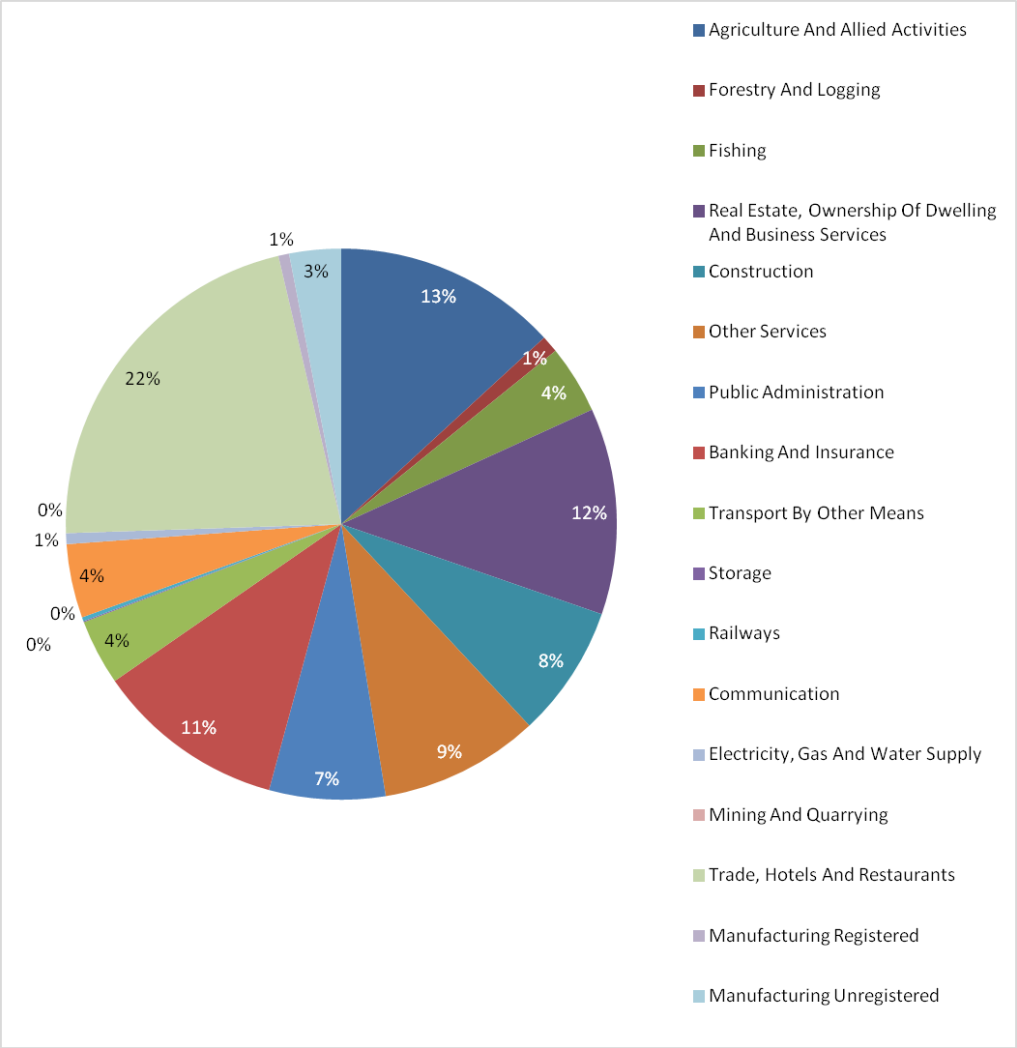
Figure 24.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Trade, hotels and restaurants accounted for 22% of the district GDP, followed by real estate services at 12%. Agriculture accounts for 13%. Manufacturing accounts for just 4%, of which 3% is unregistered. Other dominant sectors include banking and financial services, construction, public administration and other services.

Figure 24.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 24-3: Per Capita Income (2011-12)

Human Development Indicators	Thiruvarur	Tamil Nadu
Per capita urban income	55,900	100,600
Per capita rural income	51,600	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

24.3.1 Agriculture

More than 77% of the workforce is engaged in agriculture and allied activities. Household and manufacturing industries account for less than 2% of the workforce. About 30% of the workforce is engaged in other, unregistered activities. There is a massive non worker population, almost double that of the worker population. Major crops grown include paddy, pulses, groundnut, gingelly, sugarcane and cotton.

Table 24-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	165,799	67.02%
Pulses	77,803	31.45%
Condiments	148	0.06%
Fruits and vegetables	955	0.39%
Other	2,670	1.08%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	2,576	21.84%
Cotton	788	6.68%
Oil seeds	4,621	39.18%
Tobacco	0	0.00%
Other	3,809	32.30%
Total Area under Food Crops	**247,375**	**95.45%**
Total Area under Non Food- Crops	**11,794**	**4.55%**

Source: Tamil Nadu Crop Report (2011-12)

About 95% of the total sown area is under food crops. Around 67% of this sown area is under cereals and 31% under pulses. Non food crops include sugarcane, cotton, and oil seeds. Just 4% of the total sown area is under non-food crops. Almost 21% of this area goes to sugarcane, 6% is under cotton while oil seeds have a major share of 39% of the remaining sown area. Yield is generally much lower than state averages with the exception of oil seeds.

Table 24-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield for Thiruvarur	Yield for Tamil Nadu
Cereals	2,906	12,136
Pulses	772	2,763
Sugarcane	101	101
Condiments	7,958	32,440
Vegetables	51,858	164,422
Mango	4,795	4,795
Cotton	361	368
Tobacco	0	1,524
Oil seeds	18,358	16,484

Source: Tamil Nadu Crop Report (2011-12)

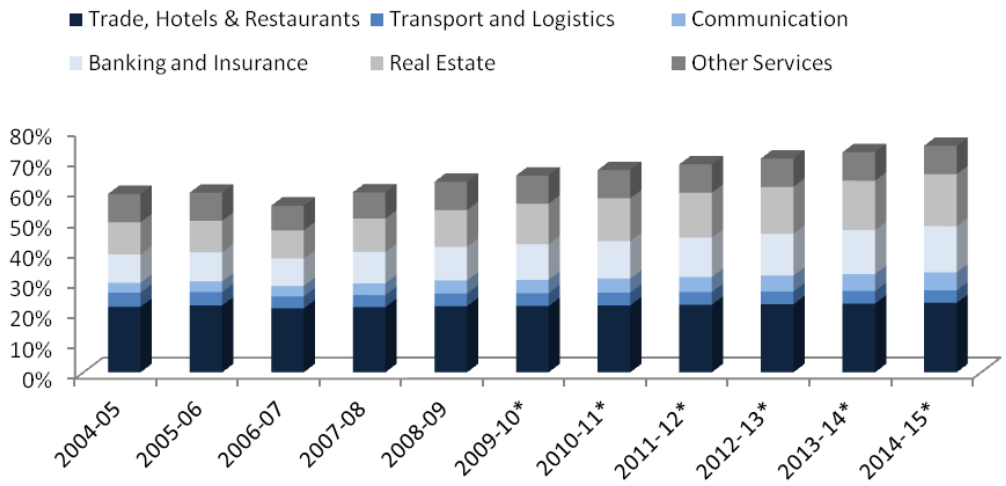
24.3.2 Industry

The district is primarily agrarian and the presence of large scale industries is limited. The organized industry sector employs 48,000 people. Most of the industries are agro based. There are only three large scale units, which has also contributed to the stagnant growth of ancillary industries. Some of the large scale agro processing industries include a government rice mill in Thiruvarur, South India Edible Oil in Karuppur and Pamani Fertilizers in Pamani. Cumulatively, they employ over 235 people. There are plans for an industrial estate at Vaipur in the Thiruvarur taluk of the district.

Composition of the SME space confirms that the majority of activity is related to the large agricultural base. The two largest employers are agro processing and textile units, with over 5,100 employees. There are also a large number of metal fabrication units. However, interaction with district officials highlighted the need for more concerted policy initiatives focusing on creating an industrial base in the district. Without significant policy thrust, the district will remain backward economically, with weak and diminishing growth prospects.

24.3.3 Services

Figure 24.3: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The district of Thiruvarur is popular for its annual arts and music festival, which attracts large crowds from around India. The rising tourism potential in the district has provided a boost to its service sector industries, which is expected to contribute to almost 75% of the district GDP in 2014-15. Trade, hotels and restaurants remain the largest contributor to district GDP and contribute to 23% of district GDP in 2014-15. Banking and insurance is also seen to be gaining momentum and is expected to contribute to 15% of GDP in 2014-15fqua.

Organized services employ 1.46 lakh people. There are 18 hospitals, 92 primary healthy centres and 195 sub centres in the district with a bed strength of 1,224. About 371 kilometers of highways run through the district, along with over 4,400 kilometers worth of district roads. There are a large number of railways stations in the district relative to its size, at 39, serving a track length of 359 kilometers.

24.4 State of Education

The literacy rate is significantly higher than the state average at 83%. Both male and female literacy rates rose in the period 2001-2011 from 85.4% and 67.9% to 77.2% and 89.65% respectively. Thiruvarur has a relatively healthy school infrastructure. It has 2% of the total number of schools in the state, and the distribution is such that there is a school every two square kilometers. NERs are within the normal level for the state, though marginally lower for the upper primary level. The dropout rates at the primary level are low at just 2.7% but increase at the upper primary level to 8.17%, exceeding the state average.

Table 24-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	67.90	77.02	0.13
Male	85.40	89.65	0.05

Source: Census 2001, Census 2011(Provisional)

Table 24-7: Education Profile (2010-11)

Educational Statistics	Units in Thiruvarur	Units in Tamil Nadu
Primary	794	33,909
Upper primary	211	8,552
Secondary	128	4,436
Higher secondary	50	4,632
NER – Primary (%)	99.1	98
NER - Upper primary (%)	97.85	98
Dropout rate – Primary (%)	2.74	3.81
Dropout rate - Upper primary (%)	8.17	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 58,690, while enrolment in schools that had primary and upper primary classes was 58,657. Enrolment in upper primary schools was 291 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 23,551, while enrolment in schools with upper primary and secondary/ higher secondary classes was 39,015.

There is an engineering college and six arts and science colleges. There are just five polytechnics in the district. The combined capacity of all the ITIs and ITCs in the district is 1,869. The details of major ITIs in the district are provided in the appendix.

Table 24-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	1
Arts and sciences	6
Management	0
Medical	0
Dental	0
Nursing	0
Pharmacy	0
Other medical	0
Teacher training and education	0
Hospitality	0
Fashion technology	0
Polytechnics	5
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

24.5 Incremental Human Resource Availability

The current work force is estimated to be 5.26 lakh, which is estimated to grow to 5.94 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 33,000 and in 2017-22, the incremental availability is estimated to be 36,000.

Table 24-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	1,276	844	538	526		
2017	1,345	885	571	558	33	
2022	1,422	928	607	594		36

Source: Athena Research

Table 24-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	20	5	8	33
2017-22	18	5	13	36

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level.

24.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the unorganized sector and construction, mirroring state trends. BFSI will show moderate growth with the increase in financial penetration across the state. Increasing access to media is also reflected in the growth of the media and entertainment sector. Retail, healthcare, real estate and transportation and logistics are expected to see a moderate increase in human resource requirements. The human resource requirement in the agriculture sector is expected to decline by 37,000 in 2012-17 and 32,000 in 2017-22.

Table 24-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-67	-2	-12	**-81**	-59	-1	-11	**-71**
Automobile	0	0	0	**0**	0	0	0	**0**
Chemicals and Pharmaceuticals	0	0	0	**0**	0	0	0	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	0	0	0	**0**	0	0	0	**0**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**0**	0	0	0	**0**
Handlooms & Handicrafts	0	0	0	**0**	0	0	0	**0**
Leather	0	0	0	**0**	0	0	0	**0**
Textiles	0	0	0	**0**	0	0	0	**0**
BFSI	0	1	2	**2**	0	1	2	**3**
Construction	6	1	1	**8**	14	3	1	**18**
Education	0	0	0	**0**	0	0	0	**0**
Healthcare	0	0	0	**1**	0	0	0	**1**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	0	0	1	**1**	0	1	1	**2**
Organized Retail	1	0	1	**2**	2	0	1	**4**
Real Estate	0	0	0	**1**	0	0	1	**1**
Tourism & Travel	0	0	0	**0**	0	0	0	**0**
Transportation & Logistics	0	0	0	**1**	0	0	0	**1**
Unorganized (excluding Agriculture and Construction)	23	12	16	**51**	27	18	21	**66**
TOTAL	**-35**	**13**	**9**	**-14**	**-14**	**21**	**18**	**25**

Source: Athena Research

The long term growth sectors for Thiruvarur appear to be in the service sectors. The manufacturing sectors are small scale and often unregistered across traditional sectors such as food processing and textiles. The growth of the service sectors will depend on overall economic growth and the demand for support services.

24.7 Skill Gap

The largest skill gap is at the semi skilled level at 8,000 in 2012-17 and 16,000 in 2017-22. There is estimated to be an excess availability of human resources at the unskilled level due to the sharp fall in human resource requirements expected in the agriculture sector. At the skilled level, the gap is estimated to be 1,000 in 2012-17 and 5,000 in 2017-22, due to the moderate growth in skill intensive sectors.

Table 24-12: Skill Gap in 000s

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	-35	13	9	**-14**	-14	21	18	**25**
Incremental Human Resource Availability	20	5	8	**33**	18	5	13	**36**
Skill Gap	**-55**	**8**	**1**	**-46**	**-32**	**16**	**5**	**-11**

Note: Figures in parenthesis indicate excess supply

Source: Athena Research

Qualitative skill gaps

High outward migration

Unemployment is a major problem in the district. The low level of development restricts employment options in industries as well as agriculture. There is a lot of outward migration in the district. There is alarge outward migration both at the lower and higher skill levels. Unskilled and semi skilled workers tend migrate to big cities like Chennai, Bangalore and Hyderabad, and work in the construction sector, while the educated youth migrate to these cities in search of white collar jobs. Hence, most of the potentially productive population tends to move out of the district. There is very little inward migration as there are not many employment opportunities in the district.

Low emphasis on formal skill development

Lack of skilled development opportunities coupled with the lack of incentives to foster entrepreneurship is a major problem for the district. There is a lot of potential for the development of the district, mainly because the district's inhabitants are eager to start their own enterprises. However the skill infrastructure in the district is inadequate to cater to the qualitative needs of the local populace and the average skills levels in the district are very low. Lack of skilled development opportunities coupled with the lack of policy incentives to foster entrepreneurship is a major problem for the district.

High dependence on the unorganized sector

There are a large number of unorganised activities within the industrial sectors of the district. Workers employed in the sector are usually uneducated and unskilled and these workers primarily hail from the most remote parts of the district and drop out of the education system early. The lack of initiatives to skill the unorganized sector labourers coupled with lack of policy initiatives to reduce the size of the unorganized sector in the district has kept the skill levels of the district below average.

24.8 Youth Aspirations

Table 24-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	Retail, BFSI	Construction
	Low	Electronics, IT/ITES	Agriculture

Source: Athena Research

Negative disposition towards formal skill acquisition

Although there are a number of engineering and polytechnic graduates, only 2-6% of them are observed to be employable. Further, the youth who are averse to migrating seem to believe that there is no incentive to acquire skills since there are not many industrial jobs being created in the district. Those who are willing to migrate out of the district seem to feel that they have a better chance of getting a good job if they have an undergraduate or an engineering degree. These tendencies among the youth have created a negative disposition towards skill.

Cost of training deemed prohibitive

The district has a considerable number of polytechnics, but very few of them are set up or funded by the government. The cost of acquiring skills is considered a key barrier by the youth in the district. In the absence of attractive employment opportunities post graduation coupled with the low compensation for skill in and outside the district acts as a serious disincentive to skill acquisition.

24.9 Recommendations

24.9.1 State Government

Improve quality and access to basic education

The development of educational facilities is low in the district, making skill training challenging since the students are not familiar with basic concepts and are often unable to absorb the skill training imparted to them. Most of the students choose to drop out of school by the sixth or eighth grade, which further acts a restraint on any developmental activities proposed.

Action Plan

a. Expand and rehabilitate basic educational infrastructure in backward regions to improve access
b. Build strong teacher training institutions, with a greater focus on the improvement of pedagogical methods and provide continuous training for contractual teachers
c. Use campaigns to improve community awareness and involvement to ensure the sustainability, maintenance and good management of the school and ensure that children stay in school at least till the 10th

Increase the efficiency of employment exchanges

Employment exchanges continue to remain an important and necessary labour market institution. Despite the rising concerns of inefficiency across employment exchanges in the state, it continues to remain the main source of providing government jobs in most districts. Technology deficit, poor management coupled with the diminishing role of government in recruitment has led to the failure of employment exchanges in India. Nevertheless, there are a number of employment exchanges in the state of Tamil Nadu and they are situated in easily accessible locations, have decent infrastructure (though not properly maintained), and awareness of the exchange among candidates is high.

Action Plan:

a. Expand the functions performed by employment exchanges to include counselling, assessments, training and apprenticeships
b. Reform the governance and management structures of employment exchanges in the district through greater involvement of the private sector through the PPP mode
c. Identify performance targets and rank the performance of employment exchanges

Facilitate programs to encourage entrepreneurship

Lack of skill development opportunities coupled with the lack of incentives to foster entrepreneurship is a major problem in this district. Despite the enthusiasm among the district's inhabitants to start their own enterprises, currently there is not enough emphasis on grooming people to set up their own business or encourage entrepreneurship.

Action Plan:

a. Train the youth in multiple skills, with greater emphasis on sectors which can support local self employment
b. The Entrepreneurship Development Institute in the state must play a more proactive role in financing and regulating entrepreneurship programmes for youth in the district
c. Disburse seed capital to the youth based on a set of pre-determined criteria at a lower interest rate
d. Expand the voucher scheme to include multi-skilling and entrepreneurship programs

24.9.2 Industry

Industry norms on promotions for unskilled and semi-skilled workers based on experience and abilities

The vertical mobility of semi-skilled workers within an organization continues to remain limited. Currently there is no clear pay and career path for semi skilled workers in Industry. This is all the more visible in the case of unskilled workers who are predominantly recruited as contract labour.

Action Plan:

a. Restructure the pay scales of semi-skilled labour with a variable component to incentivize performance
b. Incentivize semi-skilled employees to acquire additional skills on the job and incentivize the same trough additional pay post completion of the course

c. Encourage unskilled to acquire skills on the job and certify them based on experience/abilities to encourage vertical mobility within the organization and greater portability across organizations.
d. Create a clear pay and career path for all semi-skilled employees and link promotions to pre-determined performance criteria

Provision of accommodation and other benefits to incentivise migration

The low wage rates coupled with the high cost of living in the state has remained a key barrier to intrastate migration. Youth graduating from vocational institutes prefer to remain in their home district and often enter the informal sector or remain employed/ underemployed owing to the high costs associated with migrating to other districts. Surveys with the youth in the district revealed the absence of accommodation facilities at affordable rates as being a critical factor preventing intra-state migration.

Action Plan:

a. Create accommodation facilities in close proximity to the area of work and allocate the same to migrant labour
b. Create a system of reimbursements, where the expenditure incurred on rents by the migrant employee is reimbursed on actuals.
c. Provide other key fringe benefits including health insurance

24.9.3 Training Providers

Improve the enrolment of girls

Surveys in the district indicate that a gender blind approach towards delivering training have not worked very well in the backward regions of the district. Most of these areas are seen to register a very low level of enrolment of girls, owing to hesitation by their families to send the girls to an institution for training. There is a clear need to introduce mechanisms to encourage people to send girls to the training centre.

Action Plan:

a. Deploy female trainers in training centres in the backward regions. Women trainers provide safety and protection for the girl students and are seen to give them the confidence and opportunity to follow their own paths
b. Undertake community outreach drives and hold interactions with parents on the benefits of skilling their girl child

Community engagement for student mobilization

Student mobilization may be strengthened through greater community engagement, particularly in rural areas for sectors such as construction.

Action Plan:

a. Provide incentives such as flexible course timings to encourage students to enroll in vocational training.
b. Collaborate with local NGOs to mobilize students for training programs.

c. Establish strong industry linkages to create a link between employment and training to raise interest in vocational training.

24.9.4 NSDC

Entrepreneurship workshops

Workshops may be conducted in the district to provide basic training and information for aspiring entrepreneurs.

Action Plan:

a. Collaborate with local NGOs and industry to mobilize students.
b. Impart basic training for entrepreneurship.
c. Provide guidance on sources of finance, government assistance and other resources that entrepreneurs may access.
d. Provide access to online resources for entrepreneurship information.

Community learning initiatives for women in backward areas

The need for skill development is felt most among the women in the district, who mostly are kept out of the formal education and training system and often are subject to greater economic and social repression. Skilling women workers engaged in informal labour is critical to their empowerment and transition into a formal system with better benefits. However, since most women are constrained by social factors from entering the formal training system, a set of community led initiatives must be designed to help skill women in the backward areas in the district.

Action Plan:

a. Design short training modules customized to suit the employment opportunities available for women in the district
b. Collaborate with local Self Help Groups or Community based organizations to deliver the training modules
c. Facilitate the creation of Community Learning Centres to co-ordinate the activities of the Self Help Groups and provide the required support in terms access to funding and placement for the trained women

25 Thoothukkudi

25.1 Overview

Historically known as the 'Pearl City', Thoothukkudi was accorded a district status in 1986, by carving it out of the erstwhile Tirunelveli district of Tamil Nadu. The district is situated in the south-eastern part of the state and is bordered by Virudhunagar and Ramanathapuram districts in the north, Tirunelveli district in the west, the Gulf of Mannar in the east and the Indian Ocean in the south. Administratively, the district is divided into 3 revenue divisions comprising 8 taluks, 41 revenue firkas, 480 revenue villages and 408 village panchayats.

Table 25-1: Basic Information (2010-11)

District Information	Thoothukkudi	Tamil Nadu
Number of inhabited villages	426	15,400
Area (Sq Km)	4,896	127,905
% of state area	3.83	100
Area rank	10	-
Revenue divisions	3	-
Taluks	8	-
Blocks	12	-
Corporation & municipalities	3	-
Town panchayats	19	-
Revenue villages	480	-
Panchayat villages	408	-

Source: District Statistical Handbook (2010-11)

25.2 Demographic Profile

Thoothukkudi constitutes about 2.5% of the state's population, while occupying 3.83% of the state's area, thereby making it sparsely populated. Compared to the state average, the district has a low annual population growth rate of 1.23%. Half of the district is urbanized, with 50% of the district's population residing in urban areas. Despite a relatively large working age population, the worker participation rate remains low at about 40%. Of the total workers, 24.73% are engaged as agricultural laborers. Agriculture is primarily confined to the rural areas of the district, which might explain the high income disparity observed between urban and rural population of the district. Generally too, the per capita incomes of the district are significantly lower than the state average, especially in the urban areas.

However, in terms of other development indicators, Thoothukkudi is ranked higher than most of the districts in Tamil Nadu. The district enjoys a healthy sex ratio at 1,024 females per 1,000 males. Its HDI and GDI indicators are amongst the highest in the state at 0.703 for both categories.

Table 25-2: Demographic Indicators (2011)

Population	Thoothukkudi	Tamil Nadu
Population	1,738,376	72,138,958
Share of state population (in %)	2	100
Population density (per sq. km.)	355.10	564
Urban population percentage	50.15	48.45
Total population annual growth rate (in %)	1.23	2
Urban population	871,806	34,949,729
Sex ratio (number of females per 1000 males)	1024	995

Source: Census 2011 (Provisional)

25.3 Economic Profile

Thoothukkudi has witnessed a steady rise in its GDP, contributing about 3% to the state GDP in 2009-10. The presence of the port has fuelled the growth of the district, making it an important hub for trading activities. The continued growth of the port suggests great potential for the economic development of the district.

Table 25-3: Per Capita Income (2011-12)

Human Development Indicators	Thoothukkudi	Tamil Nadu
Per capita urban income	52,800	100,600
Per capita rural income	35,000	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

25.3.1 Agriculture

Agriculture and allied activities play a substantial role in providing employment to the residents of the district. However, of late, an increasing number of people have started to work in the more productive and the better paying manufacturing and service oriented industries. Over 50% of the population is currently employed in secondary and tertiary sector activities.

Around 34.8% of the land area is under cereals. The majority of the land (37.5%) is under pulses. The district is also famous for condiments, chilli in particular, and this category occupies nearly 14% of the total sown area. Fruits and vegetables also account for about 11% of the total sown area. With respect to non food crops, the majority of the land is occupied by other cash crops. Cotton is the major crop grown in this category, followed by oil seeds with 16% and 11% of the area sown.

Yield levels for cereals and sugarcane are at least at par with the state level. The remaining crops all have lower yields than the state average, which indicate a potential for increased productivity in agriculture, particularly in pulses, cotton and oil seeds.

Table 25-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	52,844	34.87%
Pulses	56,967	37.59%
Condiments	21,137	13.95%
Fruits and vegetables	16,631	10.97%
Other	3,960	2.61%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	257	0.87%
Cotton	4,615	15.65%
Oil seeds	3,371	11.43%
Tobacco	0	0.00%
Other	21,251	72.05%

Source: Tamil Nadu Crop Report (2011-12)

Table 25-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield For Thoothukkudi	Yield for Tamil Nadu
Cereals	14,515	12,136
Pulses	2,061	2,763
Sugarcane	101	101
Condiments	8,366	32,440
Vegetables	84,390	164,422
Mango	4,795	4,795
Cotton	170	368
Tobacco	0	1,524
Oil seeds	10,651	16,484

Source: Tamil Nadu Crop Report (2011-12)

25.3.2 Industry

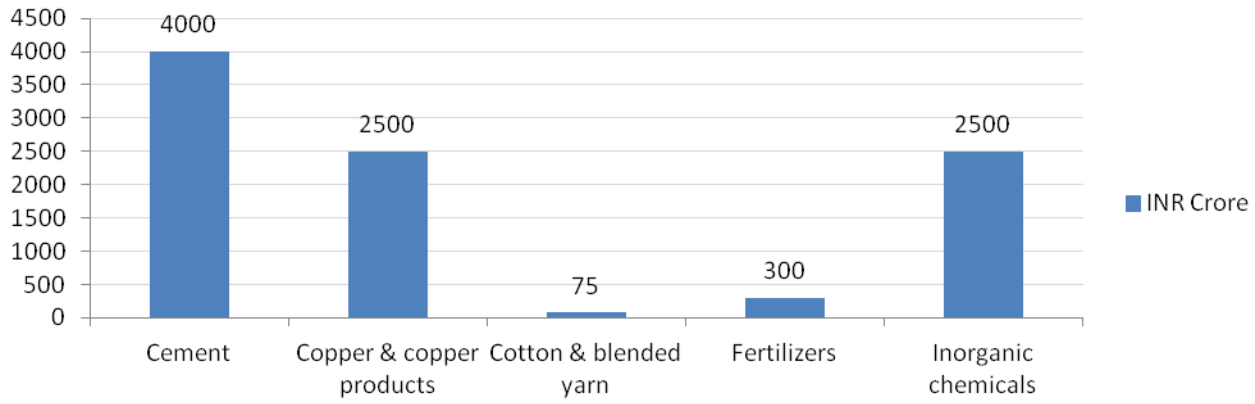
The district has witnessed a boom in the industrial sector over the past decade, with the sector employing 1.65 lakh people. The ample availability of minerals has led to the establishment of factories and units by heavy industries such as Sterlite and SPIC. The industrial development in the district is diverse – with textile units and match industries dotting the Kovilpatti belt.

There are 2,554 registered factories in the district which can be broken down into 14 large scale industries, 250 medium scale industries, 241 small scale industries and 1,141 cottage industries. These medium and small scale units include sub sectors such as textiles, food products, and automobiles, among others. These industries provide a considerable number of employment opportunities to the locals and contribute to the growth of the

district GDP. The various khadi and village industries too, promote self employment and produce output worth approximately INR 350 lakh.

The SIPCOT industrial park was recently established in Thoothukkudi, further enabling growth of the economy and providing ample potential for industrial development. The presence of the industrial park, along with a number of supporting infrastructural facilities has ensured that a considerable number of external investments are channeled into the district. Ultratech has made a major investment of INR 4000 crore in cements in the district. Construction activities worth INR 400 crore are also underway. Storage and distribution activities and other activities complementary to marine product processing are being undertaken at a cost of INR 11.5 crore. Chemical plants have major investments of INR 4910 crore in inorganic chemicals and LNG storage and distribution. Infrastructure developments in shipping amount to more than INR 6000 crore over the past five years. CMIE Capex data indicates that tourism is also being promoted in the form of the Tuticorin Marina Park project, at a cost of INR 60 crore. Transport and logistics activities account for investments of INR 5800 crore. The government is also making massive investments of more than INR 50,000 crore in power generation in the medium term.

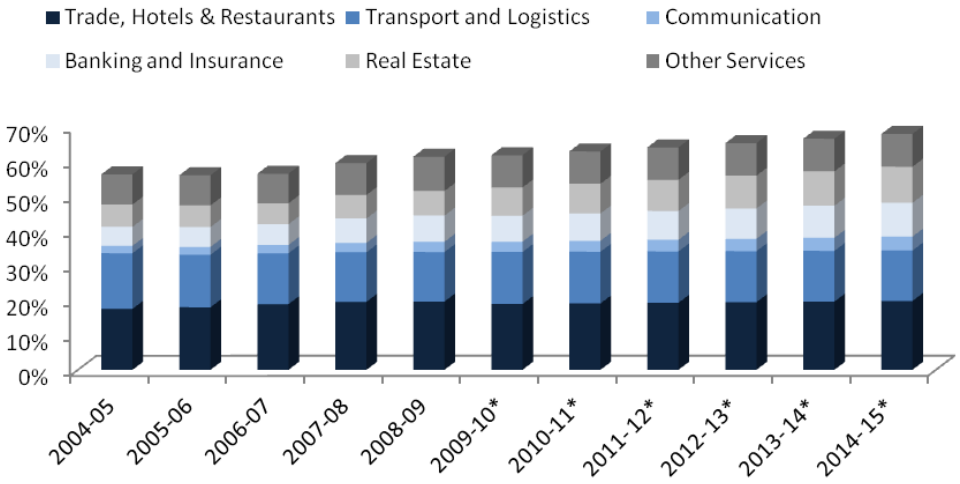
Figure 25.1: Investments in INR Crore



Source: Capex, CMIE (2011-12)

25.3.3 Services

Figure 25.2: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The recent initiatives and schemes by the state government to develop the port infrastructure in the district has provided a boost to trade and other service sectors. The service sector in the district is expected to contribute to 68% of the district output in 2014-15 and is driven by the growth in real estate and banking and insurance sectors, which are jointly expected to contribute to one fifth of the district GDP in 2014-15.

The organized services sector employs 2.27 lakh people. The establishment of Thoothukkodi port, coupled with the initiatives taken over the years by V.O. Chidambaram Port Trust, has led to the flourishing of trade and commerce services in the district. As the port is operational all year, it has witnessed a remarkable compounded annual growth rate of 8% in 1998-2007, while it broke all records in 2007-08 by growing at a rate of 19.3%. Further, the port's location at the southern tip of India and its proximity to the East-West trade route makes it an ideal container hub port for all major Indian companies shipping their cargo to foreign destinations. The port currently handles a traffic of about 4,50,000 Twenty feet Equivalent Units (TEUs) which equals approximately 8.5 crore tons of cargo. Further expansion plans to increase the tonnages handled at the port from a current 8.5 crore to 13 crore tons by 2025 are in their implementation stages.

Other infrastructure facilities in the district too, are well developed. There are a total of 224 bank branches and 309 health care centres across the district. The district is also well connected by road and railway networks. There are over 2,000 kilometers of highways, and 125 kilometers of railway lines enabling easy mobility across the district.

Apart from the flourishing trade and commerce industry, the district also witnesses a considerable amount of tourist activity throughout the year. The district houses a number of famous temples, churches and mosques – Our Lady of Snows Basilica, a church in Thoothukkodi built in the 16th century, in particular, attracts many pilgrim tourists throughout the year. The many beaches and islands across the coastline of the district also prove to be worthy attractions, bringing in a steady source of income for the hospitality industry. The combination of Thoothukkodi port and the various tourist places offer great potential for developing Thoothukkodi port as a cruise port. The port has been identified by the government of India as one of the five ports for developing

cruise tourism. Investments in cruise tourism, coupled with the availability of energy and transport infrastructure, may lead to a rapid growth of the hospitality industry within the district in the future.

25.4 State of Education

The district enjoys a high literacy rate, much higher the state average at 87%. The male and female literacy rates, too, have witnessed a steady rise over the past decade. Much like most of the other districts in the state, female literacy rates in Thoothukkudi saw a dramatic rise compared to the male literacy rate, in the last 10 years – increasing from 75.1% in 2001 to 81.77% in 2011. This steady development is also reflected in the district's high HDI and GDI figures.

The large number of schooling institutions has helped the district achieve high literacy rates. There are 1,731 schools, with primary schools forming the majority. The Net Enrolment Ratio is almost 100% for primary schools, while there's a slight drop in the enrolment figures for upper primary schools. The dropout rate too, is slightly higher than the state average for upper primary schools, at 7.7%. The lower completion rate for primary schools follows the trend observed in most of the other districts of the state. However, primary research indicates that the district is fairly forward looking and progressive as compared to other districts in the state – the locals are enterprising and place high value on acquiring useful skills through education.

Table 25-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	58.90	68.82	0.17
Male	79.80	84.91	0.06

Source: Census 2001, Census 2011(Provisional)

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 96,412, while enrolment in schools that had primary and upper primary classes was 69,616. Enrolment in upper primary schools was 339 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 33,332, while enrolment in schools with upper primary and secondary/ higher secondary classes was 53,252.

Table 25-7: Education Profile (2010-11)

Educational Statistics	Units in Thoothukkudi	Units in Tamil Nadu
Primary	1158	33,909
Upper primary	336	8,552
Secondary	117	4,436
Higher secondary	158	4,632
NER - Primary		64,20,747
NER - Upper primary (%)	99.35	98
Dropout rate – Primary (%)	97.28	98
Dropout rate - Upper primary (%)	3.33	3.81
Dropout rate - Upper primary (%)	7.7	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

The district also offers a variety of choices for higher education, in line with the aspirations of the district's inhabitants. In addition to the engineering colleges, there are 15 arts & science colleges, 12 colleges for professional education, 10 colleges for special education and 19 Teacher Training Institutes. Further, technical education institutes have also been set up for individuals desiring vocational education that would be more in sync with their professions. Most of these institutions are privately funded, with only one government Industrial Training Institute in the district. The combined capacity of all the ITIs and ITCs in the district is 420.

Table 25-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	6
Arts and sciences	0
Management	0
Medical	0
Dental	0
Nursing	0
Pharmacy	0
Other medical	0
Teacher training and education	0
Hospitality	0
Fashion technology	0
Polytechnics	4
Agriculture	1

Source: UGC, AICTE, MHRD Database (2010-11)

25.5 Incremental Human Resource Availability

The current work force is estimated to be 7.22 lakh, which is estimated to grow to 8.41 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 57,000 and in 2017-22, the incremental availability is estimated to be 62,000.

Table 25-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	1,752	1,159	739	722		
2017	1,870	1,230	796	778	57	
2022	2,001	1,307	859	841		62

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level.

Table 25-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	31	6	19	57
2017-22	24	5	33	62

Source: Athena Research

25.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the unorganized sector, construction, textiles, tourism and travel and food processing. The human resource requirement in the agriculture sector is expected to decline by 43,000 in 2012-17 and 37,000 in 2017-22.

Table 25-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-35	-1	-6	**-43**	-31	-1	-6	**-37**
Automobile	1	1	0	**2**	1	2	1	**3**
Chemicals and Pharmaceuticals	1	2	2	**0**	1	2	2	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	2	0	0	**3**	3	0	1	**4**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**0**	0	0	0	**0**
Handlooms & Handicrafts	0	0	0	**0**	0	0	0	**0**
Leather	1	0	0	**1**	1	0	0	**1**
Textiles	5	1	1	**7**	7	1	2	**10**
BFSI	0	1	3	**4**	0	2	5	**6**
Construction	19	4	2	**24**	41	8	4	**53**
Education	0	0	1	**1**	0	0	1	**1**
Healthcare	0	0	1	**1**	0	0	1	**1**
IT and ITES	0	0	3	**3**	0	0	4	**5**
Media & Entertainment	0	0	1	**2**	0	1	2	**3**
Organized Retail	3	1	2	**6**	6	1	4	**11**
Real Estate	0	0	1	**1**	0	0	1	**1**
Tourism & Travel	4	15	14	**33**	7	27	24	**57**
Transportation & Logistics	4	1	1	**6**	5	1	1	**7**
Unorganized (excluding Agriculture and Construction)	32	16	22	**70**	37	24	29	**90**
TOTAL	**37**	**42**	**48**	**122**	**78**	**69**	**73**	**216**

Source: Athena Research

The increase in human resource requirements in sectors such as organized retail, transportation and logistics and tourism and travel is expected to be driven by the growth of other industrial sectors. Sectors such as IT/ITES, media and entertainment and automobile are expected to show some growth in human resource requirements. Healthcare and education show very modest increases in human resource requirements.

25.7 Skill Gap

The largest skill gap is at the semi skilled level at 36,000 in 2012-17 and 64,000 in 2017-22. The skill gap at the unskilled level is low in the initial period due to unskilled workers exiting from the agriculture sector. However, with the declining crude birth rate, gradual stabilization of human resource requirements in the agriculture sector, increasing preference for skilling and the growth of industries such as textiles, leather and food processing, which employ a large proportion of workers at the lower skill levels, there is expected to be a significant skill gap across levels by 2017-22. At the skilled level, the gap is estimated to be 28,000 in 2012-17 and 40,000 in 2017-22.

Table 25-12: Skill Gap

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	37	42	48	**122**	78	69	73	**216**
Incremental Human Resource Availability	31	6	19	**57**	24	5	33	**62**
Skill Gap	**5**	**36**	**28**	**65**	**54**	**64**	**40**	**154**

Source: Athena Research

Qualitative Skill Gaps

Inadequate focus on multi-skilling initiatives

The locals are very enterprising, and display a high propensity towatds self-employment. However most of them seem to lack the skills required to do so. In the absence of sufficient encouragement and knowledge, most of them choose to stay away from such activities. Inadequate emphasis on providing entrepreneurship training is seen to reduce the motivation among people to acquire specialized skills or become multi-skilled. If educational opportunities match enterprise requirements, the skills acquired are more likely to be applied to productive activities.

Weak linkage between training institutes and industry

Despite the burgeoning industrial sector in the district, most of the ITIs and polytechnics that operate in thoothukudi have almost little or no interaction with the industry. The nature of skills delivered is often deemed to be irrelevant or of little relevance to specialized industrial requirements and the placement success of such institutes have remained low, further dampening their appeal among the youth.

25.8 Youth Aspirations

Table 25-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	Tourism and Travel, BFSI	Textiles
	Low	Healthcare, Education	Handloom

Source: Athena Research

Preference for formal education

Given the rising levels of industrialization and modernization, education levels are relatively higher than most of the other districts in the state. Literacy levels are very high, and a lot of people opt to continue with higher education. Engineering is a popular course, and a very large proportion of the youth aspire to obtain admission in a good engineering college. The youth also display a strong interest in sectors such as IT, ITES, engineering goods and automobile and other high technology traditional sectors like chemicals, but show low interest in sectors like handlooms, salt and agriculture.

Focussed group discussion with various students from the district revealed that most students do not opt for the vocational route owing to the low potential for employment post graduation and the low compensation for skills.

Further the vocational training infrastructure in the district is quite poor. Consequently, few people enroll in vocational education and there is a general perception, among the youth, that the infrastructure in existing training institutes is obsolete or not matched to new industry requirements.

25.9 Recommendations

25.9.1 State Government

Accreditation

A large number of private training providers are operating in the district, which creates challenges in terms of standardization. Students are unable to distinguish genuine training providers from unscrupulous players.

Action Plan:

a. In line with state level initiatives, undertake the registration and accreditation of all training providers through the District Skill Development Council.
b. Establish quality norms in terms of minimum infrastructure, equipment, capacity utilization and placements.
c. Make information regarding all training providers available online.
d. Undertake an annual survey skill training providers to ensure adherence to quality norms.

Up-gradation and Standardization of course content

Owing to the absence of a unified certification system for all courses and diplomas, multiple certifications with different levels of rigour, depth and quality are seen to coexist in the district. Despite the presence of a large

number of skill training institutes, the quality of candidates graduating is seen to vary significantly. The diversity in content within the training system has resulted in greater variations in the levels and standards of trades offered and have led to courses with the same nomenclature having different eligibility criteria. In addition there are overlaps in the syllabus of the courses leading to different qualifications.

Action Plan:

a. Register all the training providers in the district through the District Skill Development Council
b. Update the list of trades being offered at vocational institutes in the district with a greater focus on service sector trades for automobile, textiles, construction and transportation and logistics
c. Develop evaluation guidelines for both theory and practicals, including Question Paper Design and Blue Print with relevant SSC approval
d. Develop study materials with a greater emphasis on the Practical component – encourage the creation of a skills manual for every trade

25.9.2 Industry

Institutionalized wage escalation for lower skill levels

People with low skills often have stagnant careers, working at the same level throughout the period of their employment with no provision for promotions or career growth. In order to make blue collar jobs desirable, it is essential to introduce vertical mobility by institutionalizing wage escalation to reflect skill acquisition and experience, particularly for growing labor-intensive sectors such as textiles and construction.

Action Plan:

a. Industry associations can facilitate the adoption of skill levels defined by the relevant SSCs and benchmark wages through industry consensus
b. The industry must create competency standards and performance evaluation parameters, on the basis of which employees at different skill levels will be regularly apprised
c. Employees at different skill levels should be aware of the career trajectory they are likely to follow
d. The acquisition of skill or experience linked with a demonstrable improvement in performance must be rewarded with higher compensation

Participate in train the trainer programs

The linkage between industry and training institutes continue to remain weak, with the industry playing little or no role in the development of curriculum and pedagogy. As a consequence the curriculum delivered at most vocational training institutes remains outdated or of little relevance to industry requirements. As a consequence industries are increasingly faced with the prospect of hiring graduated who are not job-ready, resulting in large re-training costs. This is especially true of ITIs.

Action Plan:

a. Collaborate with ITIs/training institutes in the region and introduce industry relevant trades or courses
b. Incentivize greater emphasis on the practical component through paid internships for students during their course

c. Forge relationships with training institutes for the purpose of organizing meaningful training programmes that can cater for on-job-training and off-job training
d. Organize workshops for faculty members, with a focus on equipment and technical information needed to develop new skills of relevance to industry
e. Participate in the setting up of training centres through the PPP mode for standardization, regulation and promotion of vocational and skill education

25.9.3 Training Providers

Introduction of a dual apprenticeship model

Apprenticeship is designed to help students acquire the much required practical experience and remains the key channel of connecting them with industry. In the district, apprenticeship has remained a nominal feature, with the students acquiring little or practical knowledge post completion of their course period. Further students who are employed as apprentices by the industry are rarely absorbed into the firm as full time employees, owing to the lack of practical experience built into their course curriculum and the high costs associated with training them on the job. Thus there is an urgent need to strengthen the practical component of training by introducing a dual apprenticeship model, wherein the student is expected to acquire industry experience both during the course and after completion.

Action Plan:

a. Introduce a two month internship with local industries, embedded as a part of the course curriculum
b. Enter into an MOU with local industries to ensure a continuous supply of trainees to industries and a strong placement mechanism
c. Create a system to track the status of apprentices employed from the institute

Upgrade and standardize curriculum

Skill development activities in India continue to remain largely unregulated, leading to huge qualitative gaps in the training provided and industry demand. Thus there is an urgent need to create awareness among training providers to upgrade their curriculum and align themselves with prescribed national occupational standards. When implemented this will help improve the comparability of trades and strengthen the marketability of courses.

Action Plan:

a. Map the relevance of existing curriculum to local and national demand through industry surveys
b. Identify gaps and upgrade the content and pedagogy as per the norms prescribed by Sector Skill Councils (SSCs)
c. Evaluate based on competency levels in performing specific tasks with greater emphasis on practical learning
d. Incorporate a review of basic concepts in curriculum design
e. Build partnerships with government and industry to set up flexible payment schemes like skill vouchers in traditional sectors such as textiles

25.9.4 NSDC

Formal certification of informally acquired skills

A large number of the people in the district are seen to be engaged in the informal sector, whose skill levels are either native or are acquired informally. In the absence of formally certified skills these workers tend to earn meager wages. The formal vocational system is not accessible to these people as they often do not meet the basic education criteria prescribed

Action Plan:

a. Build a database of existing types of skills provided in the informal sector and design targeted training interventions to up-skill and certify those engaged in the informal sector
b. Design special training courses (e.g. fast track evening courses), as pilot projects, to enhance the skills of participants in the informal sector by providing them formal training using the existing vocational training infrastructure
c. Popularize the Recognition of Prior Learning (RPL) system in existing vocational centres. RPL allows for individuals to gain accreditation for their native skills and access formal retraining opportunities even if they do not fulfil basic educational criteria
d. Launch community-based training programmes, which provide demand driven and customized training programmes to cater to the needs of those in the district

Capacity Creation

Textiles, construction and tourism and travel are likely to see the largest increase in incremental human resource requirements at the semi skilled level in Thoothukkudi. Skill training initiatives must have a strong focus on quality and relevance to industry to ensure that the existing qualitative gap is not further exacerbated.

a. Initiatives for manufacturing sectors such as textiles should be encouraged to follow the dual apprenticeship system to ensure familiarity with the machinery, rationalized job expectations and practical application of training imparted in the classroom
b. Hospitality initiatives may be set up in more developed blocks of the district, partnering with large industry players to ensure adherence to quality requirements
c. Training initiatives for the construction sector must focus on up-skilling existing workers in partnership with industry to ensure applicability of skills and a commensurate increase in wages for the acquisition of skills

26 Tiruchirappalli

26.1 Overview

Tiruchirappalli is located in the centre of Tamil Nadu and is completely landlocked. It is surrounded by Namakkal and Salem in the north, Perambalur, Ariyalur and Thanjavur in the east, Pudukkottai in the south and Karur in the west. It is medium-sized in area. The district is divided into 3 revenue divisions, 9 taluks and 14 blocks. There are 4 corporations, 17 town panchayats, 507 revenue villages and 408 panchayat villages.

Table 26-1: Basic Information (2010-11)

District Information	Tiruchirappalli	Tamil Nadu
Number of inhabited villages	439	15,400
Area (Sq Km)	3,720	127,905
% of state area	2.91	100
Area rank	19	-
Revenue divisions	3	-
Taluks	9	-
Blocks	14	-
Corporation & municipalities	4	-
Town panchayats	17	-
Revenue villages	507	-
Panchayat Villages	408	-

Source: District Statistical Handbook (2010-11)

26.2 Demographic Profile

The district constitutes 4% of the state population, making it one of the most populous districts in the state. The population is also densely distributed at over 729 people per square kilometer. The population growth rate is lower than the state average at 1.2% annually, which suggests a stabilization of demographics in the future. The sex ratio is significantly higher than the state average at 1010 females per 1000 males. The district is highly urbanized with over 49% of the population falling under the urban category. Agricultural workers form an extremely small fraction of the workforce at 3.54%. Almost 63% of the population is in the working age group and worker participation rates are slightly above the state average at 39.23%.

Table 26-2: Demographic Indicators (2011)

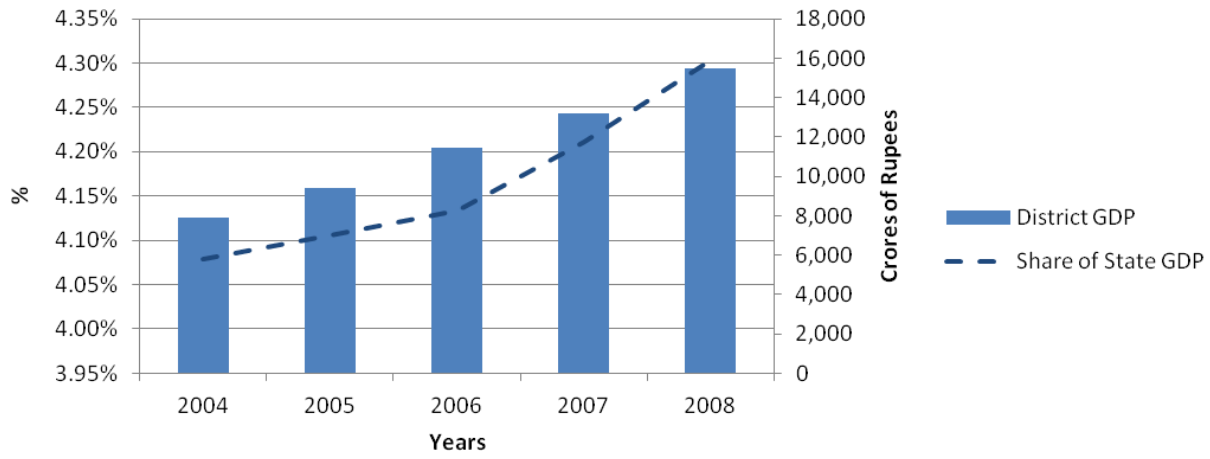
Population	Tiruchirappalli	Tamil Nadu
Population	2,713,858	72,138,958
Share of state population (in %)	4	100
Population density (per sq. km.)	729.55	564
Urban population percentage	49.26	48.45
Total population annual growth rate (in %)	1.2	2
Urban population	1,336,849	34,949,729
Sex ratio (number of females per 1000 males)	1013	995

Source: Census 2011 (Provisional)

26.3 Economic Profile

The district contribution to the state GDP has been steadily increasing from 4.07% to about 4.30% in 2008-09.The district is highly developed with high per capita incomes. Urban and rural incomes are significantly higher than the state average, but urban rural disparity is high, with urban incomes 136% of rural incomes. Human development indicators are higher than state averages at 0.671 for both HDI and GDI respectively.

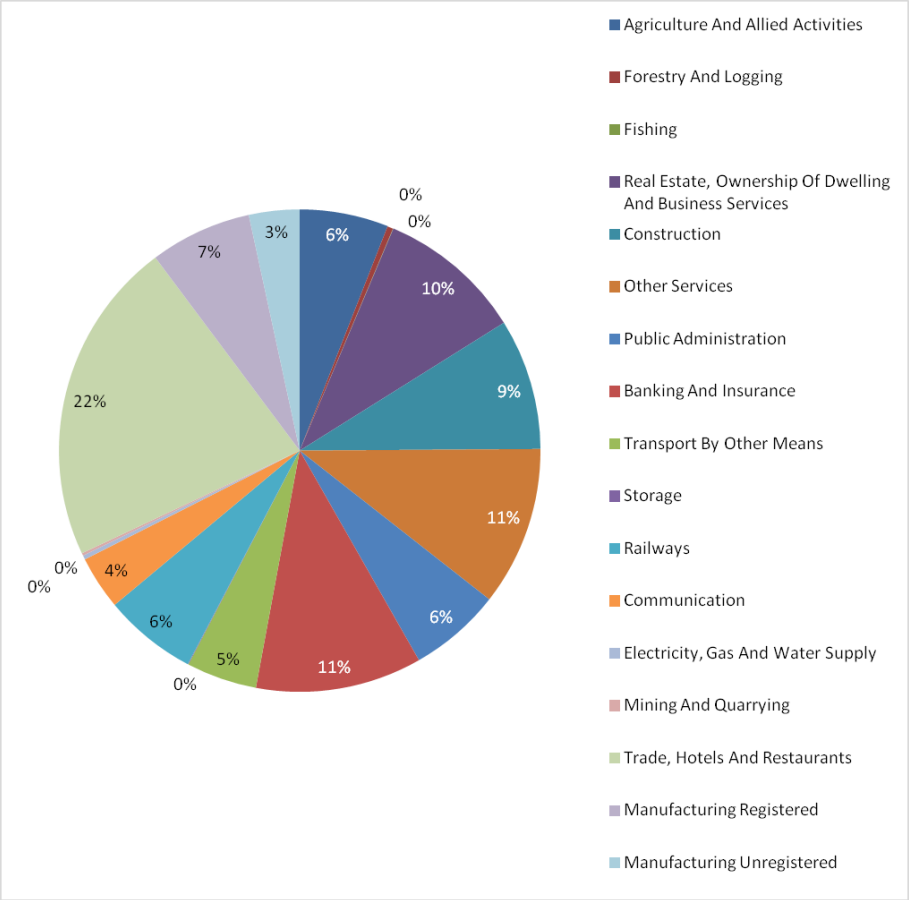
Figure 26.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Trade, hotels and restaurants accounted for 22% of the district GDP, followed by banking services at 11%. Agriculture accounts for 6%. Manufacturing accounts for just 10%, of which 3% is unregistered manufacturing. Other services, real estate and construction form major contributors to the state GDP.

Figure 26.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 26-3: Per Capita Income (2011-12)

Human Development Indicators	Tiruchirappalli	Tamil Nadu
Per capita urban income	111,400	100,600
Per capita rural income	47,200	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

26.3.1 Agriculture

At 42%, the majority of the labor force is engaged in agriculture and allied activities. The household industry accounts for only about 3.45% of the worker population. Almost 42% of the worker population is engaged in other economic activity. Major crops sown include paddy, millets, cotton, gingelly, groundnut, sugarcane and pulses.

Table 26-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	109,310	71.27%
Pulses	8,979	5.85%
Condiments	4,246	2.77%
Fruits and vegetables	24,531	15.99%
Other	6,301	4.11%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	6,232	15.92%
Cotton	7,156	18.28%
Oil seeds	14,458	36.94%
Tobacco	0	0.00%
Other	11,298	28.86%
Total Area under Food Crops	153,367	79.67%
Total Area under Non Food- Crops	**39,144**	**20.33%**

Source: Tamil Nadu Crop Report (2011-12)

Around 79% of the total sown area is under food crops. About 71% of this sown area is under cereals, 5.8% under pulses and 16% under fruits and vegetables. Non food crops include sugarcane, cotton, and oil seeds. Nearly 20% of the total sown area is under non-food crops. Almost 15% of this area goes to sugarcane, 18% is under cotton while oil seeds have a share of 36% of the remaining sown area. Yield is higher than the state for all crops with the exception of condiments and vegetables.

Table 26-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield for Tiruchirappalli	Yield for Tamil Nadu
Cereals	13,511	12,136
Pulses	3,074	2,763
Sugarcane	113	101
Condiments	9,980	32,440
Vegetables	108,563	164,422
Mango	5,963	4,795
Cotton	587	368
Tobacco	0	1,524
Oil seeds	24,986	16,484

Source: Tamil Nadu Crop Report (2011-12)

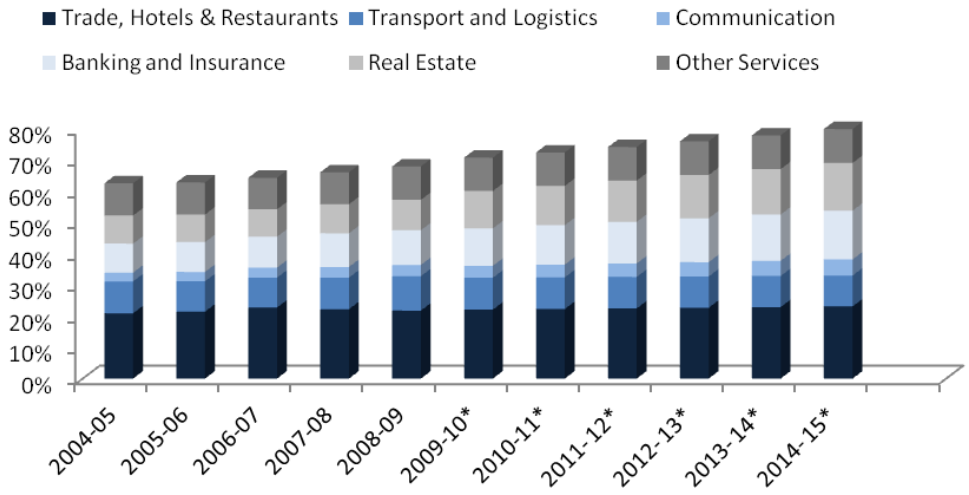
26.3.2 Industry

As the district has rich mineral reserves, a number of metal processing and manufacturing companies have set up their units in Tiruchirappalli. The industry sector employs approximately 1.07 lakh people. The district is characterized by some of the more prominent steel, metal alloy and defense equipment making companies such as BHEL, HAPP and OFT. The district also houses a few sugar and rice mills that take advantage of the availability of raw material locally, thereby reducing their costs of production. These large and medium scale units are housed in 9 industrial estates and provide employment to over 42,600 people.

The local government, while creating a conducive environment to attract large scale industries, has also provided a number of incentives for the development of small and micro scale units. A considerable number of industrial estates have been established which are conducive for the growth of these units. Currently, the small and micro scale units employ more than one lakh workers and generate an annual turnover of INR 54,085 lakh.

26.3.3 Services

Figure 26.3: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

Tiruchirappalli alias Trichy, is among the most developed districts in the state and has a well developed service sector, which is expected to contribute to 80% of the district GDP in 2014-15. Like the other forward looking districts, Trichy is also witnessing a real estate boom, with the real estate sector set to contribute to almost 15% of GDDP in 2014-15*

The organized services sector employs over 4.35 lakh people. Tiruchirappalli houses a number of temples and religious shrines, with deep historical significance. The cultural history of the district has proven to be a major attraction for a number of domestic and foreign tourists over the year. With the exception of slight dips in domestic and foreign tourism in 2002 and 2001 respectively, the overall tourism growth rates of the district have been on a rising trajectory, funnelling the development of the hospitality sector.

The district is also well developed with respect to transport infrastructure facilities. There is an extensive road network running through the district, with over 400 kilometers of state and national highways and almost 4000 kilometers of district roads. There are at least 10 private banks and 30 cooperative banks in the district. Additionally, 14 railway stations service 160.59 kilometers of track lines.

26.4 State of Education

The literacy rate is significantly higher than the state average at 84%. Male and female literacy both rose in the period 2001-2011 from 86.6% and 69.3% to 90% and 77.24% respectively. Both male and female literacy are at relatively high levels and the growth in both figures is closer than in most other districts. The schooling network is quite robust; the district has 3% of all schools in the state and has a healthy distribution of the same. NERs are quite good relative to the state, at 99% and 98.15% for primary and upper primary respectively.

Table 26-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	69.30	77.24	0.11
Male	86.60	90.00	0.04

Source: Census 2001, Census 2011(Provisional)

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 1,25,846, while enrolment in schools that had primary and upper primary classes was 86,926. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 84,806, while enrolment in schools with upper primary and secondary/ higher secondary classes was 81,924.

Table 26-7: Education Profile (2010-11)

Educational Statistics	Units in Tiruchirappalli	Units in Tamil Nadu
Primary	1159	33,909
Upper primary	367	8,552
Secondary	179	4,436
Higher secondary	194	4,632
NER – Primary (%)	99.1	98
NER - Upper primary (%)	98.15	98
Dropout rate – Primary (%)	3.94	3.81
Dropout rate - Upper primary (%)	7.69	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

Tiruchirappalli has 18 engineering colleges, 19 arts and science colleges and 3 management colleges. There is a medical college, a pharmacy college and one other medical college. There are four hospitality colleges, three agricultural colleges and seven polytechnics.

Table 26-8: Education Profile (2010-11)

Field	No. of Colleges
Engineering	18
Arts and sciences	19
Management	3
Medical	1
Dental	0
Nursing	0
Pharmacy	1
Other medical	1
Teacher training and education	0
Hospitality	4
Fashion technology	0
Polytechnics	7
Agriculture	3

Source: UGC, AICTE, MHRD Database (2010-11)

26.5 Incremental Human Resource Availability

The current work force is estimated to be 11.28 lakh, which is estimated to grow to 13.44 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 1.02 lakh and in 2017-22, the incremental availability is estimated to be 1.13 lakh.

Table 26-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	2,739	1,811	1,156	1,128		
2017	2,950	1,941	1,259	1,231	102	
2022	3,184	2,081	1,373	1,344		113

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level.

Table 26-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	31	13	58	102
2017-22	56	16	41	113

Source: Athena Research

26.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the unorganized sector, construction, tourism and travel, organized retail, transportation and logistics and IT/ITES. The human resource requirement in the agriculture sector is expected to decline by 43,000 in 2012-17 and 37,000 in 2017-22.

Table 26-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-35	-1	-6	**-43**	-31	-1	-6	**-37**
Automobile	1	1	0	**3**	2	2	1	**5**
Chemicals and Pharmaceuticals	1	1	1	**0**	0	1	1	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	2	0	0	**3**	3	0	1	**4**
Furniture	1	0	0	**1**	1	0	0	**1**
Gems & Jewellery	0	0	0	**0**	0	0	0	**1**
Handlooms & Handicrafts	0	0	0	**0**	0	0	0	**0**
Leather	1	0	0	**2**	1	1	0	**2**
Textiles	6	1	1	**8**	8	2	2	**12**
BFSI	0	2	7	**9**	0	3	10	**13**
Construction	32	6	3	**41**	70	13	6	**89**
Education	0	0	3	**3**	0	0	4	**4**
Healthcare	0	1	2	**4**	0	1	2	**4**
IT and ITES	0	0	6	**6**	0	1	8	**8**
Media & Entertainment	0	1	3	**5**	1	3	5	**8**
Organized Retail	5	1	4	**10**	9	2	6	**17**
Real Estate	0	0	1	**2**	0	0	2	**3**
Tourism & Travel	6	21	19	**45**	9	36	32	**77**
Transportation & Logistics	5	1	1	**7**	5	1	1	**7**
Unorganized (excluding Agriculture and Construction)	50	25	34	**109**	58	38	45	**141**
TOTAL	**74**	**63**	**80**	**214**	**137**	**104**	**120**	**359**

Source: Athena Research

The growth of human resource requirements in Tiruchirappalli is primarily driven by the service sectors. Education, health, media and entertainment and IT/ITES are expected to show strong growth relative to other similar districts. Among the manufacturing sectors, auto components, food processing, furniture and leather are expected to experience moderate growth over the next decade.

26.7 Skill Gap

The largest skill gap is at the semi skilled level at 50,000 in 2012-17 and 88,000 in 2017-22. There is a high preference for formal skill acquisition, particularly engineering, which is likely to create a gap at the lower skill levels (which are included in the unskilled category since it refers to all those who have less than 10^{th} + 3 years of education). With the growth and gradual formalization of the district economy, there will be a gradual shift towards higher skills, which will create a gap at the skilled level as well, in part due to the falling crude birth rate and the outward migration of the highly skilled workforce. However, the gap at the unskilled level will persist, indicating the aversion to acquiring lower level skills in the district.

Table 26-12: Skill Gap in 000s

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	74	63	80	**214**	137	104	120	**359**
Incremental Human Resource Availability	31	13	58	**102**	56	16	41	**113**
Skill Gap	**42**	**50**	**22**	**112**	**81**	**88**	**79**	**246**

Source: Athena Research

Qualitative Skill Gaps

Lack of access to skilling opportunities among rural youth

There are a few industrial training centres in Trichy. However, these institutes are situated in relatively urban areas, near industrial units, which restrict geographical access for many of the rural inhabitants. These training centres enjoy some amount of industry linkages and generate a number of jobs for those enrolled in the institute. However, these courses continue to be popular amongst the urban residents of the district and very few people from the rural areas have enrol in these courses, owing to lack of access.

Lack of entrepreneurial zeal

A lack of entrepreneurial zeal is a social impediment to skilling in the district. Primary research within the district revealed that people in the district prefer to be employed in industries, as opposed to agriculture and/or other self employment opportunities. Most of the educated people choose to migrate elsewhere, while the district in-turn houses migrants from other districts who come in to seek work as shop floor workers in the various factories of the district, for short periods of time

26.8 Youth Aspirations

Table 26-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	IT/ITES, BFSI	Textiles
	Low	Electronics, Healthcare	Agriculture

Source: Athena Research

Low dignity associated with blue collar jobs

There are quite a few industries in the district. BHEL is one of the bigger industries in Trichy. However, most of these industries are facing labour shortages as most of the people aren't willing to take up blue collar jobs. Furthermore, people are unwilling to travel to the factories and are dissatisfied with the wage level. Labour mobilization amongst unskilled and low skilled workers is low and is seen as a major challenge by employers.

Lack of guidance regarding skill development

Education levels are moderate. People in and around the urban pockets are aware of the benefits of a good education, and therefore pursue educational opportunities offered to them. However the youth in the relatively rural areas are unaware and unwilling to spend either time or money on education or skilling.

The differences in tendencies among the rural and urban youth may partly be traced to the difference in access to information on the various vocational courses available and its associated market opportunities. The presence of a counselling mechanism to guide the rural youth on the opportunities associated with opting for vocational streams may be an effective way of improving enrolments from the rural youth.

Lack of horizontal mobility between formal and vocational courses

The current formal education system provides limited options for vocational training, while vocational training systems have limited options involving mathematics and language learning. Student respondent seem to believe that this lack of options makes it very difficult for them to acquire skills that are relevant to the industry and leaves those enrolled in vocational training with limited soft skills. Students desire more than a semi-professional education and see the lack of mobility as a serious constraint to this aspiration.

26.9 Recommendations

26.9.1 State Government

Accreditation

A large number of private training providers are operating in the district, which creates challenges in terms of standardization. Students are unable to distinguish genuine training providers from unscrupulous players.

Action Plan:

a. In line with state level initiatives, undertake the registration and accreditation of all training providers through the District Skill Development Council.
b. Establish quality norms in terms of minimum infrastructure, equipment, capacity utilization and placements.
c. Make information regarding all training providers available online.
d. Undertake an annual survey skill training providers to ensure adherence to quality norms.

Promote greater interaction between formal and vocational education streams

The failure of vocational education courses at various levels to attract a substantial number of students has been attributed to the inability of these courses to provide employable skills, vertical mobility and technical competencies in terms of relevance and quality. Further, due to the changing nature of work and employment, individuals now look for more flexible and multi-skilling learning opportunities for mobility across employment sectors and geographic locations. In order to ensure this, vertical mobility options must be provided to the vocational graduates through benchmarking of such diplomas with formal education.

Action Plan

a. Inclusion of basic subjects covered in degree courses in vocational training courses to allow transition from vocational to formal education, should the student desire to make such a change.
b. Providing exposure on vocational education at the 10+2 level through presentations and discussions with school students to position skill training as an alternative to formal education.
c. Benchmarking vocational education diplomas and certificates with specific levels of formal educational attainment, similar to professional courses to make it possible for students to pursue further formal education, if they so desire.
d. Set up a vocational university or community resource centres to provide students with opportunities to pursue vocational degrees and advanced skills.

26.9.2 Industry

Skilling through Partnerships with Training Providers

Traditional high growth industries like textiles will maintain high levels of efficiency, but are expected to substitute unskilled workers with semi-skilled or skilled workers. High growth industries like construction will also witness an increase in human resource requirements. It is recommended that these industries build partnerships with schools and training providers to correctly align the skills of their future potential workforce. The lack of adequate information on industry requirements is contributing to the low interest in vocational training.

Action Plan:

a. Promote the creation of a central database which matches information on skill levels to compensation and presents a list of potential employers in the state for a certain skill type – this may be taken by industry associations in the state
b. Participate in campus recruitments at vocational training institutes in the vicinity to establish a strong connection between employment and skill acquisition
c. Provide inputs on the curriculum design and equipment to be adopted at training institutes
d. Set induction and training periods for new workers to reduce the potential opportunity cost associated with pursuing skill development courses
e. Undertake frequent interaction with students at vocational education institutes through live projects, lectures or visits

Up-skilling Activities

The findings of the youth aspiration study suggest that the employed cohort is interested in skill development that is associated with improved wages and work profiles. For industries in the automobile, logistics and construction sector, where a large skill gap is expected to persist, it is recommended that industries proactively up-skill their employees.

a. Ensuring relevance of curriculum and minimizing the opportunity cost of skilling requires industry participation in skill development. It is recommended that industries partner with schools and training providers to up-skill existing employees through short-term courses. This will mitigate the need for creating in-house training facilities, which are expensive and often unfeasible for medium and small firms.
b. Firms may provide regular inputs on the curriculum design and evaluation methods adopted at the partner training institutes to ensure that the skills of the graduates correctly align with workforce requirements.
c. Through industry bodies and sector skill councils, norms may be developed for the nature of training equipment to be adopted at skill development institutes.
d. Skill development must be incentivized through active industry participation in campus recruitments at training institutes.
e. Industries may also provide on-the-job training through workshops and seminars for soft skills.
f. Clear induction and training periods for new recruits based on qualifications will help clarify the opportunity cost of formal skill acquisition.

26.9.3 Training Providers

Collaborate with Industry Experts

a. Greater industry involvement in training will provide practical knowledge, keep the students up to date with current industry trends and increase their employability. This has several other associated benefits such as enhancing confidence and leadership among students.
b. Develop greater interface and collaboration with industry experts, particularly new and upcoming industries such as food processing that estimate a growth rate of 19% in the years 2017-22, through consultations for curriculum development, industry visits, guest lectures, orientation programs, internships and apprenticeships.
c. Inclusion of a module on general knowledge and soft skills would boost their intellect and raise awareness on current affairs. Many of the large industrial units in the district, particularly in the cement sector are capital intensive and automated to a large extent. Therefore, the workers employed in these units do not require a high level of technical skill. However, worker attitude takes prominence in such a setting. Short-term training courses providing soft skills and organizational behavior should be offered to new recruits/ potential candidates at these units.
d. Institutes could also collaborate with specific industries in developing job specific training curricula, particularly for technical jobs in the electronics hardware industry. The food processing industry requires basic skills that may be imparted through short-term courses to ensure greater efficiency and consistency in work force practices. Hygienic practices, training for international food standards, basic management and supervision functions should be included in the curriculum.

Aptitude tests

Better job matching and rationalization of aspirations and job expectations may be achieved through aptitude tests for the students.

Action Plan:

a. Conduct standardized aptitude tests for all students interested in vocational training to facilitate better course matching.
b. Provide the results along with access to other online resources to help the students make informed choices with regard to course selection.
c. Provide a faculty point of contact for students for all career related queries.
d. Create an industry orientation through events, competitions, guest lectures and industry visits.

26.9.4 NSDC

Standardization of quality

The qualitative gap is a cause for concern in the district. There is a need for quality control for sectors such as IT, auto, engineering and hospitality.

Action Plan:

a. Facilitate standardization of quality through the SSCs. SSCs should be responsible for the development of guidelines on content and pedagogy for courses in the sector.

b. Develop standard frameworks for competency based testing through the SSCs.
c. Allow formal certification of informally acquired skills through NSDC partner institutes.
d. Register and certify private training providers.

Strengthen train the trainers programs

Primary surveys in the district reveal that most training institutes suffer from the lack of good quality instructors. Further, there is lack of standardization of eligibility criteria for trainers both for entry and advanced levels resulting in varying criterion adopted by training institutes to select trainers, particularly for growing service sectors such as BFSI, retail and travel and tourism, in addition to technical trades in textiles and automobile.

Action Plan:

a. Promote modular courses for teachers, to help them up-skill themselves on the job
b. Collaborate with industry to design refresher programmes to skill faculty
c. Engage master trainers to support the development of teacher training modules
d. Identify and support teacher training institutes
e. Create standard norms for certification of trainers based on level of training and type of training

27 Tirunelveli

27.1 Overview

Formed in 1790 by the East India Company, Tirunelveli is one of the oldest districts of Tamil Nadu. The district has a geographical area of 6,566 square kilometers, and is located in southeast Tamil Nadu. It is surrounded by Virudhunagar district in the north, Western Ghats in the west, Kanniyakumari district in the south and Thoothukkudi district in the east. The major river Tamiraparani runs through the district and forms its lifeline, serving as a valuable input for the various agricultural activities in the district. On the administrative front, the district is divided into 3 revenue divisions comprising 11 taluks, 60 firkas, 19 development blocks, 616 revenue villages and 425 village panchayats.

Table 27-1: Basic Information (2010-11)

District Information	Tirunelveli	Tamil Nadu
Number of inhabited villages	448	15,400
Area (Sq Km)	6,566	127,905
% of state area	5.13	100
Area rank	3	-
Revenue divisions	3	-
Taluks	11	-
Blocks	19	-
Corporation & municipalities	8	-
Town panchayats	36	-
Revenue villages	628	-
Panchayat Villages	425	-

Source: District Statistical Handbook (2010-11)

27.2 Demographic Profile

Containing about 4% of the state's population and 5% of the state's area, Tirunelveli is one of the less densely populated districts in the state. The annual population growth rate mirrors the state average, while the sex ratio is higher than the state average at 1,024 females per 1,000 males. Further, about half of the district is urbanized, once again reflecting the average state trend. The HDI and GDI indicators, too, seem to closely follow the state trend, reflecting medium levels of development. The working age population is high; however, the worker participation ratio remains slightly lower, at about 42%.

Table 27-2: Demographic Indicators (2011)

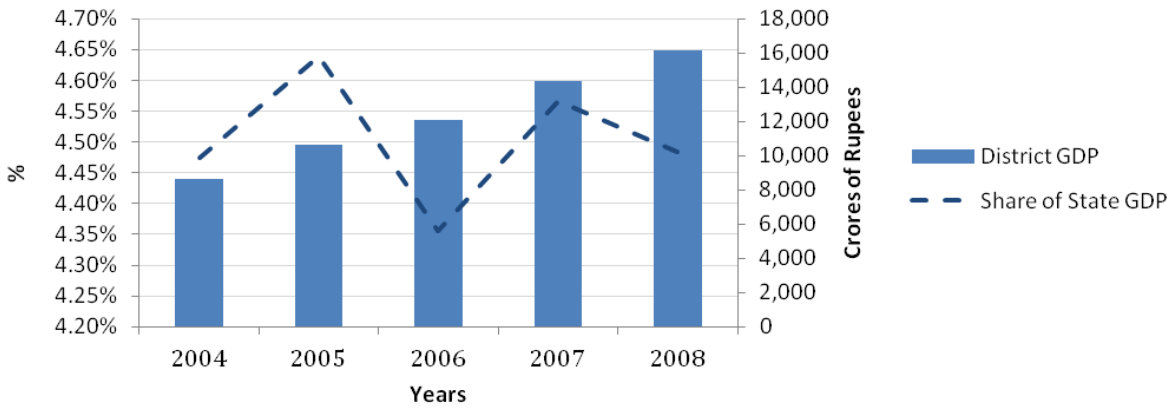
Population	Tirunelveli	Tamil Nadu
Population	3,072,880	72,138,958
Share of state population (in %)	4	100
Population density (per sq. km.)	468.01	564
Urban population percentage	49.49	48.45
Total population annual growth rate (in %)	1.58	2
Urban population	1,520,645	34,949,729
Sex ratio (number of females per 1000 males)	1024	995

Source: Census 2011 (Provisional)

27.3 Economic Profile

The contribution of the district to the state GDP has varied between a high of 4.65% and a low of 4.35%. The contribution has been slightly shaky in recent years and is at about 4.5% in 2008-09. Despite the low share of agricultural laborers in the total workforce, the per capita income of the district is INR 43,558, which is significantly lower than the state average. The district does moderately well on human development indicators like HDI and GDI, with scores of 0.65 for both.

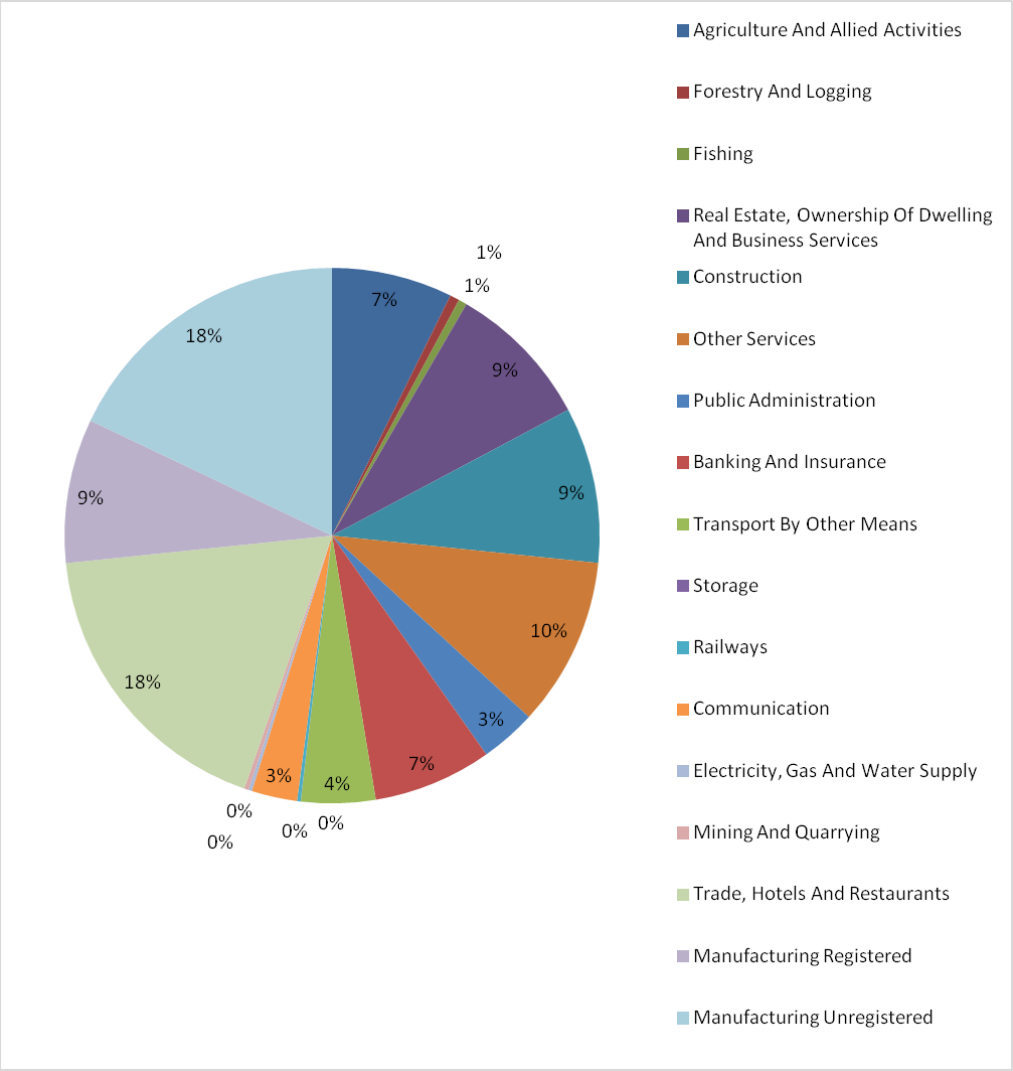
Figure 27.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Manufacturing forms a major portion of the district GDP at 27% with a high contribution of unregistered manufacturing at 18%. Trade, hotels and restaurants accounted for 18% of the district GDP. Agriculture accounts for 7% while forestry and fishing activities account for 1% each. Other dominant sectors include real estate services, construction and other services.

Figure 27.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 27-3Per Capita Income (2011-12)

Human Development Indicators	Tirunelveli	Tamil Nadu
Per capita urban income	49,700	100,600
Per capita rural income	37,600	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

27.3.1 Agriculture

The agricultural sector employs a substantial number of people – 37% of the total workforce is engaged in agricultural activities. Around 39% of the work force is engaged in secondary and tertiary sectors, hinting at a transition in the economic and employment patterns of the district.

About 82% of the total sown area is under food crops. Nearly 61% of this sown area is under cereals, 14% under pulses and 17% under fruits and vegetables. Non food crops include sugarcane, cotton, oil seeds and tobacco. Around 17% of the total sown area is under non-food crops. Almost 15% of this area goes to sugarcane while oil seeds have a share of 13% and cotton has a share of 10% of the remaining sown area. Yield is higher than the state for cereals, pulses and cotton, while it is lower than the state for all other major crop groups.

Table 27-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	99,023	61.32%
Pulses	24,177	14.97%
Condiments	3,681	2.28%
Fruits and vegetables	27,554	17.06%
Other	7,060	4.37%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	5,425	15.88%
Cotton	3,529	10.33%
Oil seeds	4,509	13.20%
Tobacco	7	0.02%
Other	20,692	60.57%
Total Area under Food Crops	**161,495**	**82.54%**
Total Area under Non Food- Crops	**34,162**	**17.46%**

Source: Tamil Nadu Crop Report (2011-12)

Table 27-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield for Tirunelveli	Yield for Tamil Nadu
Cereals	18,420	12,136
Pulses	3,326	2,763
Sugarcane	87	101
Condiments	10,875	32,440
Vegetables	93,185	164,422
Mango	3,457	4,795
Cotton	469	368
Tobacco	1,207	1,524
Oil seeds	15,078	16,484

Source: Tamil Nadu Crop Report (2011-12)

27.3.2 Industry

The district is fairly rich in mineral deposits, with a total of 407 mines and quarries. The major industries employ about 42,000 people. Some of the major minerals found and produced in the district are limestone, garnet sand, rough stone sully and illuminite. There are 25 other medium and major industries producing cement, cotton yarn, calcium carbide, sugar and printing paper. The printing paper industry, in particular, appears to be witnessing significant growth: Capex data indicates that an additional INR 410 crore of investment is being planned in the district.

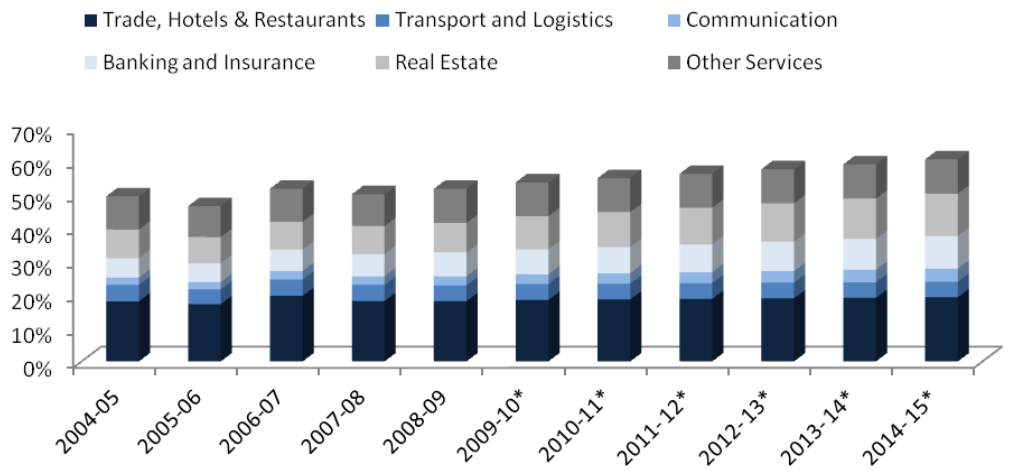
There are a total of 597 working factories employing 21,162 workers. Of these, India Cements Ltd., Sundaram Textiles Ltd., Dharani Sugars Ltd. and Sun Paper Mill Pvt Ltd., are some of the more prominent industrial units operating in the district. In addition, the district houses two industrial parks – one in Nanguneri established in 2001 wherein the Tamil Nadu Industrial Development Corporation (TIDCO) set up an INR 700 crore high tech industrial park in association with INFAC Group and AXES Technologies Inc. The other industrial estate has been set up at Valliyoor by the Small Industrial Development Corporation (SIDCO).

The medium and small scale industry is composed of a variety of sub sectors. Minerals and mineral product manufacturers have the highest number of factories in the district, on account of the availability of substantial mineral resources. Textiles follow closely with 121 factories, while agricultural produce also gets channelized into food producing and food processing industries.

In addition to the big industries, Tirunelveli is also home to a number of khadi and village industries. These small scale industries consist of khadi units producing output worth INR 24 lakh and yarn units with a production output worth INR 17 lakh. Leather goods are also produced in the district, contributing output worth INR 2 lakh, while soap making units produce output worth INR 10 lakh. The district villages are also dotted with a number of industrial Co-operative Societies that contribute a substantial amount of INR 276 lakh to the district economy. These small scale industries are mostly located in Tenkasi, Vikramasingapuram and Tirunelveli taluks. There are a total of 3,04,947 non-agricultural enterprises in the district, with most of them being concentrated in rural areas.

27.3.3 Services

Figure 27.3: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The rising tourism potential and the high penetration of the banking sector into the district has helped provide a boost to select service sectors such as real estate and banking and insurance, which are jointly expected to contribute to almost a quarter of the district GDP in 2014-15. This is in turn expected to raise the profile of service sectors in the district from 52% in 2008-09 to 61% in 2014-15.

Over 4.1 lakh people are employed in the services sector. Being one of the oldest districts of Tamil Nadu, Tirunelveli has a rich cultural heritage. There are about 3,000 temples in the district, with more than 50% of the temples concentrated in the three taluks of Tirunelveli, Vikramasingapuram and Tenkasi. In addition to the temples, there are numerous waterfalls, a 900 square kilometer tiger reserve and wildlife parks. On account of its rich mythical roots, the district attracts various tourists throughout the year. To serve this tourist inflow, a number of hospitality related activities have sprung up in the district, especially hotels, restaurants and cab companies. In addition, the output from small scale units is sold at various shopping centres and retail outlets. The district has seven jewellers' parks, seven silk emporiums and six heritage shopping centres.

The district is characterized by sound financial and health service infrastructure. There are a total of 395 bank branches and 396 medical centres dotting the district. The doctor per population ratio is high at around 7,600, indicating greater scope for development in this sub sector. The district is also well connected with about 730 kilometers of highways, 240 kilometers of railway tracks and 26 railway stations. There are about 35,000 registered vehicles in the district, most of them being used for non-commercial purposes. The district is also close to the Thoothukkudi port and airports at Thoothukkudi, Madurai and Thiruvananthapuram. Further, the district has a fairly well developed financial infrastructure with a total of 382 banks, mainly composed of commercial banks.

The district is also well supported by the existing energy infrastructure. In total, 200 crore units of electricity is generated in the district, out of which 86 crore units are produced by hydro electric power sources, while the remainder of 114 crore units of electricity are produced through wind mills. Kudankulam, in particular, houses hundreds of wind mills used for power generation with a total capacity of 2,000 MW, making it one of the largest wind farms in India. However, recent industrial developments have led to an increase in energy usage, thereby leading to a substantial gap between demand and supply. In order to bridge this gap, the government has planned to set up a nuclear power plant in Kudankulam.

27.4 State of Education

The literacy rate of the district is reasonably high at 83%, with the female literacy rate showing a significant improvement of about 10% and the male literacy rate increasing from 85.2% to 89.66% over the last decade.

The increasing literacy levels may be attributed to the high number of schools – one school for every two and half kilometers – and a high Net Enrolment Ratio, both in primary and upper primary schools. The dropout rate is lower for primary schools, unlike the upper primary schools that witness a higher dropout rate, possibly on account of various socioeconomic constraints. However, the completion rate for primary schools is lower too, mirroring the trend seen in most of the districts of the state. Higher education, however, presents a better picture compared to the other districts of Tamil Nadu.

Table 27-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	67.40	76.38	0.13
Male	85.20	89.66	0.05

Source: Census 2001, Census 2011(Provisional)

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 1,85,428, while enrolment in schools that had primary and upper primary classes was 1,20,149. Enrolment in upper primary schools was 332 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 86,189, while enrolment in schools with upper primary and secondary/ higher secondary classes was 89,456.

Table 27-7: Education Profile (2010-11)

Educational Statistics	Units in Tirunelveli	Units in Tamil Nadu
Primary	1650	33,909
Upper primary	472	8,552
Secondary	185	4,436
Higher secondary	251	4,632
NER – Primary (%)	98.62	98
NER - Upper primary (%)	96.88	98
Dropout rate – Primary (%)	1.34	3.81
Dropout rate - Upper primary (%)	4.35	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

There are 19 engineering colleges and 14 arts and sciences college in the district. There are also 5 colleges to study pharmacy and 3 that offer management courses. There are two medical colleges, one each for dental, nursing and hospitality studies. There are 16 polytechnics. The combined capacity of all the ITIs and ITCs in the district is 5,145. The details of the major ITIs in the district are given in the appendix.

Table 27-8: Education Profile (2010-11)

Field	No. of Colleges
Engineering	19
Arts and sciences	14
Management	3
Medical	1
Dental	1
Nursing	1
Pharmacy	5
Other medical	1
Teacher training and education	0
Hospitality	1
Fashion technology	0
Polytechnics	16
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

27.5 Incremental Human Resource Availability

The current work force is estimated to be 12.78 lakh, which is estimated to grow to 15.34 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 1.21 lakh and in 2017-22, the incremental availability is estimated to be 1.34 lakh.

Table 27-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	3,103	2,052	1,309	1,278		
2017	3,352	2,206	1,432	1,400	121	
2022	3,630	2,373	1,567	1,534		134

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level.

Table 27-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	63	12	47	121
2017-22	90	13	31	134

Source: Athena Research

27.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the unorganized sector, construction, textiles and tourism and travel, mirroring state trends. Food processing, organized retail and BFSI are expected to see a moderate increase in human resource requirements. The human resource requirement in the agriculture sector is expected to decline by 36,000 in 2012-17 and 31,000 in 2017-22.

Table 27-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-30	-1	-5	**-36**	-26	-1	-5	**-31**
Automobile	1	1	0	**2**	1	1	0	**3**
Chemicals and Pharmaceuticals	2	3	4	**0**	2	3	4	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	3	0	1	**4**	4	0	1	**6**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**1**	1	0	0	**1**
Handlooms & Handicrafts	-1	0	0	**-1**	-1	0	0	**-1**
Leather	1	0	0	**1**	1	1	0	**2**
Textiles	7	1	2	**10**	10	2	2	**15**
BFSI	0	2	4	**6**	0	2	6	**9**
Construction	35	7	3	**45**	77	14	7	**99**
Education	0	0	1	**1**	0	0	1	**1**
Healthcare	0	1	2	**3**	0	1	2	**3**
IT and ITES	0	0	5	**5**	0	0	7	**7**
Media & Entertainment	0	1	2	**3**	0	2	3	**6**
Organized Retail	4	1	3	**8**	8	2	5	**15**
Real Estate	0	0	1	**2**	0	0	2	**2**
Tourism & Travel	2	7	6	**14**	3	11	10	**25**
Transportation & Logistics	2	1	0	**3**	2	1	0	**3**
Unorganized (excluding Agriculture and Construction)	56	28	39	**123**	66	43	51	**159**
TOTAL	**84**	**52**	**68**	**196**	**149**	**84**	**98**	**323**

Source: Athena Research

The long term growth sectors for Tirunelveli appear to be textiles and construction. Industries like retail, transportation and logistics and BFSI will require an enabling environment to grow, and are expected to expand rapidly over a span of several years, accompanying the growth of other industries. Traditional industries like gems and jewellery are expected to continue growing, though there will be shifts in the nature of products produced as competing districts will erode the cost based competitiveness of these industries necessitating higher levels of technology and variety of products.

27.7 Skill Gap

The largest skill gap is at the semi skilled level at 40,000 in 2012-17 and 70,000 in 2017-22. The need for lower level skills in sectors such as textile, food processing and construction are expected to create a gap at the skilled level. Given the high enrolment of the local youth in formal education at the higher skill levels, the skill gap at the skilled level is relatively low in 2012-17 at 22,000. However, with the increasing substitution of unskilled

workers with semi-skilled and skilled workers across industries over time, the gap is expected to be larger in 2017-22.

Table 27-12: Skill Gap in 000s

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	84	52	68	**196**	149	84	98	**323**
Incremental Human Resource Availability	63	12	47	**121**	90	13	31	**134**
Skill Gap	**21**	**40**	**22**	**75**	**59**	**70**	**67**	**189**

Source: Athena Research

Qualitative Skill Gaps

Rising unemployment owing to lack of emphasis on skilling farm labour

Unemployment has been a growing problem for the past few years. Since agricultural productivity is at an all time low, a lot of people find themselves being relegated to marginal work and a large number of people are seen to be leaving their farms in search of employment elsewhere. Owing to lack of initiatives to skill the unskilled farm labour, these farmers often find themselves without work and without any skills that can help them find employment elsewhere.

Poor basic education

In terms of skill development, most of the workers have basic education, but very few workers are able to enrol in vocational training programs. Formal education does not prepare the workers for work and the transition to formal employment is deemed difficult for those who do not pursue higher education

Low access to training providers

There are quite a few polytechnic colleges and ITIs. They are concentrated in the urban areas, which presents some accessibility problems for the people in rural and interior areas and often creates a disincentive for skill, especially among the rural youth.

27.8 Youth Aspirations

Table 27-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	IT/ITES	Construction, Food Processing
	Low	Electronics, Media and communications	Agriculture, Handloom, Chemicals

Source: Athena Research

Low employability; a disincentive to skill acquisition

There are few industries in Tirunelveli and are mostly concentrated around the borders. These are mainly small scale textile units that do not offer many employment opportunities. Tirunelveli is a relatively less developed district and is currently in a state of transition from being a primarily agrarian district to a more industrialized one. While the rising industrialization presents an opportunity in the long run, it still does not have the potential to absorb the local youth, who continue to remain in agriculture of migrate outside the district in search of work. The absence of robust demand within the district is perceived as being a key barrier preventing the youth from enrolling into vocational institutes.

Rising emphasis on formal education

The education levels have seen significant improvement in the district over the past five years. This has been one of the most significant positive indicators for the district. Lately, a larger number of students have started enrolling in schools and higher educational institutions. They have realized that worsening agricultural productivity means that they have to gain some education and skills to find work elsewhere. Agriculture is no longer viewed as a sustainable means of livelihood. It has led to a positive impact on education.

Although this increased preference for education is a significant development that will facilitate the long term growth of the district, in the short term, it is seen to cause unemployment amongst skilled youth. Not enough jobs are being generated by the industries, which leads to outward migration by those who are qualified. This mismatch has led to an increase in unemployment figures for the district over the last few years

Mismatch between educational attainment and job expectations

There is a rising mismatch between the current educational and skill levels within the district and the nature of employment opportunities. This mismatch is not purely quantitative, but also qualitative in nature. Often, the locals are unaware of the qualifications required to gain employment in the industry. Further even those who finish college and gain a bachelor's degree, are not considered employable as they are seen to lack the skill sets required for gainful employment. Most of the student respondents were seen to possess little or no understanding of the job market and were often seen to be making decisions in an information vacuum.

27.9 Recommendations

27.9.1 State

Registration and accreditation of skill training providers

Skill Development is a highly unregulated sector, with a bulk of the vocational training providers falling in the private sector. With the exception of ITIs and ITCs, which are registered with the state and are mandated to deliver curricula approved by the centre (NCVT) or the state (SCVT), most skill development institutes remain unregistered and unregulated.

In order to overcome this situation and strengthen skill development in the state an accrediting system is proposed. The proposed accreditation system will serve as a quality assurance measure and as a useful management/regulatory tool for continuous improvement.

Action Plan:

a. Undertake a detailed survey and develop a database of training providers
b. Evaluate the performance of the Vocational Education Training (VET) institutions under the accreditation criteria espoused at the state level.
c. Identify a list of institutions in the district that do not meet the criteria and provide them with a moratorium period to comply with the regulatory and performance criteria defined
d. Rank the various institutes that are accredited based on their performance across a set of holistic parameters
e. Create an online database, with the list of accredited skill institutes along with details on specific parameters such as enrolment, drop out and placement rates, among others

Awareness Campaigns

There is a strong preference for formal education, which may be addressed by providing information at the school level and conducting campaigns to promote the dignity of labor.

Action Plan:

a. Conduct media campaigns to promote the dignity of labor along with street plays in rural areas.
b. Provide information regarding vocational education at the school level.
c. Use employment exchanges to disseminate information regarding existing skill training initiatives in the district.
d. Encourage students to use the government's online resources for information on skill development.

27.9.2 Industry

Institutionalized wage escalation for lower skill levels

People with low skills often have stagnant careers, working at the same level throughout the period of their employment with no provision for promotions or career growth. In order to make blue collar jobs desirable, it is essential to introduce vertical mobility by institutionalizing wage escalation to reflect skill acquisition and experience, particularly for growing labor-intensive sectors such as textiles and construction.

Action Plan:

a. Industry associations can facilitate the adoption of skill levels defined by the relevant SSCs and benchmark wages through industry consensus
b. The industry must create competency standards and performance evaluation parameters, on the basis of which employees at different skill levels will be regularly apprised
c. Employees at different skill levels should be aware of the career trajectory they are likely to follow
d. The acquisition of skill or experience linked with a demonstrable improvement in performance must be rewarded with higher compensation

Participate in train the trainer programs to improve quality of training delivery

The linkage between industry and training institutes continue to remain weak, with the industry playing little or no role in the development of curriculum and pedagogy. As a consequence the curriculum delivered at most vocational training institutes remain outdated or of little relevance to industry requirements. As a consequence industries are increasingly faced with the prospect of hiring graduates who are not job-ready, resulting in large re-training costs. This is especially true of ITIs.

Action Plan:

a. Collaborate with ITIs/training institutes in the region and introduce industry relevant trades or courses
b. Incentivize greater emphasis on the practical component through paid internships for students during their course
c. Forge relationships with training institutes for the purpose of organizing meaningful training programmes that can cater for on-job-training and off-job training
d. Organize workshops for faculty members, with a focus on equipment and technical information needed to develop new skills of relevance to industry
e. Participate in the setting up of training centres through the PPP mode for standardization, regulation and promotion of vocational and skill education

27.9.3 Training Providers

Emphasis on Basic Skills and Portability of Skills

Fluctuations in business climate and change in demand patterns often render workers with highly specialized skills jobless. For the unorganized sector in particular, highly specialized courses are not suitable, since they are required to perform multiple roles. Chennai has one of the largest unorganized sectors in the state.

Action Plan:

a. Multi-skilling courses that provide skills across jobs within a sub-sector should be offered at the semi-skilled level. Fungible skills that can be applied across different sectors should be prioritized, thereby ensuring portability of skills.
b. Training must begin with basic concepts since many of the students reported their inability to grasp new concepts due to poor or inadequate basic education.
c. Training providers are recommended to form partnerships with schools, local bodies and NGOs in order to effectively target students.

d. Student mobilization through direct interactions with the prospective students is likely to be more effective than indirect methods such as advertising, particularly for the lower skill levels.

Use of existing infrastructure

Since the youth do not show much resistance to migration, skilling may be carried out at the industrial hubs. For sectors such as construction, food processing and retail, training may be imparted at the work place.

Action Plan:

a. Institute courses that impart training on the job in partnership with industry. Such courses may offer theoretical training once a week combined with hands on experience for the rest of the week.
b. Adopt short training modules to minimize opportunity cost to students.
c. Include soft skills and organizational behavior in the curriculum to address issues regarding attitude to work.

27.9.4 NSDC

Standardization of quality

The qualitative gap is a cause for concern in the district. There is a need for quality control for sectors such as IT, engineering, BFSI and hospitality.

Action Plan:

a. Facilitate standardization of quality through the SSCs. SSCs should be responsible for the development of guidelines on content and pedagogy for courses in the sector.
b. Develop standard frameworks for competency based testing through the SSCs.
c. Allow formal certification of informally acquired skills through NSDC partner institutes.
d. Register and certify private training providers.

Strengthen train the trainers programs

Primary surveys in the district reveal that most training institutes suffer from the lack of good quality instructors. The lack of standardization of eligibility criteria for trainers both for entry and the poor quality of training may be addressed through train the trainer programs.

Action Plan:

a. Undertake interviews to identify the issues, challenges and gaps in the trainers skills in the district, particularly in sectors such as IT, engineering and tourism and travel
b. Promote modular courses for teachers, to help them up-skill themselves on the job
c. Collaborate with industry to design refresher programmes to skill faculty
d. Identify and support teacher training institutes
e. Create standard norms for certification of trainers based on level of training and type of training

28 Tiruppur

28.1 Overview

Tiruppur was recognized as a district in 2008, making it the youngest district in Tamil Nadu. It was carved out of the former, relatively larger district of Coimbatore and roughly comprises an area of 7,400 square kilometers. Tiruppur is landlocked and is surrounded by Coimbatore district in the east, Erode district in the north, Karur district in the west and Dindigul district in the south. Administratively, the district is divided into 3 revenue divisions comprising 7 taluks, 13 blocks and 357 revenue villages. These units are governed by seven municipalities, 17 town panchayats and 273 village panchayats.

Table 28-1: Basic Information (2010-11)

District Information	Tiruppur	Tamil Nadu
Number of inhabited villages	0	15,400
Area (Sq Km)	7,409	127,905
% of state area	5.79	100
Area rank	1	-
Revenue divisions	3	-
Taluks	7	-
Blocks	13	-
Corporation & municipalities	7	-
Town panchayats	17	-
Revenue villages	357	-
Panchayat villages	273	-

Source: District Statistical Handbook (2010-11)

28.2 Demographic Profile

With a population of 24 lakh, Tiruppur constitutes 3.43% of the state's population. The relatively larger land area, however, ensures that the population density of the district is maintained at a moderate level of 334 persons per square kilometer. The district is also highly urbanized, with 61% of the population residing in urban areas. The annual population growth rate is lower than the state average at 1.43%. In terms of development, the district has a lower sex ratio compared to the other, adjacent districts, at 988 females per 1000 males.

Table 28-2: Demographic Indicators (2011)

Population	Tiruppur	Tamil Nadu
Population	2,471,222	72,138,958
Share of state population (in %)	3	100
Population density (per sq. km.)	333.55	564
Urban population percentage	61.48	48.45
Total population annual growth rate (in %)	1.43	2
Urban population	1,519,388	34,949,729
Sex ratio (number of females per 1000 males)	988	995

Source: Census 2011 (Provisional)

28.3 Economic Profile

Tiruppur is famous as the 'knitwear capital' of India. The booming textile industry, especially in terms of exports, has led to the phenomenal growth of the economy of the district. This growth is reflected in the high urban and rural per capita incomes of the district. The urban per capita income, at INR 1,04,900 surpasses the state average of 1,00,600, while the rural per capita income is double the state average at INR 61,800. The difference in the rural and urban per capita incomes, however, indicates that the spread of industrialization is not entirely adequate.

The district has seen a steady rise in GDP from the years 2004 to 2008; however, the district share of the state GDP has witnessed a decline since 2007. The contribution of railways is highest to the district GDP at 31% followed by real estate, ownership of dwelling and business services at 13%.

Table 28-3: Per Capita Income (2011-12)

Human Development Indicators	Year	Tiruppur	Tamil Nadu
Per capita urban income	2011	104,900	100,600
Per capita rural income	2011	61,800	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

28.3.1 Agriculture

Despite the marginal land holdings, the agricultural productivity is high. The various agricultural development facilities and subsidies provided to the farmers ensure that they can maximize the yields from their agricultural produce. More than 80% of the farmers in Tiruppur district cultivate only small and marginal land holdings – the lack of cultivable land resources constrains the size of the holdings. Horticulture is also practiced in the district, with a total of 5,172 hectares being used for this purpose. The prominent horticultural crops cultivated in the district include onions, tapioca, chillies and mangoes. A large portion of area is also used to produce medicinal and high nutritional value plants such as gloriosa and moringa.

Around 55% of the total sown area is under food crops. Of this, 58% is under cereals, 19% is under pulses and 14% is under fruits and vegetables. Non food crops occupy 45% of the total sown area, of which sugarcane and oil seeds account for 7% and 12% of the total area sown respectively. Other non-food crops account for another

80%. Yields are higher than the state for cereals, sugarcane and cotton and tobacco and are lower than the state for pulses, condiments and oil seeds.

Table 28-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	63,734	57.95%
Pulses	20,563	18.70%
Condiments	3,564	3.24%
Fruits and vegetables	15,411	14.01%
Other	6,711	6.10%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	6,541	7.23%
Cotton	382	0.42%
Oil seeds	11,197	12.37%
Tobacco	387	0.43%
Other	71,989	79.55%
Total Area under Food Crops	**109,983**	**54.86%**
Total Area under Non Food- Crops	**90,496**	**45.14%**

Source: Tamil Nadu Crop Report (2011-12)

Table 28-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield For Tiruppur	Yield for Tamil Nadu
Cereals	18,148	12,136
Pulses	2,088	2,763
Sugarcane	111	101
Condiments	11,723	32,440
Vegetables	137,037	164,422
Mango	4,795	4,795
Cotton	1056	368
Tobacco	1,524	1,524
Oil seeds	6,527	16,484

Source: Tamil Nadu Crop Report (2011-12)

28.3.2 Industry

The large presence of the textile sector and the rapid growth of trading activities have led to a high level of industrialization in the district. Although the city of Tiruppur started out in the early 1930s as a small cotton-marketing centre, over the decades it has developed into a prominent district with a number of small and medium manufacturing enterprises, engaged in the production and export of knitted apparels. The low

availability of suitable agricultural land further provided the impetus for industrial growth in Tiruppur. Increased domestic competition forced the knitwear manufacturers to expand their markets. Subsequently, the export value for the knitwear industry has grown from INR 75 crores in 1987 to INR 5000 crores in 2004. The knitwear industry of Tiruppur contributes to about 80% of the exports in the textile sector.

Over time, the booming knitwear industry led to the diversification and spread of industries around Tiruppur city. Somanur, Avinashi and Palladam for instance, have a large number of power looms, while Koduvai is home to a substantial number of handloom units. At present, there are 5000 units operating within the textile value chain of the district. These units can be divided by the nature of specialized activity they perform, ranging from stitching to compacting. The table below provides a breakup of the textile value chain in the district. The district also houses a few other small and micro units engaged in various production activities. In particular, units engaged in the production of coir products, plastic products, food and metal products are located across the district.

Major investments of INR 1500 crore are being made in the electricity generation sector in the district in the medium term. Road and rail infrastructure investments will cross INR 480 crore. Retail trade will see investments of INR 125 crore, and other storage facilities will see investments of INR 86 crore. Textile processing will see investments of INR 5 crore.

28.3.3 Services

The booming textile industry led to the development of a robust trading sector in the district. Over 4.37 lakh people are employed in the services sector. In order to increase, as well as organize the exports of various apparel units, the Tiruppur Exporters' Association (TEA) was set up in 1990. There are currently 668 knitwear exporters registered with the association. The increase in export activity has also led to the development of TEA LEMUIR Container Terminals Pvt Ltd., which provides services to the various exporting units.

Exports were at their highest in 2007 with the TEA handling more than INR 11,000 crore worth of exports from the various knitwear producing units in the district. However, over the past few years, the global recession crises coupled with the appreciation of the rupee against dollar, has reduced the export value of the textile units by about 25%.

Increased trading activities have resulted in a well developed network of roads across the district. There are over 750 kilometers of state highways and 2106 kilometers of other panchayat and union roads, ensuring greater levels of connectivity for the various knitwear producing and exporting units of the district.

28.4 State of Education

The literacy rate of Tiruppur is slightly higher than the state average, at 79%. Male literacy, at 86%, is far higher than female literacy at 72%. As Tiruppur is the most recently formed district, estimates for the decadal change in male and female literacy rate is not available.

Table 28-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	NA	72.07	-
Male	NA	86.07	-

Source: Census 2001, Census 2011(Provisional)

There are 869 primary schools, 320 upper primary schools, 72 secondary schools and 82 higher secondary schools in the district. As the district is recently formed, data on NER and dropout rates is not available.

Higher education too, is well represented in the district, with 6 engineering colleges, 17 arts and science colleges, 23 ITIs and 24 polytechnic colleges. The presence of a large textile sector would explain the relatively higher number of vocational education institutes in the district.

Table 28-7: Education Profile (2010-11)

Educational Statistics	Units in Tiruppur	Units in Tamil Nadu
Primary	869	33,909
Upper primary	320	8,552
Secondary	72	4,436
Higher secondary	82	4,632
NER – Primary (%)	0	98
NER - Upper primary (%)	0	98
Dropout rate – Primary (%)	0	3.81
Dropout rate - Upper primary (%)	0	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

Table 28-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	6
Arts and sciences	3
Management	1
Medical	0
Dental	0
Nursing	0
Pharmacy	1
Other medical	0
Teacher training and education	0
Hospitality	1
Fashion technology	1
Polytechnics	1
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

28.5 Incremental Human Resource Availability

The current work force is estimated to be 10.33 lakh, which is estimated to grow to 13.47 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 1.48 lakh and in 2017-22, the incremental availability is estimated to be 16.7 lakh.

Table 28-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	2,507	1,658	1,058	1,033		
2017	2,806	1,848	1,207	1,181	148	
2022	3,144	2,058	1,376	1,347		167

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level. The district has high inward migration, particularly at the unskilled level from nearby districts such as Dindigul on account of the large textiles industry.

Table 28-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	98	12	37	148
2017-22	110	12	44	167

28.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the textiles sector. The district is likely to see more rationalized textile growth over the next decade. A large part of the service sector growth is expected to be unorganized. Construction is expected to show significant growth with economic development. Media and entertainment, organized retail and healthcare will also show moderate growth. The human resource requirement in the agriculture sector is expected to decline by 30,000 in 2012-17 and 26,000 in 2017-22.

Table 28-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-25	-1	-5	**-30**	-22	-1	-4	**-26**
Automobile	0	0	0	**0**	0	0	0	**0**
Chemicals and Pharmaceuticals	0	0	0	**0**	0	0	0	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	1	0	0	**1**	1	0	0	**2**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**0**	0	0	0	**0**
Handlooms & Handicrafts	-1	0	0	**-1**	-1	0	0	**-1**
Leather	0	0	0	**0**	0	0	0	**0**
Textiles	39	7	8	**54**	55	11	12	**78**
BFSI	0	2	4	**6**	0	2	6	**9**
Construction	23	4	2	**30**	51	10	5	**65**
Education	0	1	6	**7**	0	1	7	**8**
Healthcare	1	3	5	**9**	1	3	5	**9**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	1	3	6	**9**	1	5	10	**17**
Organized Retail	4	1	3	**8**	7	2	5	**14**
Real Estate	0	0	2	**2**	0	1	2	**3**
Tourism & Travel	0	0	0	**0**	0	0	0	**0**
Transportation & Logistics	2	0	0	**3**	2	1	0	**3**
Unorganized (excluding Agriculture and Construction)	45	23	31	**99**	53	34	41	**128**
TOTAL	**90**	**44**	**64**	**197**	**149**	**68**	**91**	**308**

Source: Athena Research

28.7 Skill Gap

The largest skill gap is at the semi skilled level at 31,000 in 2012-17 and 56,000 in 2017-22. There is estimated to be an excess availability of human resources at the unskilled level. However, with an increasing number of youth opting for skilling and the growth of textiles, where the skill mix is skewed towards the lower skill levels, this gap is expected to be reversed by 2022. At the skilled level, the gap is estimated to be 27,000 in 2012-17 and 47,000 in 2017-22.

Table 28-12: Skill Gap in 000s

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	90	44	64	**197**	149	68	91	**308**
Incremental Human Resource Availability	98	12	37	**148**	110	12	44	**167**
Skill Gap	**-9**	**31**	**27**	**49**	**39**	**56**	**47**	**142**

Note: Figures in negative indicate excess supply
Source: Athena Research

Qualitative Skill Gaps

Mismatch between changing industrial scene and skills

The economic and industrial profile of Tiruppur has undergone quite a lot of change over the last few years, owing to policy changes. Three years ago, the government passed regulations that made it mandatory for the dyeing and bleaching units in the district to install more environment friendly 'Effluent Treatment Plants' (ETP) in their system. This was strictly enforced in textile clusters like Tiruppur, and so a number of bleaching and dyeing units were forced to shut down their operations until they installed these ETPs. This had an adverse impact on other forward-linked activities within the textile value chain, raising their costs of sourcing raw material significantly. A number of other units were forced to scale down and cut back on their operations, and so a lot of people lost jobs. The migrant inflow has reduced substantially over these past couple of years. Furthermore, many people have started moving out of the district. A large number of people choose to go to Chennai and Kancheepuram in search of jobs.

Efforts to encourage the local population to set up own businesses or acquire skills that may be relevant to industries in close proximity to the district may help them to be gainfully employed till the textile industry in the district is revived

28.8 Youth Aspirations

Table 28-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	**Low**
Employment Potential	**High**	Textiles	Construction
	Low	IT/ITES, Electronic hardware	Agriculture, Handloom

Source: Athena Research

Mismatch between youth aspiration and local demand

The education levels are quite high in the district. Industrialization has ushered in a greater level of awareness about the benefits of education. This has been accompanied by a simultaneous growth in educational

institutions and most of the youth in the district aspire to pursue higher education from reputed institutes. However, with the local demand being mostly for skilled and semi-skilled workers, this has led to a mismatch between demand and supply. Thus the state is today in a state of flux, and either consists of those who are completely unskilled and willing to take on a blue collar job, but cannot do so on account of their lack of skills; or has highly skilled youth, looking for white collar jobs, who are offered blue collar jobs instead.

Lack of career guidance

Over the past decade, there has been an increase in awareness about the merits of an undergraduate degree amongst both – rural and urban residents. This has led to a majority of the district's youth gaining at least an undergraduate education.

While this is a positive trend, the focus group discussions with the youth in the district revealed that most of them did not have clarity on the kind of jobs that they would take up, upon completion of their undergraduate programmes. Further, their educational choices did not seem to be driven by their career aspirations and these educational courses was seen to rarely equip them with the required skills.

28.9 Recommendations

28.9.1 State Government

Increase penetration of skill development in rural and backward areas

Access to skill training continues to remain a challenge in the district, especially among women and the rural youth. The need to travel long distances is a key disincentive. Further, awareness on the benefits of skill development coupled with the absence of adequate hostel and accommodation facilities at institutes are seen to have an adverse impact on student enrolment and retention at ITIs

Action Plan:

a. Promote the idea of mobile classrooms

- Recruit and train instructors to go to remote areas in the district and train students in select trades of local relevance or popular skill such as carpentry/joinery, plumbing, electrical, brickwork and painting - these classes are proven to be very hands-on and can engage teenagers for whom academic subjects do not appeal.
- Provide the instructors with the requisite inventory and infrastructure, e.g. mobile vans equipped with tools and materials required for training

b. Use a hub and spoke approach, where satellite campuses for a hub ITI may be set up in remote areas. The hub will operate as an aggregator of demand and support the spokes (satellite campuses) with respect to placements and counselling, while a set of recruiters may be deployed in the satellite campus to deliver the curriculum

c.

d. Provide hostel and other accommodation facilities at the vocational centres to improve enrolment and retention

e. Undertake skill awareness campaigns and conduct outreach programs in backward areas through SHGs

Strengthen/formulate laws in favour of improved working conditions and better wages

The poor working conditions prevalent in most industries employing vocational labour is among the key factors contributing to a low preference for vocational education among the district youth. There has been an increasing demand from the industry for reform in labour legislation in order to increase efficiency, effectiveness, competitiveness and productivity of workers.

Action Plan:

a. Incentivize firms complying with safety and health norm prescribed by the government
b. Fund training, retraining and refresher training to workers, trade unions, employers and inspecting staff on various issues, aspects, problems and new developments with respect to working conditions.
c. Invest in concerted media and other publicity mechanisms in a planned, systematic and continuous manner to ensure that due awareness on working conditions is being built to create awareness among workers as well as employers on their respective rights and obligations under the Factories Act, 1948 other relevant acts

28.9.2 Industry

Information on Labour Needs

The lack of adequate information on industry contributes to low enrolment in vocational education. The youth in the district do not seem to have clarity on the skill requirements of industry located within the district.

Action Plan:

a. Co-ordinate with employment exchanges/ local district councils and publish the data on the employment requirements in the industry, along with a clear description of the job requirements and the necessary qualifications
b. Promote the creation of a central database which matches information on skill levels to compensation and presents a list of potential employers in the state for a certain skill type – this may be taken by industry associations in the state
c. Participate in campus recruitments at vocational training institutes in the vicinity to establish a strong connection between employment and skill acquisition
d. Undertake frequent interaction with students at vocational education institutes through projects, lectures or visits

Rationalizing the wage norms for skills

The wages for basic vocational skills in the state, on an average continue to remain lower than the average cost of acquiring training (time and money cost), making skill acquisition an unattractive proposition for the youth. There thus an urgent need to rationalize the wage levels for different skills levels in the district.

Action Plan:

a. Revise the minimum wage rate for graduates acquiring vocational training by taking into account the consumer price index number for industrial workers. Ensure that the starting wage is equal to or above the cost of acquiring training
b. Create a pay and career path for graduates coming out of vocational institutes

c. Incentivize the youth to acquire advanced or specialized skills by providing higher wage rates
d. Engage in off-campus recruitments by directly contacting training providers

28.9.3 Training Providers

Targeted Courses and Flexible Payment Schemes

A major constraint identified for enrolling in vocational education is the access to educational credit. It is recommended that training providers build partnerships with government and industry to set up flexible payment schemes for technical courses.

Action Plan:

a. Skill training providers may offer flexible modes of payment for courses for the students through fee structures that require payments in instalments rather than a lump sum.
b. Performance incentives for trainers are likely to improve the quality of training delivery. Performance may be evaluated by the performance of the students in evaluations and the placement percentage.
c. Courses must be geared towards industry needs by gathering industry perspectives at the end of placement seasons are likely to ensure relevance of the training.
d. Regular alumni interactions will help improve training delivery and provide industry perspectives to the students.

Strengthen labour market outcomes

The training institutes in the district continue to display poor placement performance. The weak linkage between training institute and industry, coupled with the lack of adequate emphasis on creating and operating placement cells are the key factors contributing to the low placement performance of the institute.

Action Plan:

a. Create a placement cell with the responsibility of organizing job fairs and strengthening the linkage between the industry and the institute through guest lectures and in-plant training and industry visits.
b. Publish information on employment opportunities on the institute notice board
c. Create a feedback mechanism with industry to collect information on the relevance of the course and curriculum to industry needs
d. Encourage students to acquire multiple-certifications of relevance to local/regional demand
e. Impart live skills, including communication and human resources management
f. Prepare the youth for employment by undertaking aptitude tests and orientation programs that provide clarity on the nature of employment that can be expected post completion of course
g. Facilitate interaction with student alumni to provide the students with a better perspective on the nature of employment

28.9.4 NSDC

Formal certification of informally acquired skills

A large number of the people in the district are seen to be engaged in the informal sector, whose skill levels are either native or are acquired informally. In the absence of formally certified skills these labourers tend to earn

meagre wages. The formal vocational system is not accessible to these people as they often do not meet the basic education criteria prescribed

Action Plan:

a. Build a database of existing types of skills provided in the informal sector and design targeted training interventions to upskill and certify those engaged in the informal sector
b. Design special training courses (e.g. fast track evening courses), as pilot projects, to enhance the skills of participants in the informal sector by providing them formal training using the existing vocational training infrastructure
c. Popularize the Recognition of Prior Learning (RPL) system in existing vocational centres. RPL allows for individuals to gain accreditation for their native skills and access formal retraining opportunities even if they do not fulfil basic educational criteria
d. Launch community-based training programmes, which provide demand driven and customized training programmes to cater to the needs of those in the district

Encourage earn while you learn programmes

Given the unwillingness to enrol in vocational education on account of the high opportunity cost, particularly among migrants, there is a need to encourage earn while you learn programs. There is a huge human resource requirement at the semi-skilled level for textiles and construction, but a large number of the workers are unable to enrol in formal skill acquisition programs due to financial constraints.

Action Plan:

a. Group the people engaged as labour into groups based on location and provide select skill trainers in the district with the required inventory to implement the 'mobile-classroom' concept to go to where the worker
b. Provide stipends to those interested in acquiring certifications in skill on a part time basis by using the existing vocational infrastructure
c. Encourage skill trainers to introduce modular employability trades of relevance to local demand with flexible timings

29 Tiruvannamalai

29.1 Overview

Tiruvannamalai lies in northeast Tamil nadu and is landlocked by Kancheepuram and Thiruvallur districts in the east, Vellore and Krishnagiri in the north, Dharmapuri in the east and Viluppuram in the south. Tiruvannamalai has been named one of the 250 most backward districts in India, and it receives funding from the Backward Region Grant Fund Programme. The sixth largest district in the state, it is divided into 7 taluks and 18 blocks and has 4 corporations.

Table 29-1: Basic Information (2010-11)

District Information	Tiruvannamalai	Tamil Nadu
Number of inhabited villages	1046	15,400
Area (Sq Km)	5,871	127,905
% of state area	4.59	100
Area rank	6	-
Revenue divisions	2	-
Taluks	7	-
Blocks	18	-
Corporation & municipalities	4	-
Town panchayats	10	-
Revenue villages	1067	-
Panchayat villages	860	-

Source: District Statistical Handbook (2010-11)

29.2 Demographic Profile

Tiruvannamalai is a largely rural district, with a moderate population distribution. The urban population accounts for only 20% of the total population. The sex ratio is lower than the state average at 990 females per 1,000 males. A majority of the workforce is engaged in the primary sector, and the WPR is higher than the state average at 43.13%. Only 53.3% of the population is of the working age group.

Table 29-2: Demographic Indicators (2011)

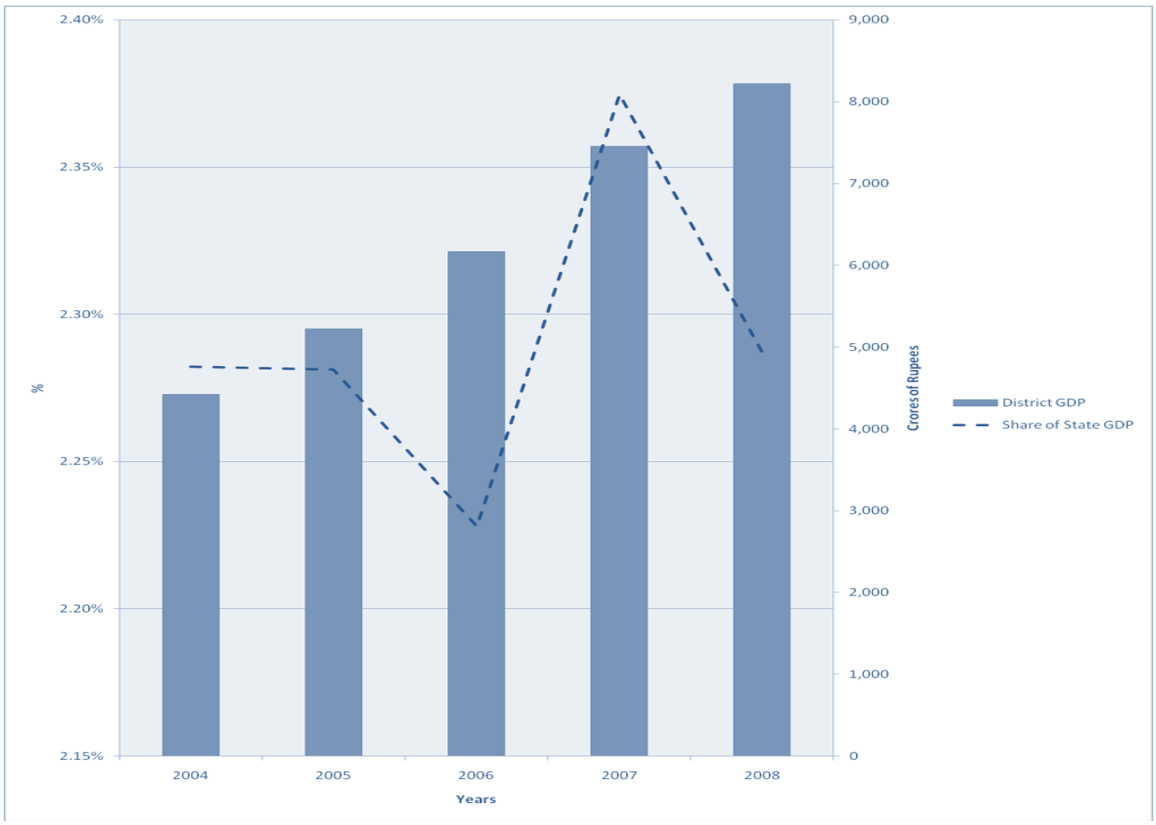
Population	Tiruvannamalai	Tamil Nadu
Population	2,468,965	72,138,958
Share of state population (in %)	3	100
Population density (per sq. km.)	420.52	564
Urban population percentage	20.10	48.45
Total population annual growth rate (in %)	1.49	2
Urban population	496,343	34,949,729
Sex ratio (number of females per 1000 males)	993	995

Source: Census 2011 (Provisional)

29.3 Economic Profile

The contribution of the district to the state GDP has varied between a high of 2.37% and a low of 2.23%. The contribution to the state GDP was 2.28% in the year 2008-09. Per capita income is low relative to the state average. Human development indicators are moderate with HDI and GDI at 0.612 and 0.608 respectively. Although they are lower than the state averages, they are better than the figures for comparable districts.

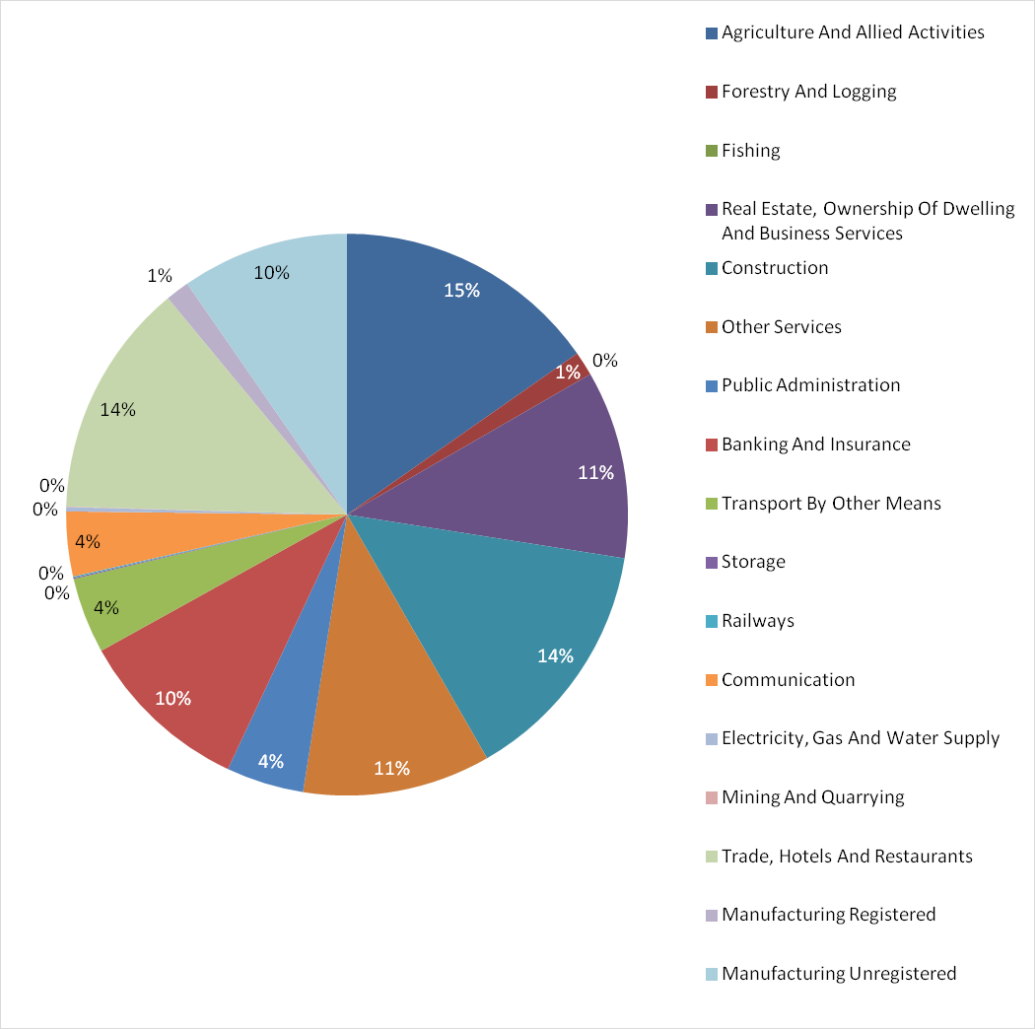
Figure 29.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Agriculture forms a large share of the district GDP at 15% with forestry activities contributing 1%. Trade, hotel and restaurants and construction form a major share, with each sector contributing 14%. Real estate, banking and insurance and other services are major contributors. Manufacturing contributes about 11%; a majority of this comes from unregistered manufacturing at 10%.

Figure 29.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 29-3: Per Capita Income (2011-12)

Human Development Indicators	Tiruvannamalai	Tamil Nadu
Per capita urban income	56,600	100,600
Per capita rural income	34,300	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

29.3.1 Agriculture

Tiruvannamalai is a primarily agrarian district. More than 71% of workers are engaged in agricultural activity. The major crops grown include rice, cereals, pulses and oil seeds. However, primary research indicates that the unavailability of land and the gradual shift of preferences for industries might lead to a further drop in agricultural production.

Table 29-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	127,854	74.16%
Pulses	8,461	4.91%
Condiments	812	0.47%
Fruits and vegetables	8,235	4.78%
Other	27,049	15.69%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	27,034	22.88%
Cotton	1,202	1.02%
Oil seeds	89,858	76.05%
Tobacco	70	0.06%
Other	0	0.00%
Total Area under Food Crops	**172,411**	**59.33%**
Total Area under Non Food- Crops	**118,164**	**40.67%**

Source: Tamil Nadu Crop Report (2011-12)

Around 59% of the total sown area is under food crops. Almost 74% of this sown area is under cereals, 4.9% under pulses and 4.7% under fruits and vegetables. Non-food crops include sugarcane, cotton, oil seeds and tobacco. Over 40% of the total sown area is under non-food crops. Almost 76% of this area goes to oil seeds while sugarcane has a major share of 22% of the remaining sown area. Yield is lower than the state for all crops except vegetables.

Table 29-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield for Tiruvannamalai	Yield for Tamil Nadu
Cereals	11,700	12,136
Pulses	1,991	2,763
Sugarcane	94	101
Condiments	11,541	32,440
Vegetables	176,880	164,422
Mango	4,795	4,795
Cotton	502	368
Tobacco	1,327	1,524
Oil seeds	14,465	16,484

Source: Tamil Nadu Crop Report (2011-12)

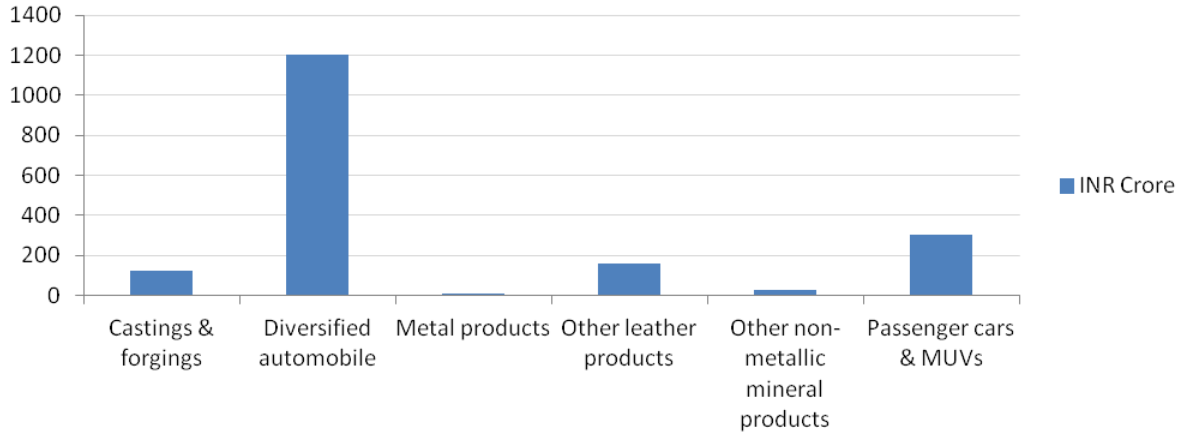
29.3.2 Industry

Despite its geographical proximity to Chennai and the industrialized belt of Tamil Nadu, industry in Tiruvannamalai picked up only after the establishment of a large industrial complex at Cheyyar by SIPCOT. The industry sector employs approximately 79,000 people in the district. This has been followed by the announcement of a 250 square kilometer SEZ and a plant by the Mahindra group for producing commercial automobiles. The other industries in the area include plants producing industrial dyes, automotive and telecommunication components. One of the largest sugar mills in the nation is situated near Cheyyar.

This level of industrialization has not spread to the regions surrounding the industrial park. A majority of the industrial units operating in the district are in the small and medium scale sector. Small industries are concentrated in the food processing, textiles and leather processing space, although there are some units producing fabricated metal products. A large number of rice mills are concentrated around Cheyyar. There are also a number of small and medium scale industries spread around certain areas of the district. These units comprised largely of food processing industries, textiles and apparel, leather industries and wood and paper manufacturing.

Capex investment data indicates continued investment in the industrial complexes manufacturing automobiles and automobile components in the short to medium term. There is also significant investment in textiles. The ongoing and prospective investments hint at a structural shift from an economy based on agriculture to an economy dominated by large scale industries and manufacturing in the district. Primary research further substantiates the rise in industrial development; interactions with district level officials point towards increased interest from private players to set up their factories in this district.

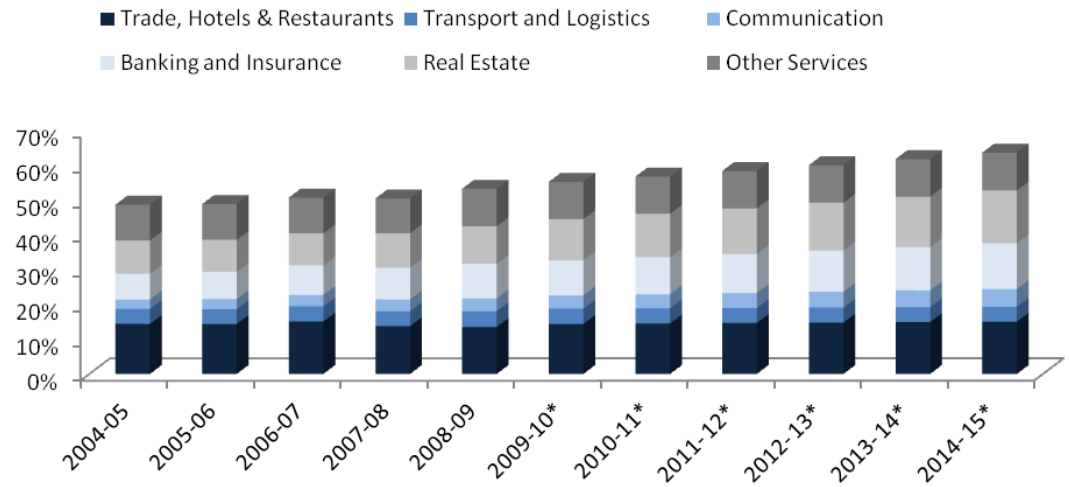
Figure 29.3: Investments in INR Crore



Source: Capex, CMIE (2011-12)

29.3.3 Services

Figure 29.4: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

Tiruvannamalai is home to some of the most sacred temples in the country and is a major tourism spot. The contribution of the service sector in the district has witnessed considerable growth in the recent years and expected to contribute to almost 64% of the district GDP in 2014-15.

The services sector employs 2.3 lakh people in the district. The district houses a number of health care facilities ranging from 15 hospitals to 410 health sub centres. These sub centres are spread around the villages of the district, making it easily accessible for the villagers. However, these health care centres are staffed by only 279 doctors and 387 nurses, which might prove to be fairly inadequate for the district's inhabitants. Additionally, the district also has 105 private bank branches and 24 cooperative bank branches. There are only three government banks though, which might lead to lower credit availability for the locals. The farming population in particular,

might find it infeasible to further their vocations and set up independent agricultural enterprises. The district's relatively higher forest cover poses geographical constraints for easy mobility – indeed, railway services in the district are limited to covering only 93 kilometers, between eight stations.

29.4 State of Education

The literacy rate is low compared to the state, at 75%. Male and female literacy rates have risen over the period 2001-2011 from 79.2% and 55.6% to 83.73% and 65.71% respectively. There are over 2000 schools in the district. Net enrolment ratios for the primary level matched the state level at 98.17% but dipped for the upper primary level at 95.69%. Dropout rates were, however, higher than the state average, at 5.02% and 10.87% for primary and upper primary respectively.

Table 29-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	55.60	65.71	0.18
Male	79.20	83.73	0.06

Source: Census 2001, Census 2011(Provisional)

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 1,22,396, while enrolment in schools that had primary and upper primary classes was 90,808. Enrolment in upper primary schools was 95 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 49,788, while enrolment in schools with upper primary and secondary/ higher secondary classes was 68,121.

Table 29-7: Education Profile (2010-11)

Educational Statistics	Units in Tiruvannamalai	Units in Tamil Nadu
Primary	1477	33,909
Upper primary	372	8,552
Secondary	221	4,436
Higher secondary	134	4,632
NER – Primary (%)	98.17	98
NER - Upper primary (%)	95.69	98
Dropout rate – Primary (%)	5.02	3.81
Dropout rate - Upper primary (%)	10.87	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

There are 11 engineering colleges and 4 arts and sciences colleges in the district. There is a pharmacy college and nine polytechnics. The combined capacity of all the ITIs and ITCs in the district is 4,242. The details of the major ITIs in the district are given in the appendix.

Table 29-8: Education Profile (2010-11)

Field	No. of Colleges
Engineering	11
Arts and sciences	4
Management	0
Medical	0
Dental	0
Nursing	0
Pharmacy	1
Other medical	0
Teacher training and education	0
Hospitality	0
Fashion technology	0
Polytechnics	9
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

29.5 Incremental Human Resource Availability

The current work force is estimated to be 10.27 lakh, which is estimated to grow to 12.35 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 98,000 and in 2017-22, the incremental availability is estimated to be 1.09 lakh.

Table 29-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	2,493	1,649	1,052	1,027		
2017	2,695	1,774	1,151	1,126	98	
2022	2,921	1,909	1,261	1,235		109

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level.

Table 29-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	69	8	21	98
2017-22	77	10	22	109

Source: Athena Research

29.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the unorganized sector, construction and tourism and travel. Other service sectors are expected to see a moderate increase in human resource requirements. The human resource requirement in the agriculture sector is expected to decline by 75,000 in 2012-17 and 66,000 in 2017-22.

Table 29-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-62	-2	-11	**-75**	-55	-1	-10	**-66**
Automobile	0	0	0	**0**	0	0	0	**0**
Chemicals and Pharmaceuticals	0	0	0	**0**	0	0	0	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	0	0	0	**1**	1	0	0	**1**
Furniture	0	0	0	**0**	0	0	0	**0**
Gems & Jewellery	0	0	0	**0**	0	0	0	**0**
Handlooms & Handicrafts	0	0	0	**0**	0	0	0	**0**
Leather	0	0	0	**0**	0	0	0	**0**
Textiles	0	0	0	**1**	1	0	0	**1**
BFSI	0	1	3	**4**	0	2	4	**6**
Construction	25	5	2	**33**	56	11	5	**72**
Education	0	0	1	**1**	0	0	1	**1**
Healthcare	0	1	1	**2**	0	1	1	**2**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	0	0	1	**1**	0	1	1	**2**
Organized Retail	2	0	1	**3**	3	1	2	**5**
Real Estate	0	0	1	**1**	0	0	1	**1**
Tourism & Travel	4	14	12	**30**	6	24	21	**51**
Transportation & Logistics	1	0	0	**1**	1	0	0	**1**
Unorganized (excluding Agriculture and Construction)	45	23	31	**99**	53	34	41	**128**
TOTAL	**16**	**43**	**42**	**101**	**66**	**72**	**68**	**206**

Source: Athena Research

29.7 Skill Gap

The largest skill gap is at the semi skilled level at 35,000 in 2012-17 and 62,000 in 2017-22. There is estimated to be an excess availability of human resources at the unskilled level. However, with the decline in population growth and an increasing number of youth opting for skilling, this gap is expected to reduce by 2022. At the skilled level, the gap is estimated to be 22,000 in 2012-17 and 46,000 in 2017-22.

Table 29-12: Skill Gap in 000s

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	16	43	42	**101**	66	72	68	**206**
Incremental Human Resource Availability	69	8	21	**98**	77	10	22	**109**
Skill Gap	**-54**	**35**	**22**	**3**	**-11**	**62**	**46**	**97**

Note: Figures in negative indicate excess supply
Source: Athena Research

Qualitative Skill Gaps

High levels of disguised unemployment

Tiruvannamalai is one of the most backward districts of Tamil Nadu. Economic activity is very low, with the district relying on agriculture and small scale industrial units for income generation. In the absence of robust industrialization and the high dependence of people on agriculture, the district is observed to have very high levels of disguised unemployment. As a consequence the average skill levels of the district have remained low. This has curtailed the potential of the farm labour to find gainful employment outside the district.

Lack of local demand for labour; a disincentive to skill acquisition

A majority of the district's inhabitants are engaged in some form of agricultural activity. There is very little industrial development in the district. Lately, a few industrial estates have been set up in the district; however, most of these units are automated and do not generate substantial employment opportunities. Further, most of the land area currently used for agricultural purposes is small, which does not allow for large scale mechanization processes, resulting in lower wages.

In the absence of adequate demand for labour coupled with low wages, most of the people seem to be averse to acquiring skills.

29.8 Youth Aspirations

Table 29-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	Tourism and Travel, Retail	Construction
	Low	IT/ITES	Agriculture

Source: Athena Research

Low aspiration

The focus group discussions with students from the district revealed that there was a certain level of complacence among the youth, who preferred to either be engaged in agriculture and tap into NREGA funds or work elsewhere as unskilled labour. This poor attitude towards work and progress is one of the major problems in the district.

Low preference for vocational education

Very few students opt to enrol in vocational courses to gain skills that would make them employable. There are very few ITIs and polytechnics in the district and there is no incentive for other skill training providers to enter the market since the demand for vocational education is very low. Capacity utilization in existing ITIs is extremely low. Student respondent revealed general lack of interest in skill development and education owing to the unavailability of job opportunities within the district.

High tendency to migrate outside the district for work

The unavailability of suitable or productive jobs has led to increasing outward migration in recent years. This is especially prominent among the youth in the 20-30 age group. They migrate to more developed districts in search of relatively higher incomes, but currently do not possess the skills to achieve this end. Greater awareness on the benefits of skill development and better enrolment into vocational institutes can prepare the youth to be gainfully employed

Poor quality of basic education

The educational institutions in the district are severely constrained by the low availability of infrastructure. The lack of access to good basic education makes skill training very challenging. Students choose to drop out of school by the sixth or eighth grade, which further acts a restraint on any developmental activities proposed. Most of the students, expressed their concern regarding their inability to absorb the vocational curriculum owing to their poor grasp on basic concepts with basic concepts.

29.9 Recommendations

29.9.1 State Government

Improve ITI infrastructure and performance

Primary research reveals that ITI graduates are often treated at par with 10th pass workers by employers, indicating no returns to investment in skilling. This must be addressed by revamping the ITIs.

Action Plan:

a. Upgrade existing infrastructure to provide hostels and other facilities to make it possible for students from far off blocks to pursue training at ITIs.
b. Upgrade equipment used for training delivery to ensure relevance of learning to industry needs. Introduce modules on basic numeracy in advanced courses to bridge the gap between basic and vocational education.
c. Provide refresher courses and tutorials for weak students.
d. Obtain feedback from industry on suitable modules and training delivery methods to ensure relevance.

Awareness Campaigns

There is a strong preference for formal education, which may be addressed by providing information at the school level and conducting campaigns to promote the dignity of labor.

Action Plan:

a. Conduct media campaigns to promote the dignity of labor along with street plays in rural areas.
b. Provide information regarding vocational education at the school level.
c. Use employment exchanges to disseminate information regarding existing skill training initiatives in the district.
d. Encourage students to use the government's online resources for information on skill development.

29.9.2 Industry

Participation in skill development

To ensure relevance of training imparted to the industry, greater involvement and interaction with skill training providers is essential.

Action Plan:

a. Play a proactive role in skill development through participation in skill development schemes initiated by the government such as the PPP scheme.
b. Create captive training institutes that serve as model institutes for other training providers in the district.
c. Provide inputs to training providers on curriculum, pedagogy and equipment.
d. Regularly engage with the trainers to acquaint them of new developments and apprise them of suitable training methods.

Improve working conditions

The low preference for blue collar jobs and high attrition must be addressed through targeted measures to improve the work environment.

Action Plan:

a. Ensure adherence to health and safety standards for factory floor jobs, particularly in sectors such as automobile.
b. Institute employee feedback systems and grievance redressal mechanisms
c. Provide part compensation in kind to reduce attrition - this is already practiced to some extent in the construction sector.
d. Offer bonus for staying for one year to incentivize staying at the same job, thereby facilitating assimilation of skills on the job.

29.9.3 Training Providers

Short-term courses

For less skill intensive jobs in sectors such as construction, existing workers may be up-skilled, in addition to fresh skilling of unskilled human resources through partnerships with local NGOs or training providers.

Action Plan:

a. Identify blocks where the availability of human resources is high.
b. Partner with local NGOs and training providers to engage in community outreach to raise awareness about skill development.
c. Offer short-term training courses to equip students with the basic skills required for the industry.
d. Ensure upward revision of wages on completion of the course to incentivize students to enroll.

Emphasis on Basic Skills and Portability of Skills

Fluctuations in business climate and change in demand patterns often render workers with highly specialized skills jobless. For the unorganized sector in particular, highly specialized courses are not suitable, since they are required to perform multiple roles.

Action Plan:

a. Multi-skilling courses that provide skills across jobs within a sub-sector should be offered at the semi-skilled level. Fungible skills that can be applied across different sectors should be prioritized, thereby ensuring portability of skills.
b. Training must begin with basic concepts since many of the students reported their inability to grasp new concepts due to poor or inadequate basic education.
c. Training providers are recommended to form partnerships with schools, local bodies and NGOs in order to effectively target students.
d. Student mobilization through direct interactions with the prospective students is likely to be more effective than indirect methods such as advertising, particularly for the lower skill levels.

29.9.4 NSDC

Entrepreneurship workshops

Workshops may be conducted in the district to provide basic training and information for aspiring entrepreneurs.

Action Plan:

a. Collaborate with local NGOs and industry to mobilize students.
b. Impart basic training for entrepreneurship.
c. Provide guidance on sources of finance, government assistance and other resources that entrepreneurs may access.
d. Provide access to online resources for entrepreneurship information.

Capacity Creation

There is a need for focused capacity creation for sectors such as construction and tourism and travel.

Action Plan:

a. Set up training facilities in industrialized parts of the district to ensure proximity to potential employers.
b. Adequate infrastructure and facilities must be provided at the training location to incentivize the youth to enroll in vocational training.
c. Focus on semi skilled level courses for sectors such as automobile.
d. Offer career counseling to control drop outs from the institute and attrition from industry.

30 Vellore

30.1 Overview

Vellore lies along the northern border of Tamil Nadu and is the fourth largest district in the state. It is bordered by Krishnagiri in the west, Tiruvannamalai in the south, Thiruvallur in the east and the state of Andhra Pradesh in the north. Vellore is amongst the most populous districts in the state. Its administrative centre is the city of the same name. It is divided into 3 revenue divisions – Vellore, Ranipet and Thirupathur, which have 3 taluks each, and are further divided into a total of 22 blocks.

Table 30-1: Basic Information (2010-11)

District Information	Vellore	Tamil Nadu
Number of inhabited villages	789	15,400
Area (Sq Km)	6,131	127,905
% of state area	4.79	100
Area rank	4	-
Revenue divisions	3	-
Taluks	9	-
Blocks	20	-
Corporation & municipalities	12	-
Town panchayats	16	-
Revenue villages	843	-
Panchayat Villages	743	-

Source: District Statistical Handbook (2010-11)

30.2 Demographic Profile

Vellore is a densely populated state with 641 people per square kilometer, higher than the state average. The population is predominantly rural, with only 43% classified as urban. The population growth rate is however lower than the state aggregate. The sex ratio is well balanced at 1000 women per 1000 men, higher than the same for the state. More than 62% of the population are in the working age range and agricultural labor ers account for more than 27% of the total workforce. The WPR is slightly lower than the state average, indicating a need to improve labor force participation. Human development indices like the HDI and GDI are close to state aggregates at 0.658 and 0.655 respectively.

Table 30-2: Demographic Indicators (2011)

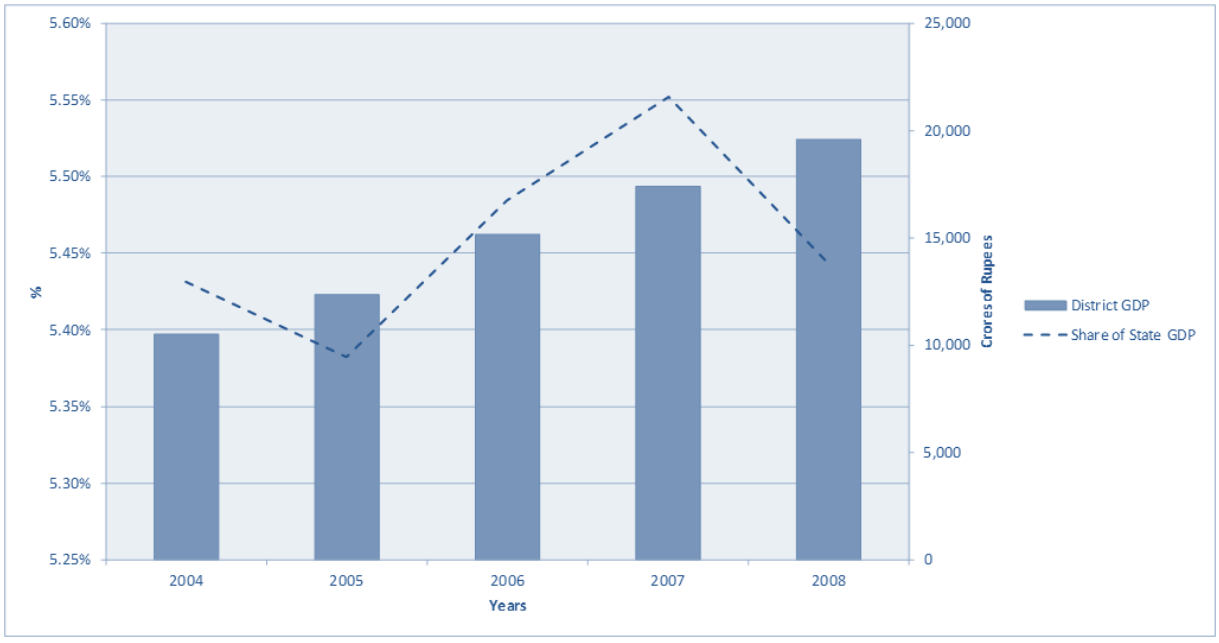
Population	Vellore	Tamil Nadu
Population	3,928,106	72,138,958
Share of state population (in %)	5	100
Population density (per sq. km.)	640.70	564
Urban population percentage	43.13	48.45
Total population annual growth rate (in %)	1.3	2
Urban population	1,694,057	34,949,729
Sex ratio (number of females per 1000 males)	1004	995

Source: Census 2011 (Provisional)

30.3 Economic Profile

Vellore's contribution to the state GDP has fluctuated over time, but has shown a steady upward trend. Per capita incomes were lower in the urban areas than the state average, but higher in the rural areas. The large agricultural base in the district, suggests that the primary sector is more productive than other districts with similar demographics. The district is located between the two major IT centres in India, Bangalore and Chennai and strategically connects Andhra Pradesh, Karnataka and Tamil Nadu. Already a hub of medical tourism, Vellore shows much potential in being a key link among the rapidly growing metros in the surrounding states. The strategic location of the district on the golden quadrilateral network further boosts the connectivity advantages enjoyed by the district.

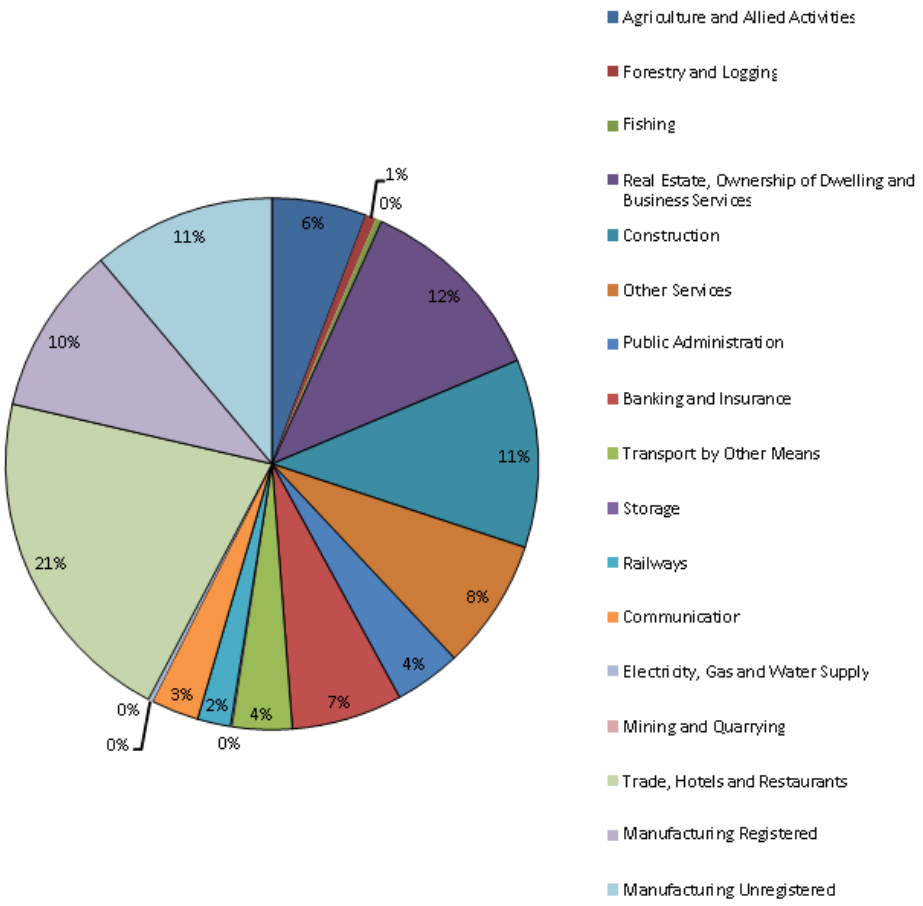
Figure 30.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

The district has seen a steady rise in GDP from the years 2004 to 2008; however, the district share of state GDP has witnessed a decline since 2007. The contribution of railways to the district GDP is highest at 31% followed by real estate and ownership of dwelling and business services at 13% each. Agriculture's share is only about 6%.

Figure 30.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 30-3: Per Capita Income (2011-12)

Human Development Indicators	Vellore	Tamil Nadu
Per capita urban income	72,000	100,600
Per capita rural income	41,100	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

30.3.1 Agriculture

Vellore is primarily agrarian in nature, with a majority of the population living in rural areas and engaged in agricultural activity. A substantial portion of the district's inhabitants are still employed in this sector, especially the middle aged population category. However, the district has been facing water shortages for the last three years. There are no perennial river sources, nor have there been substantial rainfall. As most of the agricultural operations are dependent upon natural weather conditions, this has harmed the agricultural productivity in the district to a great extent. If this drought like condition continues, the district would face major unemployment problems. Those engaged in the agrarian sector would be the worst hit, as they don't possess any skills fit for industrial sector employment. The number of labor ers that are set to leave agriculture by 2022 amounts to 1.87 lakh people.

About 60% of the total sown area is under food crops. Of this, 52% is under cereals, 18% is under fruits and vegetables and 14% is under pulses. Non food crops occupy 40% of the total sown area, of which sugarcane and oilseeds account for 21% and 61% of the total area sown respectively. Cotton accounts for another 8%. Yields are higher than the state for sugarcane and tobacco and are lower than the state for pulses, condiments, oil seeds, cotton, vegetables and fruits.

Table 30-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	67,380	52.31%
Pulses	17,768	13.79%
Condiments	1,790	1.39%
Fruits and vegetables	23,423	18.18%
Other	18,445	14.32%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	18,384	21.03%
Cotton	6,604	7.55%
Oil Seeds	53,167	60.81%
Tobacco	1	0.00%
Other	9,274	10.61%
Total Area under Food Crops	**128,806**	**59.57%**
Total Area under Non Food- Crops	**87,430**	**40.43%**

Source: Tamil Nadu Crop Report (2011-12)

Table 30-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield for Vellore	Yield for Tamil Nadu
Cereals	14,442	12,136
Pulses	2,556	2,763
Sugarcane	76	101
Condiments	14,102	32,440
Vegetables	158,879	164,422
Mango	4,761	4,795
Cotton	323	368
Tobacco	1,524	1,524
Oil seeds	12,496	16,484

Source: Tamil Nadu Crop Report (2011-12)

30.3.2 Industry

There are 12 large and 300 medium scale industries operating in the district. The major industrial presence in Vellore is BHEL, which has a large plant at Ranipet. The Boiler Auxiliaries Plant set up by BHEL is one of its fastest growing projects, and has given rise to more than 250 small scale engineering plants supplying components to it. Brakes India Ltd. and EID Parry Ltd are located in the Sholinger and Walajah blocks. Three industrial parks, SIDCO, SIPCOT and SIDCO are located in the district. India's largest explosives factory, Tamil Nadu Industrial Explosive Ltd, is located in Vellore.

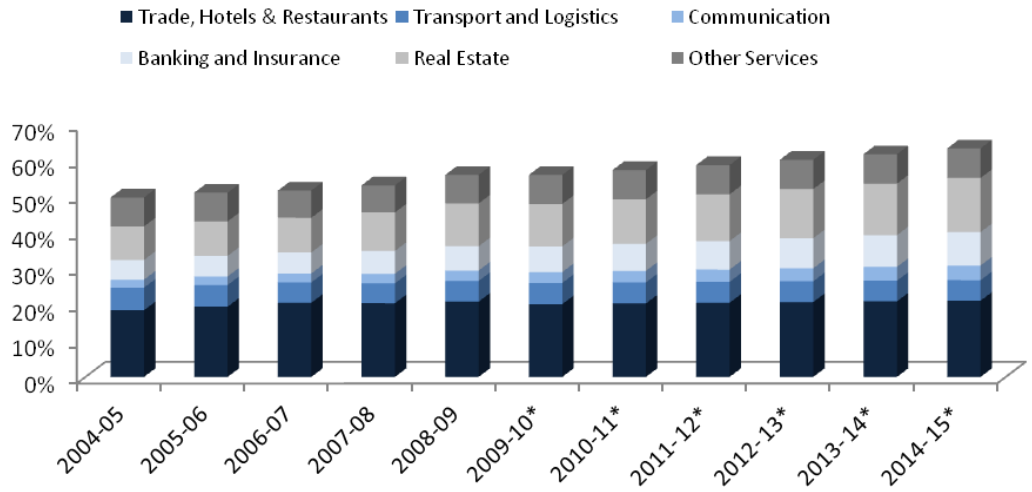
There are three sugar mills in the district at Ambur, Thirupathur and Vellore. These mills employ more than 620 people and support a wide range of small scale industries involved in the production of spirit, alcohol and paper. Vellore Roller Flour mills is another major presence in the area in agro processing along with cotton mills at Sholnger and Gudiyatham, all of which support a cluster of small scale industries in their vicinity

There are more than 12396 micro and small scale enterprises in the district. The majority of these are engaged in the processing and production of leather goods. About 1226 leather units are spread all over Vellore, primarily in the Alangayam, Madhanur and Wallajah blocks. This industry contributes to Tamil Nadu's 35% share in the nation's leather exports. Another important industry is safety match production, and Vellore is second only to Virudhunagar in this sector. There are also smaller textile mills and coir units. In the MSME space, the sector is dominated by tanning and footwear industries, employing more than 48,000 people. Engineering plants are also prominent in the district.

Major investments of INR 6800 crore in LNG storage and distribution are planned in the district in the medium term. Health services investments worth INR 6 crore are also in the pipeline according to CMIE Capex data. Road and rail infrastructure investments will cross INR 1,240 crore and storage investments will be INR 1,295 crore. Tourism and travel will see investments greater than INR 76 crore.

30.3.3 Services

Figure 30.3: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

Owing to its proximity to Chennai, Vellore has witnessed rapid urbanization and growth. This has led to considerable growth in the real estate market. The contribution of the real estate market to district GDP is expected to grow from 9% in 2004-05 to 15% in 2014-15, thereby raising the overall profile of the contribution of service sectors from 50% in 2004-05 to 63% in 2014-15.

Over 4.12 lakh people are employed in the services sector. Vellore is a major health care centre in the nation. The largest hospital is the Christian Medical College Hospital. There are 15 hospitals, 67 primary health centres, 454 health sub-centres and 6 other medical institutions with an aggregate of 1627 bed strength, 828 doctors and 1646 nurses. Vellore also enjoys heightened road connectivity, especially with respect to inter-state connectivity. The golden quadrilateral network passes through Vellore, transforming the district into an important industrial hub.

30.4 State of Education

The literacy rate is 80%, which is close to state levels and higher than the national average. Both female and male literacy rates have improved over time from 62.8% to 72.43% and 81.99% to 86.96% from 2001 to 2011 for females and males respectively. Basic education is well represented in the state, which has 5% of the total schools in the state. The distribution of schools is also denser than the state average at 0.47 per square kilometer. Net enrolment ratios are close to state averages at 98.18% and 97.85% for primary and upper primary respectively. Dropout rates for primary are slightly below the state average at 3.64% but the dropout rates for upper primary are higher at 10.05%.

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 2,17,483, while enrolment in schools that had primary and upper primary classes was 1,20,570. Enrolment in upper primary schools was 271 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 1,16,118, while enrolment in schools with upper primary and secondary/ higher secondary classes was 1,17,181.

Table 30-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	62.80	72.43	0.15
Male	81.99	86.96	0.06

Source: Census 2001, Census 2011(Provisional)

Vellore is considered a major centre for technical and medical education. The Vellore Institute of Technology (VIT), considered to be one of the best private engineering colleges in the country is located here. There are 15 engineering colleges in the district, which is about 3% of the state total. The distribution of these colleges is sparser than the state at 0.002 per square kilometer, but is slightly compensated by the higher density of ITIs and polytechnics at about 0.01 per square kilometer. In total, there are 35 ITIs and 30 polytechnics. The combined capacity of all the ITIs and ITCs in the district is 6,846.

Large medical colleges like the Christian Medical College and Hospital and Government. Vellore Medical College and Hospital along with other nursing colleges and physiotherapy schools contribute to the state's reputation as one of the country's top medical centers. There are a total of 4 medical colleges and 21 arts and sciences colleges.

Table 30-7: Education Profile (2010-11)

Educational Statistics	Units in Vellore	Units in Tamil Nadu
Primary	1951	33,909
Upper primary	500	8,552
Secondary	276	4,436
Higher secondary	233	4,632
NER – Primary (%)	98.18	98
NER - Upper primary (%)	97.85	98
Dropout rate- Primary (%)	3.64	3.81
Dropout rate - Upper primary (%)	10.05	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

Table 30-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	15
Arts and sciences	9
Management	2
Medical	2
Dental	0
Nursing	2
Pharmacy	0
Other medical	1
Teacher training and education	0
Hospitality	3
Fashion technology	0
Polytechnics	13
Agriculture	1

Source: UGC, AICTE, MHRD Database (2010-11)

30.5 Incremental Human Resource Availability

The current work force is estimated to be 16.34 lakh, which is estimated to grow to 19.65 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 1.57 lakh and in 2017-22, the incremental availability is estimated to be 1.74 lakh.

Table 30-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	3,967	2,623	1,673	1,634		
2017	4,289	2,823	1,832	1,791	157	
2022	4,649	3,039	2,008	1,965		174

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level.

Table 30-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	92	12	53	157
2017-22	114	13	47	174

Source: Athena Research

30.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the unorganized sector, construction, tourism and travel and organized retail. Vellore houses a large leather cluster which is expected to generate additional human resource requirements over the next decade. The human resource requirement in the agriculture sector is expected to decline by 44,000 in 2012-17 and 39,000 in 2017-22.

The long term growth sectors for Vellore appear to be leather and construction. Traditional industries like textiles are expected to continue robust growth, though there will be shifts in the nature of products produced as competing districts will erode the cost based competitiveness of these industries necessitating higher levels of technology and variety of products.

Table 30-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-37	-1	-7	**-44**	-32	-1	-6	**-39**
Automobile	0	0	0	**0**	0	0	0	**0**
Chemicals and Pharmaceuticals	2	3	4	**0**	2	3	4	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	2	0	0	**2**	3	0	1	**3**
Furniture	0	0	0	**0**	1	0	0	**1**
Gems & Jewellery	0	0	0	**0**	0	0	0	**1**
Handlooms & Handicrafts	-1	0	0	**-1**	-1	0	0	**-1**
Leather	5	2	2	**9**	7	3	2	**13**
Textiles	9	2	2	**12**	12	3	3	**18**
BFSI	0	2	5	**7**	0	3	7	**10**
Construction	52	10	5	**66**	114	21	10	**145**
Education	0	0	4	**4**	0	0	5	**5**
Healthcare	1	2	4	**6**	1	2	4	**6**
IT and ITES	0	0	4	**4**	0	0	5	**5**
Media & Entertainment	0	1	2	**3**	0	2	3	**5**
Organized Retail	6	1	4	**12**	11	2	8	**21**
Real Estate	0	0	2	**3**	0	1	3	**4**
Tourism & Travel	3	10	9	**22**	4	17	15	**37**
Transportation & Logistics	3	1	1	**4**	3	1	1	**5**
Unorganized (excluding Agriculture and Construction)	72	36	50	**158**	84	55	65	**203**
TOTAL	**117**	**70**	**90**	**268**	**210**	**112**	**129**	**443**

Source: Athena Research

30.7 Skill Gap

The largest skill gap is at the semi skilled level at 58,000 in 2012-17 and 99,000 in 2017-22. There is also a gap at the unskilled level on account of high growth in less skill intensive sectors such as leather, textiles and construction. At the skilled level, the gap is estimated to be 12,000 in 2012-17 and 82,000 in 2017-22 due to the high preference for formal education in the district.

Table 30-12: Skill Gap in 000's

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	117	70	90	**268**	210	112	129	**443**
Incremental Human Resource Availability	67	12	78	**157**	114	13	47	**174**
Skill Gap	**50**	**58**	**12**	**111**	**96**	**99**	**82**	**269**

Source: Athena Research

Qualitative Skill Gap

Lack of emphasis on training farm labour

Agriculture, though no longer the predominant contributor to the district's income, still employs a substantial portion of the district's inhabitants, particularly the middle aged population category. However, severe water shortages have threatened the employment of a large proportion of the district's labour force. The lack of investments in modernizing agricultural practices and inadequate emphasis to train the farm labour to achieve alternate modes of employment may have a serious impact on the per capita incomes in the district and hamper inclusive growth

Mobilization of skilled labour a challenge

In the absence of adequately skilled people, large firms are compelled to recruit from ITIs and polytechnics, which are not equipped to train individuals as per the needs of the industry. Thus, in most cases those recruited from ITIs need to be trained extensively and the costs for these training sessions are substantial and are borne willingly only by the larger companies, making mobilization of skilled labour a bigger chllnge for small and medium enterprises

30.8 Youth Aspirations

Table 30-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	Organized retail, Textiles	Leather, Construction
	Low	IT/ITES, Electronic hardware	Agriculture, Handloom

Source: Athena Research

Mismatch between skills acquired and local demand

Some of the youth in the district are willing to take up industrial blue collar jobs, which are abound in the district. However, most of them are not equipped with the skill required for the job. Very few firms are willing to train these candidates on the job, owing the high cost of training, thereby leading to a visible gap between demand and supply.

Preference for formal education

Over the last decade, there has been an increase in awareness about the merits of an undergraduate degree amongst both – rural and urban residents. This has led to a majority of the district's youth gaining at least an undergraduate education, mainly engineering. While this is a positive trend, it has also created a shortage for vocationally skilled labour and widened the mismatch between the skill levels of the local population and the types of jobs available. On a more rudimentary level, the jobs that do not require skills however, do not find any takers amongst the locals, who consider these jobs to be below their status. Typically, these industrial jobs are taken up by migrant labourers from Bihar, West Bengal, Orissa and Bangladesh.

Lack of awareness and guidance regarding skill development

There are vocational training institutes in the district, but these institutes have very low enrolment rates. A majority of the jobs being created in the district require vocational skills. The surveys revealed that most of the youth in the rural and remote areas are unaware about these opportunities, and often make wrong educational choices based on preconceived notions rather than market reality

30.9 Recommendations

30.9.1 State Government

Awareness Campaigns

There is a strong preference for formal education, which may be addressed by providing information at the school level and conducting campaigns to promote the dignity of labor.

Action Plan:

a. Conduct media campaigns to promote the dignity of labor along with street plays in rural areas.
b. Provide information regarding vocational education at the school level.
c. Use employment exchanges to disseminate information regarding existing skill training initiatives in the district.
d. Encourage students to use the government's online resources for information on skill development.

Promote greater interaction between formal and vocational education streams

The failure of vocational education courses at various levels to attract a substantial number of students has been attributed to the inability of these courses to provide employable skills, vertical mobility and technical competencies in terms of relevance and quality. Vertical mobility options must be provided to the vocational graduates through benchmarking of such diplomas with formal education. The NVEQF framework is attempting to develop this at the national level. At the district level, efforts must be made to catalyse the transition away from the current system to one where there is greater interaction between vocational and formal streams.

Action Plan:

a. Inclusion of basic subjects covered in degree courses in vocational training courses to allow transition from vocational to formal education, should the student desire to make such a change.
b. Providing exposure on vocational education at the 10+2 level through presentations and discussions with school students to position skill training as an alternative to formal education.
c. Benchmarking vocational education diplomas and certificates with specific levels of formal educational attainment, similar to professional courses to make it possible for students to pursue further formal education, if they so desire.
d. Set up a vocational university or community resource centres to provide students with opportunities to pursue vocational degrees and advanced skills.

30.9.2 Industry

Information on Nature of Human Resource Requirements

The lack of adequate information on the skill requirements of industry located within the district leads to misinformed educational choices.

Action Plan:

a. Co-ordinate with employment exchanges/ local district councils and publish the data on the employment requirements in the industry, along with a clear description of the job requirements and the necessary qualifications
b. Promote the creation of a central database which matches information on skill levels to compensation and presents a list of potential employers in the state for a certain skill type – this may be taken by industry associations in the state
c. Participate in campus recruitments at vocational training institutes in the vicinity to establish a strong connection between employment and skill acquisition
d. Undertake frequent interaction with students at vocational education institutes through projects, lectures or visits

Rationalizing wage norms for skills

The wages for basic vocational skills continue to remain lower than the average cost of acquiring training (time and money cost), making skill acquisition an unattractive proposition for the youth. The presence of a large number of intermediaries between the employer and the employee further drives down the actual wage level, owing to the higher costs of transactions. There thus an urgent need to rationalize the wage levels for different skills levels in the district.

Action Plan:

a. Revise the minimum wage rate for graduates acquiring vocational training by taking into account the consumer price index number for industrial workers. Ensure that the starting wage is equal to or above the cost of acquiring training
b. Create a pay and career path for graduates coming from vocational institutes
c. Incentivize the youth to acquire advanced or specialized skills by providing higher wage rates
d. Engage in off-campus recruitments by directly contacting training providers

30.9.3 Training Providers

Focus on quality

The qualitative gaps in skilling were apparent in the course of the primary research. It is important, therefore, to make a conscious effort to improve quality of training.

Action Plan:

a. Obtain approval for curriculum and pedagogy from the relevant SSC.
b. Partner with industry to ensure placements for the students.
c. Facilitate alumni interactions to rationalize job expectations.
d. Create standardized evaluation systems in consultation with the SSCs and the state government to ensure uniformity in the level of ability indicated by the possession of vocational training qualifications.

Strengthen labour market outcomes

The training institutes in the district continue to display poor placement performance, with apprenticeships remaining the largest component of on campus employment of students by Industry. The weak linkage between training institute and industry, coupled with the lack of adequate emphasis on creating and operating placement cells are the key factors contributing to the low placement performance of the institute.

Action Plan:

a. Create a placement cell responsible for organizing job fairs and strengthening the linkage between the industry and the institute through guest lectures and in-plant training and industry visits.
b. Publish information on employment on the institute notice board
c. Create a feedback mechanism with industry to collect information on the relevance of the course and curriculum to industry needs
d. Encourage students to acquire multiple-certifications of relevance to local/regional demand
e. Impart live skills, including communication and human resources management
f. Facilitate interaction with student alumni to provide the students with a better perspective on the nature of employment

30.9.4 NSDC

Align youth aspiration to industry demand

The mismatch between youth aspirations and industry demand remain among the most critical factors contributing to the skill gap. The choices that the youth make are seen to deviate from policy and market incentives and depend on social factor such as prestige. Furthermore, the absence of information on the changes taking place in the domestic and international labour markets has led to youth in the district making faulty educational choices.

Action Plan:

a. Create a district-wise registry of employment opportunities available for various trades
b. Set up a counselling and career guidance centre at the district to conduct aptitude tests and counsel students on the various vocational options that will suit them and the corresponding employment opportunities available
c. Create an online portal, which will serve as a common forum for students and skill development professionals and experts to exchange thoughts and opinions
d. Set up a hot-line to allow to students to obtain greater clarity of the various skills development options available to them

Train the Trainer Programs

The linkage between industry and training institutes continues to remain weak, with the industry playing little or no role in the development of curriculum and pedagogy. As a consequence the curriculum delivered at most vocational training institutes remain outdated or of little relevance to industry requirements. Industries are therefore faced with the prospect of hiring graduates who are not job-ready, resulting in large re-training costs.

Action Plan:

a. Create industry relevant training delivery guidelines through the SSCs for sectors such as construction, healthcare, leather and textiles. Disseminate these to ITIs/training institutes in the region
b. Emphasize on the practical component through paid internships for students during their course
c. Encourage relationships with industry for the purpose of organizing meaningful training programmes that can cater for on-job-training and off-job training
d. Organize workshops for faculty members, with a focus on equipment and technical information needed to develop new skills of relevance to industry
e. Facilitate the setting up of training centres for the trainers on PPP mode for standardization, regulation and promotion of vocational and skill education

Short-term courses

For less skill intensive jobs in sectors such as textile and leather, which have shown steady growth in the district, industry may up-skill existing workers and skill potential candidates through partnerships with local NGOs or training providers.

Action Plan:

a. Identify blocks where the availability of human resources is high.
b. Partner with local NGOs and training providers to engage in community outreach to raise awareness about skill development.
c. Offer short-term training courses to equip students with the basic skills required for the industry.

31 Viluppuram

31.1 Overview

Viluppuram lies on the eastern coast of Tamil Nadu and is bordered by Cuddalore in the south, Salem in the west, Tiruvannamalai and Kancheepuram in the north and the Bay of Bengal in the east. It is the second largest district in the state, with a land area of 6,960 square kilometers. The district is divided into 2 revenue divisions, 8 taluks and 22 blocks. There are 3 corporations and 15 town panchayats.

Table 31-1: Basic Information (2010-11)

District Information	Viluppuram	Tamil Nadu
Number of inhabited villages	1430	15,400
Area (Sq Km)	6,960	127,905
% of state area	5.44	100
Area rank	2	-
Revenue divisions	4	-
Taluks	8	-
Blocks	22	-
Corporation & municipalities	3	-
Town Panchayats	15	-
Revenue villages	1490	-
Panchayat Villages	1104	-

Source: District Statistical Handbook (2010-11)

31.2 Demographic Profile

Viluppuram is a heavily populated district, constituting almost 5% of the state population. This fact is masked by its large land area, which makes the density of population lower than the state wide average at 564 people per square kilometer. The population growth rate is much higher than the state average at 3.3% annually. This suggests that the demographics of the district look to be in flux for some time in the future. The district is primarily agrarian; only about 15% of the population fall under the urban category. The sex ratio is better than the state level at 990 females per 1000 males. Almost 63% of the population is of the working class age. Of the worker population, about 47% are agricultural laborers. The WPR is relatively high at almost 42%.

Table 31-2: Demographic Indicators (2011)

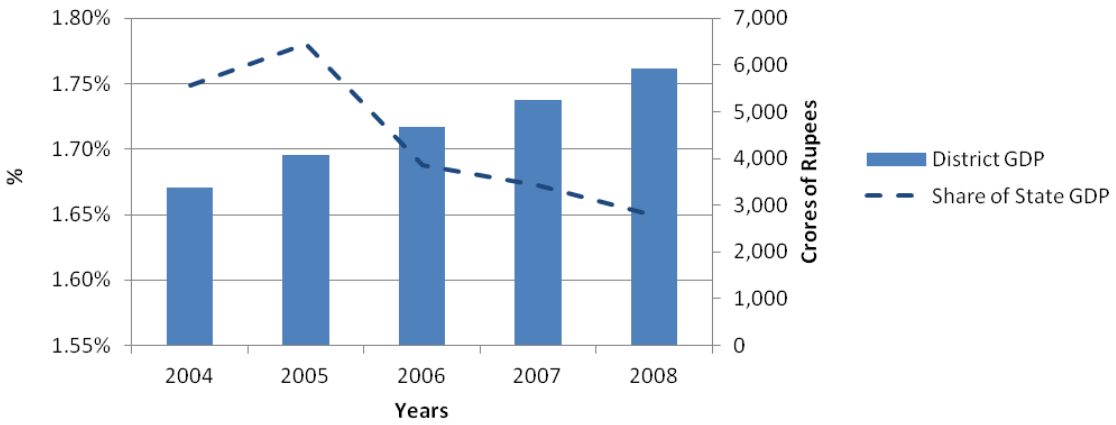
Population	Viluppuram	Tamil Nadu
Population	3,463,284	72,138,958
Share of state population (in %)	5	100
Population density (per sq. km.)	497.63	564
Urban population percentage	14.72	48.45
Total population annual growth rate (in %)	3.33	2
Urban population	509,876	34,949,729
Sex ratio (number of females per 1000 males)	985	995

Source: Census 2011 (Provisional)

31.3 Economic Profile

The districts contribution to the state GDP has been shaky. It has seen a low of 2.74% and has settled at about 2.81% in 2008-09. Viluppuram is an underdeveloped district and has been named one of the nation's 250 most backward districts. Per capita incomes are much lower than the state average and urban rural disparity is high with urban incomes being about 126% that of rural incomes. Human development indices were lower than the state average at 0.587 and 0.582 for HDI and GDI respectively.

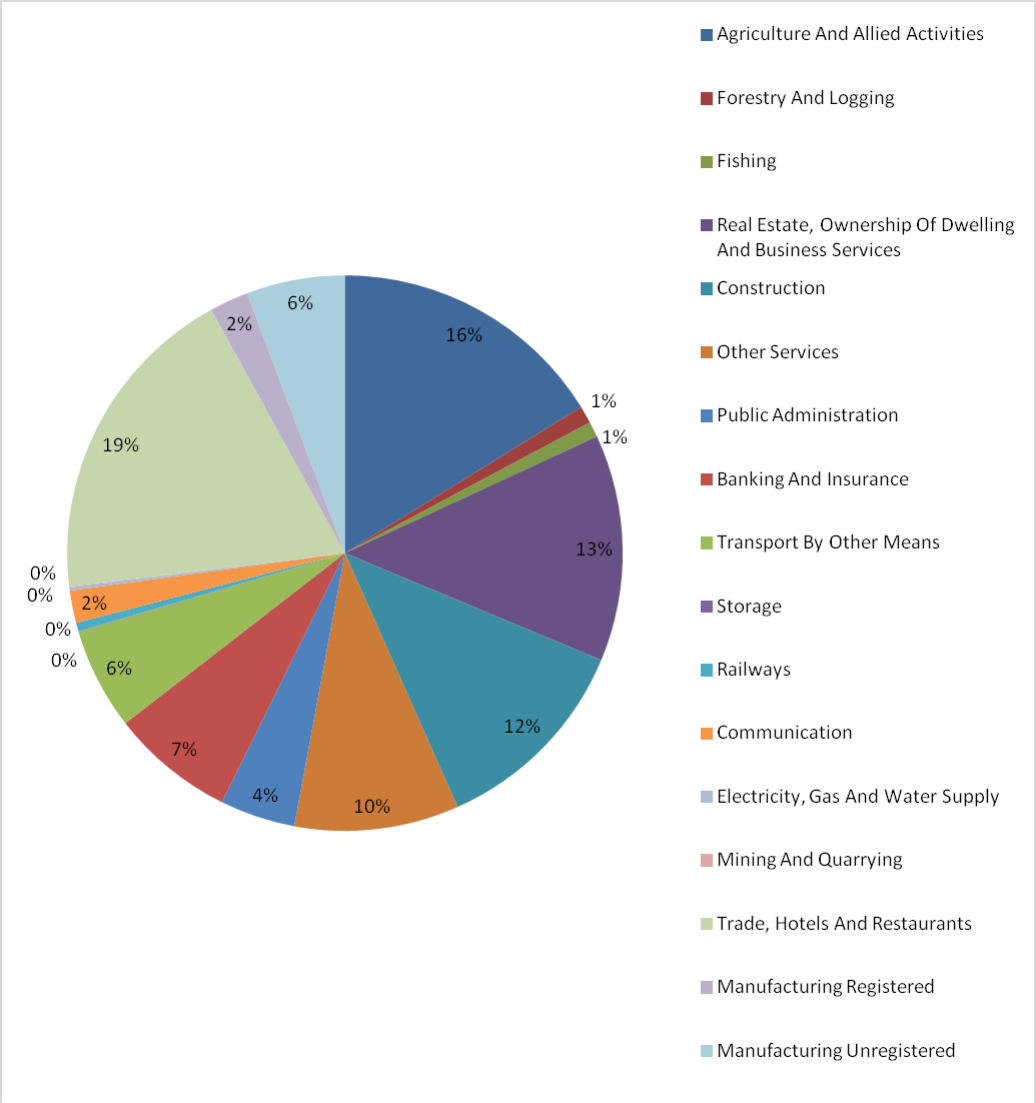
Figure 31.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Trade, hotels and restaurants are significant contributors to the district GDP at 19%. Other major contributors are real estate activities at 13%, construction at 12% and other services at 10 %. Manufacturing contributes just 6% to the district GDP. Agriculture contributes about 16% with fishing and forestry activities at 1% each.

Figure 31.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

31.3.1 Agriculture

Of the total working population in the district, over 90% are employed for the greater part of the year, while only 8% have been marginally employed. The number of cultivators and agricultural laborers constitute just about 30% of the total workers, while over 60% are engaged in either the secondary or tertiary sectors. The lower proportion of primary sector workers reflects the district inhabitants' inclination towards employment in more productive and beneficial sectors such as manufacturing or services.

Table 31-3: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	172,500	62.25%
Pulses	20,933	7.55%
Condiments	2,609	0.94%
Fruits and vegetables	24,431	8.82%
Other	56,656	20.44%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	56,463	47.35%
Cotton	6,544	5.49%
Oil Seeds	56,233	47.16%
Tobacco	1	0.00%
Other	0	0.00%
Total Area under Food Crops	56,463	47.35%
Total Area under Non Food- Crops	6,544	5.49%

Source: Tamil Nadu Crop Report (2011-12)

Around 69% of the total sown area is under food crops. Nearly 62% of this sown area is under cereals, 7% under pulses and 8% under fruits and vegetables. Non food crops include sugarcane, cotton and oil seeds. About 30% of the total sown area is under non-food crops. Almost 47% of this area goes to sugarcane, 5% is under cotton while oil seeds have a share of 47% of the remaining sown area. Yield is higher than the state for all crops except for pulses, condiments, vegetables and cotton, where it is lower than the state average.

Table 31-4: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield for Viluppuram	Yield for Tamil Nadu
Cereals	12,227	12,136
Pulses	2,523	2,763
Sugarcane	107	101
Condiments	10,236	32,440
Vegetables	82,555	164,422
Mango	4,795	4,795
Cotton	303	368
Tobacco	0	1,524
Oil seeds	16,689	16,484

Source: Tamil Nadu Crop Report (2011-12)

31.3.2 Industry

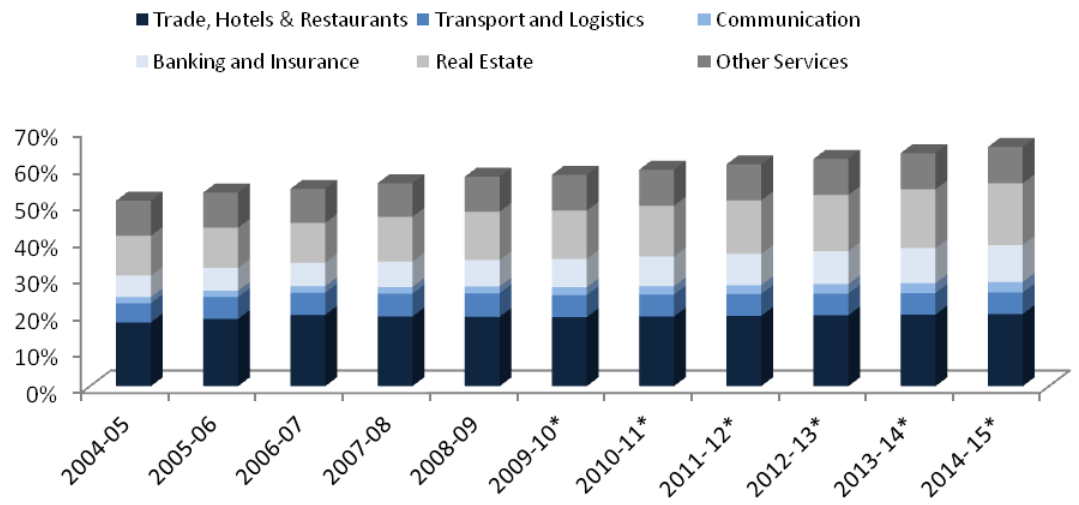
The level of industrialization is quite low in Viluppuram, with the major organized industrial units employing 1.62 lakh people. The majority of large and medium scale industries are agro processing based and/or government

owned. Some of these units include wheat mills at Vanur, yarn mills at Vikkavandi and Kattur, sugar mills in TV Nallur and Sankarapuram and alcohol and fat processing plants at Vikkavandi and Koliyanur. Cumulatively, these plants employ 1,959 people, with the sugar mills as a major player employing over 1,100 people. Primary research indicates that industrial activity in the district is restricted to agro based activities. Kallakurichi, Tindivanum and Sankarapuram have rice mills. There are a total of 65 rice mills equipped with the latest technology, wherein their total machinery value exceeds INR 3 crore. Tindivanam also houses a number of sugar making factories. There are six medium to large scale sugar making units. There are a few blue metal jelly making units in and around Sankarapuram too. Relatively higher produce for oil seeds has also led to a number of small scale oil extracting units cropping up in various areas of the district. There are also a few engineering component manufacturing units in the district.

The composition of the SME space reveals that the major areas of employment are also agro based, primarily in food processing, textiles, leather and other unregistered activities. Food processing employs 63% of the industrial work force, with about 14% engaged in transport and logistics.

31.3.3 Services

Figure 31.3: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

Despite the low level of economic activity in Villupuram, the contribution of the service sectors to district output is observed to display moderate growth, with trade, hotels and restaurants remaining the largest contributor to district GDP. The banking and insurance and real estate sectors also show a positive rise are expected to jointly contribute to 27% of the district GDP in 2014-15.

Approximately 2.07 lakh people are employed in organized services. The medical infrastructure is quite lackluster in Viluppuram. There are 21 hospitals, 3 dispensaries, 80 primary health centres and one mobile unit for the hill tribes. The number of doctors and nurses across the hospitals appears to be a little low, given the size and population of the district. There are more than 6,100 kilometers of surfaced roads running through the district. A significant length of un-surfaced roads, about 2278 kilometers, also runs through the district. The high proportion of un-surfaced to surfaced roads suggests a great need for improving infrastructure by converting

the un-surfaced roads to surfaced roads. Given the agrarian nature of the district, this is likely to improve market linkages and give a boost to agro based small scale industries. There are eight railway stations serving a track length of 180 kilometers. Given the district's large size, this is rather low, but must be balanced against the low industrial nature of the district.

31.4 State of Education

The literacy rate at 72% is below the state average but higher than other comparable districts. Both male and female literacy rose from 75.1% and 52.4% to 80.58% and 63.51% in the period from 2001-2011. It is worth noting that female literacy is low in the district. Viluppuram has over 5% of the state's schools and given its large land area, the schools are moderately distributed. Net enrollment ratios are particularly strong in the district. This is significant given the high rate of population growth and increasing proportion of the working age population to the total population.

Table 31-5: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	52.40	63.51	0.21
Male	75.10	80.58	0.07

Source: Census 2001, Census 2011(Provisional)

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 1,58,600, while enrolment in schools that had primary and upper primary classes was 1,38,054. Enrolment in upper primary schools was 651 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 73,416, while enrolment in schools with upper primary and secondary/ higher secondary classes was 85,996.

Table 31-6: Education Profile (2010-11)

Educational Statistics	Units in Viluppuram	Units in Tamil Nadu
Primary	1727	33,909
Upper primary	559	8,552
Secondary	249	4,436
Higher secondary	188	4,632
NER – Primary (%)	99.4	98
NER - Upper primary (%)	99.05	98
Dropout rate- Primary (%)	3.3	3.81
Dropout rate - Upper primary (%)	8.91	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

There are 16 engineering colleges and 3 arts and sciences colleges in the district. There is a hospitality college and there are five polytechnics in the district. The combined capacity of all the ITIs and ITCs in the district is 4,536.

Table 31-7: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	16
Arts and sciences	3
Management	0
Medical	0
Dental	0
Nursing	0
Pharmacy	0
Other medical	0
Teacher training and education	0
Hospitality	1
Fashion technology	0
Polytechnics	5
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

31.5 Incremental Human Resource Availability

The current work force is estimated to be 14.45 lakh, which is estimated to grow to 16.62 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 1.06 lakh and in 2017-22, the incremental availability is estimated to be 1.11 lakh.

Table 31-8: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	3,507	2,319	1,480	1,445		
2017	3,767	2,476	1,588	1,551	106	
2022	4,049	2,638	1,701	1,662		111

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level.

Table 31-9: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	78	5	23	106
2017-22	87	5	18	111

Source: Athena Research

31.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the unorganized sector and construction. Transportation and logistics, retail and BFSI are expected to see a moderate increase in human resource requirements. The human resource requirement in the agriculture sector is expected to decline by 95,000 in 2012-17 and 83,000 in 2017-22.

The sharp decline in human resource requirements in the agriculture sector may create an excess availability of human resources at the unskilled level. However, the level of industrial development is relatively low in the district and a large part of the service sector is unorganized.

Table 31-10: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-79	-2	-14	**-95**	-69	-2	-13	**-83**
Automobile	0	0	0	**0**	0	0	0	**0**
Chemicals and Pharmaceuticals	0	0	0	**0**	0	0	0	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	1	0	0	**1**	1	0	0	**1**
Furniture	1	0	0	**1**	1	0	0	**2**
Gems & Jewellery	0	0	0	**0**	0	0	0	**0**
Handlooms & Handicrafts	0	0	0	**0**	0	0	0	**0**
Leather	0	0	0	**0**	0	0	0	**1**
Textiles	1	0	0	**1**	1	0	0	**2**
BFSI	0	1	3	**4**	0	1	4	**5**
Construction	26	5	2	**34**	58	11	5	**74**
Education	0	0	0	**0**	0	0	0	**0**
Healthcare	0	0	0	**1**	0	0	0	**1**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	0	0	1	**1**	0	1	1	**2**
Organized Retail	3	1	2	**5**	5	1	3	**9**
Real Estate	0	0	1	**1**	0	0	2	**2**
Tourism & Travel	0	0	0	**0**	0	0	0	**0**
Transportation & Logistics	2	0	0	**2**	2	0	0	**3**
Unorganized (excluding Agriculture and Construction)	63	32	44	**139**	74	48	57	**179**
TOTAL	**18**	**38**	**40**	**97**	**74**	**62**	**62**	**198**

Source: Athena Research

31.7 Skill Gap

The largest skill gap is at the semi skilled level at 33,000 in 2012-17 and 57,000 in 2017-22. There is estimated to be an excess availability of human resources at the unskilled level due to the fall in human resource requirements in agriculture, without adequate growth in the other industrial sectors. At the skilled level, the gap is estimated to be 17,000 in 2012-17 and 43,000 in 2017-22.

Table 31-11: Skill Gap in 000's

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	18	38	40	**97**	74	62	62	**198**
Incremental Human Resource Availability	78	5	23	**106**	87	5	18	**111**
Skill Gap	**-60**	**33**	**17**	**-9**	**-13**	**57**	**43**	**87**

Note: Figures in negative indicate excess supply
Source: Athena Research

Qualitative Skill Gaps

Inadequate emphasis on entrepreneurship development

There are high levels of disguised unemployment in the district, due to high employment in agriculture and fragmented land holdings. Furthermore, most of the land area currently used for agricultural purposes is medium sized in nature, which does not allow for large scale mechanization process creating an excess supply of agricultural labourers, resulting in lower wages. The industrial activity is the district is also low and mainly consists of a few small and medium scale rice mills, who potential to absorb the local populace is limited.

In the absence of adequate local demand, emphasis must be laid on encouraging people to set up their own businesses through multi-skill programs. However there is not enough emphasis on this front.

31.8 Youth Aspirations

Table 31-12: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	**Low**
Employment Potential	**High**	Organized Retail	Construction
	Low	Electronics, Education	Agriculture, Chemicals

Source: Athena Research

Poor access to basic education

The development of educational facilities is very low in the district and is severely constrained by the low availability of infrastructure. The lack of access to good basic education makes skill training very challenging

since the students are not familiar with basic concepts and are often unable to absorb the skill training imparted to them

Negative attitude towards work

Skilling investments are depressed in the presence of welfare schemes by the Central Government like MNREGA, which provide minimum wages for performing manual labour. Further there is no incentive for students to acquire skills since there are very few employment options available and most industrial units are capital-intensive. These factors seem to have instilled a negative attitude towards work among the youth in the district

Lack of guidance and awareness regarding skill development

Recently a number of government schemes, like tax holidays have given a boost to industrial growth in the district. TNSDM too has recently started assessing the need for skill development in Villuppuram which are projected to result in more targeted skill development measures for the district. These measures are expected to encourage growth and increase demand for skilled labour within the district.

However the lack of awareness regarding the benefits of skill development and the associated economic opportunities is a key barrier preventing the youth from responding effectively to the changing economic profile of the district and is a major road block for the introduction of skilling initiatives.

31.9 Recommendations

31.9.1 State Government

Improve quality and access to basic education

The quality of basic educational facilities is low in the district and is constrained by the low availability of infrastructure. The lack of access to good basic education makes skill training very challenging since the students are not familiar with basic concepts and are often unable to absorb the skill training imparted to them. Most of the students choose to drop out of school by the sixth or eighth grade, which further acts a restraint on any developmental activities proposed.

Action Plan

a. Expand and rehabilitate basic educational infrastructure in backward regions to improve access
b. Build strong teacher training institutions, with a greater focus on the improvement of pedagogical methods and provide continuous training for contractual teachers
c. Use campaigns to improve community awareness and involvement to ensure the sustainability, maintenance and good management of the school and ensure that children stay in school at least till the 10th

Facilitate programs to encourage entrepreneurship

Lack of skilled development opportunities coupled with the lack of incentives to foster entrepreneurship is a major problem in this district. Despite the enthusiasm among the district's inhabitants to start their own enterprises, currently there is not enough emphasis on grooming people to set up their own business or encourage entrepreneurship.

Action Plan:

a. Train the youth in multiple skills, with greater emphasis on sectors which can support local self employment
b. The Entrepreneurship Development Institute in the state must play a more proactive role in financing and regulating entrepreneurship programmes for youth in the district
c. Disburse seed capital to the youth based on a set of pre-determined criteria at a lower interest rate
d. Expand the voucher scheme to include multi-skilling and entrepreneurship programs

31.9.2 Industry

Providing options for learning or pursuing skill development programs on the job

One of the causes for the low participation in vocational training in the district is the limited availability of In addition, creating opportunities for learning on the job, will help industries improve employee morale and the productivity of labour employed.

Action Plan:

a. Encourage employees to attend external seminars, training sessions and workshops
b. Incentivize employees to acquire additional skills on the job by enrolling in part time courses and link promotions and wage increases to additional skills acquired
c. Hold orientation programs to acclimatise workers to formal work environments
d. Broaden an employee's knowledge of other functions and departments in the organization to improve portability of skills
e. Arrange for periodic in-house training with a training consultant/ tie-up with training institutions to up-skill the employees through on the job-training programmes
f. Establish a sponsorship program for high performing employees and sponsor the acquisition of certain specialized skills of relevance to the firm

Provision of accommodation and other benefits to incentivise migration

The low wage rates coupled with the high cost of living in the state has remained a key barrier to intrastate migration. Youth graduating from vocational institutes prefer to remain in their home district and often enter the informal sector or remain employed/ underemployed owing to the high costs associated with migrating to other districts. Surveys with the youth in the district revealed the absence of accommodation facilities at affordable rates as being a critical factor preventing intra-state migration.

Action Plan:

a. Create accommodation facilities in close proximity to the area of work and allocate the same to migrant labour
b. Create a system of reimbursements, where the expenditure incurred on rents by the migrant employee is reimbursed on actuals.
c. Provide other key fringe benefits including health insurance

31.9.3 Training Providers

Improve the quality of instructors

Primary surveys in the district reveal that most training institutes suffer from the lack of good quality instructors. In the absence of good instructors to deliver the training, the overall student morale is observed to be low.

Action Plan:

a. Revise and standardize the qualifications of teachers to suit the new curriculum standards
b. Induct teachers into the new curriculum and conduct a set of orientation courses to equip the teachers to deliver the new curriculum
c. Raise compensation for trainers to attract quality trainers and restructure the pay scales with a larger variable component linked to performance
d. Undertake training sessions in-house to up-skill instructors on courses.

Improve the enrolment of girls

Surveys in the district indicate that a gender blind approach towards delivering training have not worked very well in the backward regions of the district. Most of these areas are seen to register a very low level of enrolment of girls, owing to hesitation by their families to send the girls to an institution for training. There is a clear need to introduce mechanisms to encourage people to send girls to the training centre.

Action Plan:

a. Deploy female trainers in training centres in the backward regions. Women trainers provide safety and protection for the girl students and are seen to give them the confidence and opportunity to follow their own paths
b. Undertake community outreach drives and hold interactions with parents on the benefits of skilling their girl child

31.9.4 NSDC

Entrepreneurship workshops

Workshops may be conducted in the district to provide basic training and information for aspiring entrepreneurs.

Action Plan:

a. Collaborate with local NGOs and industry to mobilize students.
b. Impart basic training for entrepreneurship.
c. Provide guidance on sources of finance, government assistance and other resources that entrepreneurs may access.
d. Provide access to online resources for entrepreneurship information.

Capacity Creation

There is a need for focused capacity creation for sectors such as construction and retail.

Action Plan:

a. Set up training facilities in industrialized parts of the district to ensure proximity to potential employers.
b. While the youth do not show much resistance to migration, adequate infrastructure and facilities must be provided at the training location to incentivize them to enroll in vocational training.
c. Focus on semi skilled level courses for sectors such as automobile.
d. Offer career counseling to control drop outs from the institute and attrition from industry.

32 Virudhunagar

32.1 Overview

Formerly known as 'Karmavirer Kamarajar' district, Virudhunagar was formed in 1985 from parts of Tirunelveli and Madurai districts. Spanning a total area of 4300 square kilometers, the district is located in south Tamil Nadu. Madurai and Sivaganga districts border the north of Virudhunagar, while Ramanathapuram borders the east, Tirunelveli and Thoothukkudi are located in the south and the state of Kerala frames the eastern side of the district. Administratively, the district is divided into 2 revenue divisions, split into 8 taluks and 11 blocks. In addition, there are 7 municipal corporations, 600 revenue villages and 450 panchayats.

Table 32-1: Basic Information (2010-11)

District Information	Virudhunagar	Tamil Nadu
Number of inhabited villages	501	15,400
Area (Sq Km)	4,300	127,905
% of state area	3.36	100
Area rank	15	-
Revenue divisions	2	-
Taluks	8	-
Blocks	11	-
Corporation & municipalities	7	-
Town panchayats	9	-
Revenue villages	600	-
Panchayat Villages	450	-

Source: District Statistical Handbook (2010-11)

32.2 Demographic Profile

According to the provisional figures of Census 2011, Virudhunagar has a population of about 19 lakh with a population density of 450 per square kilometer, slightly lower than the state average. The annual population growth rate of the district closely follows the state average at 1.88%, suggesting stable population growth over the next few years. The district is relatively more urbanized than its counterparts; 50% of the population resides in urban areas. The proportion of working age population to the total population is high too, at 65%. The Worker Participation Ratio is however considerably lower than the availability of working age population, at 45%. The district also has a lower share of agricultural laborers, 8% below the state average at about 22%.

Table 32-2: Demographic Indicators (2011)

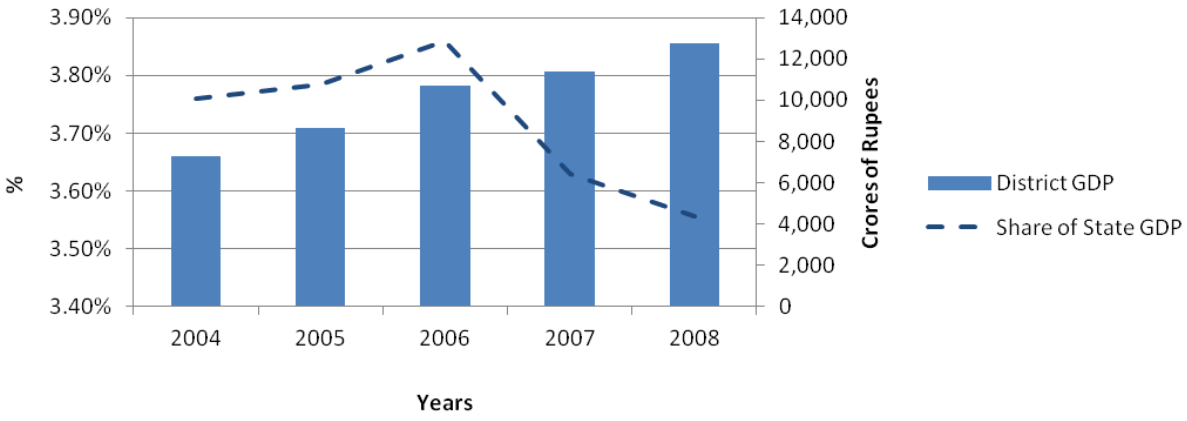
Population	Virudhunagar	Tamil Nadu
Population	1,943,309	72,138,958
Share of state population (in %)	3	100
Population density (per sq. km.)	451.93	564
Urban population percentage	50.42	48.45
Total population annual growth rate (in %)	1.88	2
Urban population	979,728	34,949,729
Sex ratio (number of females per 1000 males)	1009	995

Source: Census 2011 (Provisional)

32.3 Economic Profile

The contribution of the district to state GDP has varied between a high of 3.85% and a low of 3.55%. The contribution has declined steadily in recent years and is about 3.55% in 2008-09. Per capita urban incomes are low relative to the state, and urban rural disparity is wide. Development indicators for the district are fairly consistent with the state average. The HDI and GDI indicator figures are 0.651 and 0.649 respectively, while the sex ratio is considerably higher at 1009 females per 1000 males. Virudhunagar is one of the few districts in the state that enjoys a low poverty rate that is below 30%.

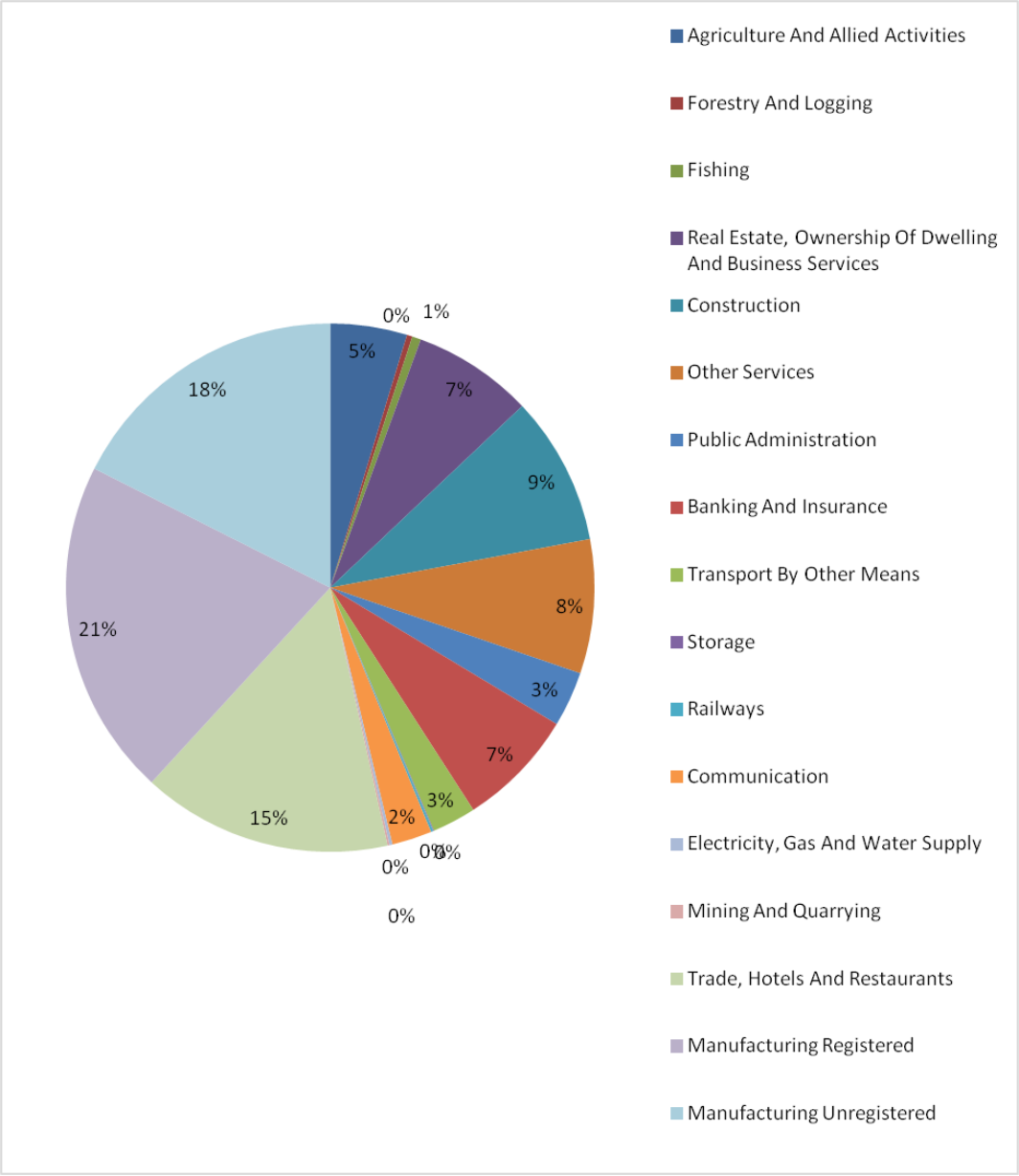
Figure 32.1: District GDP Growth and % Share of State GDP for 2004-2008



Source: Department of Economics and Statistics (2008-09)

Manufacturing accounts for 21% of the district GDP, followed by unregistered manufacturing at 18% and trade, hotels and restaurants at 15%. Agriculture accounts for 5% while fishing activities accounts for another 1%. Other major sectors include construction, banking and financial services and communication.

Figure 32.2: Composition of District GDP at Constant Prices (2004-05) for 2008-09



Source: Department of Economics and Statistics (2008-09)

Table 32-3: Per Capita Income (2011-12)

Human Development Indicators	Virudhunagar	Tamil Nadu
Per capita urban income	48,000	100,600
Per capita rural income	32,000	39,400

Source: Indicus Analytics: Market Skyline of India (2011-12)

32.3.1 Agriculture

Of the total working population in the district, over 90% are employed for the greater part of the year, while only 8% have been marginally employed. The number of cultivators and agricultural laborers constitute just about 30% of the total workers, while over 60% are engaged in either the secondary or tertiary sectors. The lower proportion of primary sector workers reflects the district inhabitants' inclination towards employment in more productive and beneficial sectors such as manufacturing or services.

Around 68% of the total sown area is under food crops. Nearly 62% of this sown area is under cereals, 17% under pulses and 8% under condiments. Non-food crops include sugarcane, cotton, and oil seeds. Over 31% of the total sown area is under non-food crops. A major portion of this is under oil seeds and cotton, at 23% each. Yield is well below the state average for all crops except sugarcane.

Table 32-4: Major Crops: Area and Percentage Share Sown in 2011-12

Food Crop	Area Sown	Percentage of Area Sown
Cereals	58,883	62.09%
Pulses	16,695	17.60%
Condiments	7,930	8.36%
Fruits and vegetables	7,149	7.54%
Other	4,177	4.40%
Non-Food Crop	**Area Sown**	**Percentage of Area Sown**
Sugarcane	3,790	8.87%
Cotton	10,141	23.73%
Oil Seeds	9,903	23.18%
Tobacco	0	0.00%
Other	18,893	44.22%
Total Area under Food Crops	**94,834**	**68.94%**
Total Area under Non Food- Crops	**42,727**	**31.06%**

Source: Tamil Nadu Crop Report (2011-12)

Table 32-5: Major Crops: Yield in KG per Hectare in 2011- 12

Crop	Yield for Virudhunagar	Yield for Tamil Nadu
Cereals	11,056	12,136
Pulses	1,978	2,763
Sugarcane	104	101
Condiments	5,499	32,440
Vegetables	106,649	164,422
Mango	2,877	4,795
Cotton	236	368
Tobacco	0	1,524
Oil seeds	11,339	16,484

Source: Tamil Nadu Crop Report (2011-12)

32.3.2 Industry

Historically, the industrial sector of the district has been dominated by the enterprises at Sivakasi taluk. Named the 'Little Japan' of India by the then Prime Minister Jawaharlal Nehru, the industries in Sivakasi are well developed and generate ample employment opportunities. The major industries in the district employ 55,000 people. There are three main industrial sub sectors in Sivakasi – the match industry, the fireworks industry and the paper industry. The South Indian Lucifer Match Industry was the first ever match industry set up in the taluk, in 1923. The match industry developed rapidly in the district and today meets 55-60% of India's match requirements and grows at a formidable rate of 10% annually. On account of the industry being labor intensive, it generates substantial amount of employment for the residents of the district. It is estimated that of the total workforce in the district, 30,000 people are directly employed by the match industry.

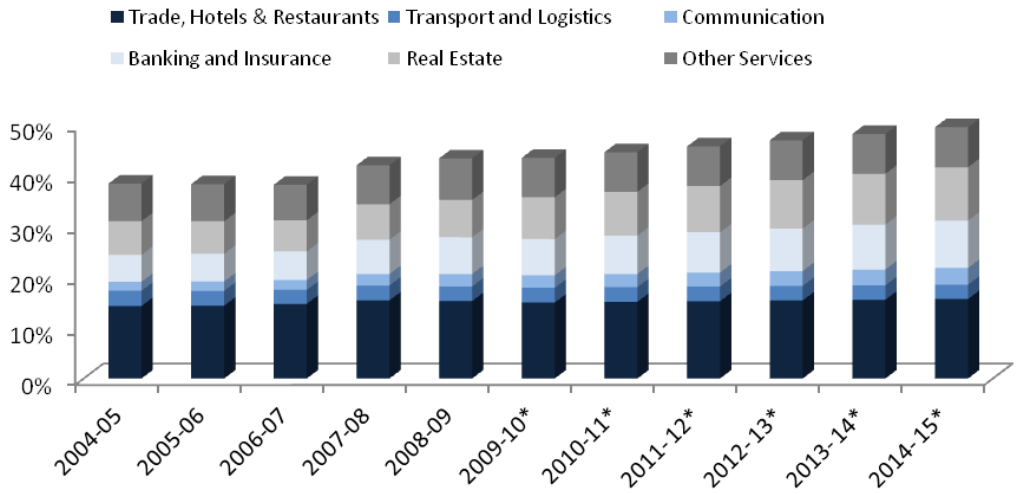
Much like the match industry, the first fireworks factory was set up in Sivakasi in 1923. This subsector has grown phenomenally both in terms of number of factories and the employment generated. There are 450 fireworks factories in the district, directly employing 40,000 workers and providing indirect employment to about one lakh people. The factories have a combined turnover of INR 350 crore and are set to grow at a rate of 10% per year.

The printing industry too has witnessed exponential growth in the district. Sivakasi is home to the second largest number of offset printing machines. The first ever printing factory was set up in 1937; since then, 450 printing presses have been established in the district and taluk. The printing presses too generate substantial employment opportunities – currently this subsector employs 50,000 workers directly and indirectly. Integration of advanced technology has furthered the growth of this subsector, while the establishment of The Sivakasi Institute of Printing Technology has considerably added to the skill levels of the workforce.

According to Capex data for 2011-12, the cement and cloth industry receive the maximum investments in the district, which are to the tune of INR 275 crore and 87 crore respectively in the medium term.

32.3.3 Services

Figure 32.3: Contribution to District GDP



Source: Department of Economics and Statistics, Government of Tamil Nadu

**- Forecasts*

The district of Virudhunagar is expected to see moderate growth in service sectors, with the contribution from service sector to district output, expected to rise from 43% in 2008-09 to 50% in 2014-15. Trade, hotels and restaurants, remain the largest contributor to the service sector and is expected to contribute to 16% of district output in 2014-15.

Over 2.4 lakh people are employed in the services sector. The trade and commerce subsector have been historically well developed in the district; this subsector has been involved in marketing and distribution of commodities since the British era and has a particularly well developed network for purchase of goods and other commodities in the district. The trading activities are limited to agricultural products and certain textile products.

Infrastructural facilities in the district are moderately developed. There are 19 hospitals and 55 primary health centres, with 245 health sub centres in most of the towns and villages of the district. Further, there are 58 beds per hospital, 155 doctors and 266 registered nurses, tending to the needs of the district's inhabitants. In terms of transport too, the district is considerably well developed, with over 450 kilometers of highways and 160 kilometers of railway routes. There are 10 railway stations within the district, hinting at moderate levels of connectivity.

The district also houses a few religious sites, natural parks and waterfalls that attract visitors around the year. This has led to the establishment of a small hospitality sector comprising 22 registered hotels and restaurants in the district.

32.4 State of Education

The district has a literacy rate of about 81%, higher than the state average. Over the last decade, Virudhunagar has witnessed considerable development with regard to the educational scenario. The overall literacy rate has

increased, with the female literacy rate displaying a rise of about 10%, from 63% in 2001 to 73% in 2011. Male literacy too has increased from 83.96% in 2001 to 88.46% in 2011.

Table 32-6: Decadal Growth of Literacy 2001-2011 (in %)

Literacy	2001	2011	Decadal Growth Rate
Female	63.60	73.14	0.15
Male	83.96	88.46	0.05

Source: Census 2001, Census 2011(Provisional)

There are 1,081 primary schools, 239 upper primary schools, 103 secondary and 143 higher secondary schools in the district. Net enrollment ratios are high for the primary level, at nearly 99%, but drop off to 97% for the upper primary level. Dropout rates are low at the primary level at 2.8% and at the upper primary level at 4.3%.

According to the District Report Cards compiled by the District Information System for Education (DISE), the total enrolment in primary schools in 2010-11 was 1,19,750, while enrolment in schools that had primary and upper primary classes was 65,167. Enrolment in upper primary schools was 216 in the same period. For schools with primary, upper primary and secondary/ higher secondary classes, total enrolment was 23,388, while enrolment in schools with upper primary and secondary/ higher secondary classes was 69,642.

Table 32-7: Education Profile (2010-11)

Educational Statistics	Units in Virudhunagar	Units in Tamil Nadu
Primary	1081	33,909
Upper primary	239	8,552
Secondary	103	4,436
Higher secondary	143	4,632
NER – Primary (%)	98.71	98
NER - Upper primary (%)	97.16	98
Dropout rate- Primary (%)	2.8	3.81
Dropout rate - Upper primary (%)	4.33	7.58

Source: District Information System for Education (2011-12), Secondary Education Management Information System (2011-12)

There are eight engineering colleges and six arts and science colleges in the district. There is also a management college and a hospitality college. There are eight polytechnics in the district. The combined capacity of all the ITIs and ITCs in the district is 3,528. The details of the major ITIs in the district are given in the appendix.

Table 32-8: Higher Education Profile (2010-11)

Field	No. of Colleges
Engineering	8
Arts and sciences	6
Management	1
Medical	0
Dental	0
Nursing	0
Pharmacy	0
Other medical	0
Teacher training and education	0
Hospitality	1
Fashion technology	0
Polytechnics	8
Agriculture	0

Source: UGC, AICTE, MHRD Database (2010-11)

32.5 Incremental Human Resource Availability

The current work force is estimated to be 8.07 lakh, which is estimated to grow to 9.45 lakh by 2022. The incremental availability of human resources in 2012-17 is estimated to be 66,000 and in 2017-22, the incremental availability is estimated to be 72,000.

Table 32-9: Human Resource Availability in 000s

Year	Population	Working Age Population	Labour Force	Work Force	Incremental Availability 2012-17	Incremental Availability 2017-22
2012	1,960	1,296	827	807		
2017	2,096	1,379	893	873	66	
2022	2,247	1,468	966	945		72

Source: Athena Research

The highest incremental human resource availability is expected at the unskilled level, while the lowest incremental availability is estimated at the semi-skilled level.

Table 32-10: Incremental Human Resource Availability by Skill Level in 000s

INCREMENTAL HUMAN RESOURCE AVAILABILITY (in 000s)	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
2012-17	44	7	15	66
2017-22	46	9	18	72

Source: Athena Research

32.6 Incremental Human Resource Requirement

The incremental human resource requirement will be highest in the unorganized sector, construction and textiles. Other service sectors are expected to see a moderate increase in human resource requirements. The human resource requirement in the agriculture sector is expected to decline by 29,000 in 2012-17 and 25,000 in 2017-22.

The long term growth sectors for Virudhunagar appear to be textiles and construction. The district has a large handloom cluster. However, the sector shows an overall declining trend. Service sectors will require an enabling environment for growth and will accompany overall economic growth in the district.

Table 32-11: Incremental Human Resource Requirement by Industry and Time Period in 000s

INCREMENTAL HUMAN RESOURCE REQUIREMENT (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Agriculture	-24	-1	-4	**-29**	-21	-1	-4	**-25**
Automobile	0	0	0	**0**	0	0	0	**0**
Chemicals and Pharmaceuticals	8	10	15	**0**	7	10	15	**0**
Electronics Hardware	0	0	0	**0**	0	0	0	**0**
Food Processing	3	0	1	**3**	4	0	1	**5**
Furniture	1	0	0	**1**	2	0	0	**2**
Gems & Jewellery	0	0	0	**1**	1	0	0	**1**
Handlooms & Handicrafts	-1	0	0	**-1**	-1	0	0	**-1**
Leather	0	0	0	**1**	1	0	0	**1**
Textiles	5	1	1	**7**	7	1	2	**10**
BFSI	0	1	4	**5**	0	2	5	**7**
Construction	28	5	3	**36**	62	12	6	**79**
Education	0	0	1	**1**	0	0	1	**1**
Healthcare	0	1	2	**3**	0	1	2	**3**
IT and ITES	0	0	0	**0**	0	0	0	**0**
Media & Entertainment	0	1	1	**2**	0	1	2	**4**
Organized Retail	3	1	2	**6**	5	1	4	**10**
Real Estate	0	0	1	**1**	0	0	1	**2**
Tourism & Travel	0	0	0	**0**	0	0	0	**0**
Transportation & Logistics	1	0	0	**1**	1	0	0	**2**
Unorganized (excluding Agriculture and Construction)	35	18	25	**78**	42	27	32	**101**
TOTAL	**60**	**38**	**50**	**117**	**109**	**56**	**67**	**202**

Source: Athena Research

32.7 Skill Gap

The largest skill gap is at the semi skilled level at 31,000 in 2012-17 and 48,000 in 2017-22. The growth of less skill intensive sectors such as construction and textiles, along with the falling population growth is likely to lead to a skill gap at the unskilled level as well. At the skilled level, the gap is estimated to be 36,000 in 2012-17 and 49,000 in 2017-22.

Table 32-12: Skill Gap in 000s

DISTRICT SKILL GAP (in 000s)	2012-2017				2017-2022			
	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL	UNSKILLED	SEMI SKILLED	SKILLED	TOTAL
Incremental Human Resource Requirement	60	38	50	**117**	109	56	67	**202**
Incremental Human Resource Availability	44	7	15	**66**	46	9	18	**72**
Skill Gap	**17**	**31**	**36**	**51**	**64**	**48**	**49**	**129**

Source: Athena Research

Qualitative Skill Gaps

Low willingness to perform routine tasks

There is a shortage of labour supply for a number of industrial units, owing to the increasing preference by the locals to set up their own industrial units rather than work in other industrial units as a shop floor machine operator. This has led to a significant shortage of semi-skilled workers, particularly to work on the shop floor, to do some routine tasks.

Low productivity of migrant labour

Most of the migration is inward and generally consist of unskilled people who come in search of temporary employment in the industrial units. They do not add much to the overall productivity of the economy of the district though, and so the contribution of migration is not very substantial.

Mismatch between the changing industry demands and skills

The economic profile of Virudhunagar has undergone significant change and the district is increasingly becoming a trading hub. Apart from trading, other new industries such as oil mills and plastic container manufacturing have also developed in the headquarters. Rajapalayam is primarily known for its spinning mills, while the industrial activity in Sattur is more diverse, composed of a number of handmade garments units, hosiery and fabrication units and rice mills. Sivakasi too has undergone some changes over the last few years. Earlier, the district used to be known for its fireworks, but printing presses in this *taluk* are now generating more volumes and revenues than the fireworks units. These changes in the district have altered its labour requirements. However there is not enough emphasis to skill people to adapt to the changing economic environment. This has created serious labour shortages for semi-skilled and skilled labour in the district.

Poor linkage between industry and vocational institutes

The industrial units that have been set up all across the district are relatively young are facing serious shortages in labour supply, owing to mismatch between the skills delivered at the vocational institutes and the industry requirement. This mismatch is primarily caused due to the poor linkages between the industry and the

vocational institutes and the absence of a feedback mechanism to collect industry inputs on the quality and relevance of training.

32.8 Youth Aspirations

Table 32-13: Youth Aspirations by Sector and Employment Potential

SECTOR INTERESTS		Youth Aspirations	
		High	Low
Employment Potential	High	Textiles, BFSI	Construction
	Low	IT/ITES, Transport and Logistics	Agriculture, Chemicals

Source: Athena Research

Poor attitude toward lower level skills

The graduates and diploma holders in the district seem to have many preconceived notions and are not willing to perform operator level jobs. Diploma holders often want desk jobs, project development work or engineering jobs, which they do not have the skill or knowledge to perform.

High cost of training and poor working conditions deemed to be key barriers

There are very few ITIs set up near industrial estates, but they do not receive many applications as they aren't funded by the government. Interviews with students revealed that they considered the cost of training associated with vocational education as being prohibitive and a key barrier. The absence of adequate compensation post graduation and the low social status attached to these skills was seen to further lower the number of youngsters willing to opt for the vocational route. These vocational education institutions offer courses which lead to employment opportunities at the factory shop floor level, with poor working conditions, which may be another factor contributing towards the lack of interest in enrolling in such institutes

Lack of guidance and career counselling

The educational choices of the youth and their aspirations seem to be driven by factors that are not grounded in reality. Further, most of the youth interviewed seemed to want a well-paying job immediately after graduation, but payed little or no attention to building a career. The absence of a structured guidance and counselling mechanism to help students assess their aptitude and encourage them take up suitable courses is a key factor contributing to this mismatch. This coupled by the lack of awareness about the benefits of targeted skilling and up skilling have led to fewer youth taking on vocational courses after their 10th or 12th.

32.9 Recommendations

32.9.1 State Government

Strengthen training infrastructure at ITIs/ITCs through the introduction of reform linked schemes

The ability of ITIs and ITCs in the district to deliver quality skills is highly restrained by the absence of well maintained and functional infrastructure and inventory. This calls for a set of concerted initiatives to reform and improve the status of infrastructure across ITIs.

Action Plan:

a. Develop a manual prescribing standard architectural norm for all ITIs/ITCs, to ensure optimal use of space.
b. Evaluate the level of compliance among existing ITIs/ITCs to the prescribed architectural standards and identify gaps
c. Revise the equipments prescribed under NCVT norms and make them more relevant to industry requirements
d. Create a toolkit to enable ITIs to undertake a self-assessment of the status of their training infrastructure and submit annual reports to the Tamil Nadu Skill Development Mission
e. Introduce reform-linked schemes to incentivize ITIs/ITCs to improve the status of training infrastructure

Increase penetration of skill development in rural and backward areas

The access to skill training continues to remain a challenge in the district, especially among women and the rural youth. The need to travel long distances is a key disincentive. Further, low awareness on the benefits of skill development coupled by the absence of adequate hostel and accommodation facilities at institutes are seen to have an adverse impact on student enrolment and retention at ITIs.

Action Plan:

a. Promote the idea of mobile classrooms
    - Recruit and train instructors to go to remote areas in the district and train students in select trades of local relevance or popular skill such as carpentry/joinery, plumbing, electrical and painting.
    - Provide the instructors with the required inventory and infrastructure such a as a large van containing all the tools, equipment and materials needed
b. Use a hub and spoke approach, where satellite campuses for a hub ITI may be set up in remote areas. The hub will operate as an aggregator of demand and support the spokes (satellite campuses) with respect to placements and counselling, while a set of trainers may be deployed in the satellite campus to deliver the curriculum
c. Provide hostel and other accommodation facilities at the vocational centres to improve enrolment and retention
d. Undertake skill awareness campaigns and conduct outreach programs in backward areas through SHGs

32.9.2 Industry

Protect the health and safety of employees

The low level of compliance to the occupational safety and health norms is one of the causes for low interest in blue collar jobs. Further, the variable and insecure nature of the work for semi-skilled and unskilled workers means that more and more workers are pushed into taking up hazardous and precarious employment both in the informal economy as well as informal work in the formal sector.

Action Plan:

a. Industry must initiate efforts to provide and maintain plant and machinery that is safe.
b. Ensure that work is performed under the supervision of an individual trained in safety issues and trained to take precautionary measures.
c. Create a simple manual both on how to prevent accidents and what needs to be done in case of accidents

Gender sensitisation at the work place

In order to raise the participation of women in vocational education as well as the workforce, it is important to undertake gender sensitization activities at the work place to ensure that there is no discrimination against women.

Action Plan:

a. Create strong gender policies, emphasizing the need for parity in terms of access to promotions, wage rates and devote resources to put the policy into practice
b. Offer non-gender stereotyped roles and choices for both men and women
c. Institutionalize women's access to decision making roles
d. Create a strong redressal mechanism to resolve concerns in a time bound manner

32.9.3 Training Providers

Targeted Courses and Flexible Payment Schemes

A major constraint identified for highly technical courses is the access to educational credit. It is recommended that training providers build partnerships with government and industry to set up flexible payment schemes for technical courses.

Action Plan:

a. Skill training providers may offer flexible modes of payment for courses for the students through fee structures that require payments in instalments rather than a lump sum.
b. Performance incentives for trainers are likely to improve the quality of training delivery. Performance may be evaluated by the performance of the students in evaluations and the placement percentage.
c. Courses must be geared towards industry needs by gathering industry perspectives at the end of placement seasons are likely to ensure relevance of the training.
d. Regular alumni interactions will help improve training delivery and provide industry perspectives to the students.

Emphasis on Basic Skills and Portability of Skills

Fluctuations in business climate and change in demand patterns often render workers with highly specialized skills jobless. For the unorganized sector in particular, highly specialized courses are not suitable, since they are required to perform multiple roles. Chennai has one of the largest unorganized sectors in the state.

Action Plan:

a. Multi-skilling courses that provide skills across jobs within a sub-sector should be offered at the semi-skilled level. Fungible skills that can be applied across different sectors should be prioritized, thereby ensuring portability of skills.
b. Training must begin with basic concepts since many of the students reported their inability to grasp new concepts due to poor or inadequate basic education.
c. Training providers are recommended to form partnerships with schools, local bodies and NGOs in order to effectively target students.
d. Student mobilization through direct interactions with the prospective students is likely to be more effective than indirect methods such as advertising, particularly for the lower skill levels.

32.9.4 NSDC

Community engagement for student mobilization

Student mobilization may be strengthened through greater community engagement, particularly in rural areas for sectors such as food processing and textiles.

Action Plan:

a. Provide incentives such as flexible course timings to encourage students to enroll in vocational training.
b. Collaborate with local NGOs to mobilize students for training programs.
c. Establish strong industry linkages to create a link between employment and training to raise interest in vocational training.

Capacity Creation

There is a need for focused capacity creation for sectors such as construction and textiles at the semi-skilled level. It is recommended that institutes be set up in industrial areas with rationalized fee structures, flexible payment modes and strong industry linkages.

Action Plan:

a. Set up training facilities in industrialized parts of the district to ensure proximity to potential employers.
b. Adequate infrastructure and facilities must be provided at the training location to incentivize the youth to enroll in vocational training.
c. Focus on semi skilled level courses for sectors such as automobile.
d. Offer career counseling to control drop outs from the institute and attrition from industry.

33 APPENDIX

33.1 DETAILS OF PRIMARY RESEARCH

33.1.1 Government Interviews

1. District Employment Officer - Ariyalur
2. District Employment Officer - Coimbatore
3. District Employment Officer - Cuddalore
4. District Employment Officer - Dharmapuri
5. General Manager, DIC - Dindigul
6. Project Director, DRDA - Erode
7. District Employment Office (Assistant Director) - Kancheepuram
8. Project Director, DRDA - Kanniyakumari
9. Additional Collector - Karur
10. General Manager, DIC - Krishnagiri
11. District Collector - Madurai
12. General Manager, DIC - Nagapattinam
13. General Manager, DIC - Namakkal
14. District Employment Officer - Perambalur
15. General Manager, DIC - Pudukkottai
16. General Manager, DIC - Ramanathapuram
17. District Employment Officer - Salem
18. General Manager, DIC - Sivaganga
19. District Employment Officer - Thanjavur
20. Assistant Director, DIC - The Nilgiris
21. District Employment Officer - Theni
22. Project Manager, DIC - Thiruvallur
23. General Manager, DIC - Thiruvarur
24. District Employment Officer - Thoothukkudi
25. District Employment Officer - Tiruchirappalli
26. District Employment Officer - Tirunelveli
27. General Manager, DIC - Tiruppur
28. District Employment Officer - Tiruvannamalai
29. General Manager, DIC - Vellore
30. General Manager, DIC - Viluppuram
31. General Manager, DIC - Virudhunagar
32. Joint Director, Department of Industries and Commerce - Chennai
33. Regional Joint Director - Madurai
34. Regional Joint Director - Cuddalore
35. Regional Joint Director - Chennai
36. Regional Joint Director - Coimbatore

33.1.2 Industry Interviews

1. Titan Industries Limited
2. True Value Homes
3. TV Sundaram Iyengar & Sons
4. Malladi Drugs and Pharmaceuticals
5. Courtyard Marriott
6. St. Gobain
7. KG Hospital and Post Graduate Institute
8. Aravind Eye Hospital and PG Institute of Opthamology
9. Aachi Masala Foods Pvt. Ltd.
10. Kotak Mahindra
11. Larsen & Toubro Engineering and Construction Company
12. KG Hospital
13. Coimbatore District Small Industries Association (CODISSIA)
14. IL&FS Cluster Development Initiative
15. JK Media Vision
16. Ajuba Solutions
17. Indian Agriculture Research Institute
18. Hosur Industries Association
19. Knitvel Needles Pvt. Ltd.
20. Elkayem Auto Ancilliaries Pvt. Ltd.
21. Dhanunjaya's Luxury Hotel
22. Sri Inba Vinayagar WCS (Madurai Office of Handlooms and Textiles)
23. ELCOT
24. TeamLease Services
25. Nadeem Leatherware Exports
26. HR Anexi
27. Advanced Training Institute, Ministry of Labour and Employment, Government of India
28. Loyal Textile Mills
29. Everonn Skill Development Limited
30. Villavarayar and Sons
31. Orient Express Lines
32. Veppalodai Salt Industries
33. Diamond Seafood
34. Iris Consulting
35. Khadi Grama Udyog Bhavan
36. LMS India

33.1.3 Training Providers

1. TeamLease
2. Talent Sprint
3. King Institute of Hotel Management
4. VETA
5. Vaanavam
6. Integrated Village Development Project
7. Pudhu Vaazhvu
8. Nilgiri Adivasi Welfare Association
9. Construction Labourers Panchayat Union

10. University of Madras
11. IIT Madras
12. ITI Chennai
13. ITI (W) Chennai
14. ITI Chekkanurani (Madurai)
15. ITI Erode
16. ITI Ranipet (Vellore)
17. ITI Dharmapuri
18. ITI Perambalur
19. ITI Nagapattinam
20. ITI Sivaganga
21. ITI Namakkal
22. ITI Cuddalore
23. ITI Nagercoil (Kanniyakumari)
24. ITI (W) Ambattur (Thiruvallur)
25. ITI (W) Salem
26. ITI Mettur Dam
27. ITI Pudukkottai
28. ITI Hosur
29. NITTTR Chennai

33.1.4 Surveys

Unorganized Sector: 35

Employed Youth: 50

Unemployed Youth: 64

33.1.5 Focus Group Discussions

Number of Discussions: 25

Number of Participants: 245

33.2 DISTRICT-WISE DETAILS OF ITIs and ITCs

ARIYALUR

ITI/ITC	Trade	Capacity
A.C. ITC	Electrician	84
Govt. ITI, Andimadam	Fitter	84
	Instrument Mechanic	42
	Welder (Gas & Electric)	42
	Mechanic (Motor Vehicle)	42
Total Capacity		294

Source: Department of Employment and Training (2011), Athena Research (2012)

CHENNAI

ITI/ITC	Trade	Capacity
Anjuman Industrial Training Centre	Cutting and Tailoring renamed as Cutting and Sewing	21
	Computer Operator and Programming Assistant	42
	Carpenter	21
	Draughtsman (Civil)	84
	Electrician	84
	Embroidery & Needle Work	21
	Fitter	84
	Mechanic Radio and Television	42
	Welder	42
S.I.E.T.V.T Institute	Cutting and Tailoring renamed as Cutting and Sewing	21
	Leather Goods Maker	21
	Mechanic Radio and Television	21
	Secretarial Practice	42
J.J. ITC	Computer Operator and Programming Assistant	42
	Information Technology & Electronics System Maint.	42
Brilliant ITC	Electrician	84
	Mechanic (Diesel)	42
	Mechanic (Refrigeration and Air Conditioning)	84
Swami Vivekananda ITC	Computer Operator and Programming Assistant	21
MIET ITC	Electrician	63
	Electronics Mechanic	84
	Fitter	42
	Instrument Mechanic	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	84
	Mechanic (Refrigeration and Air Conditioning)	84
Maruthi Institute of Tech	Data Preparation and Computer Software	21

EIT	Mechanic Radio and Television	42
S.J.I.T.C	Computer Operator and Programming Assistant	42
	Draughtsman (Mechanical)	42
	Electrician	42
	Electronics Mechanic	42
	Fitter	42
	Machinist	42
	Mechanic (Refrigeration and Air Conditioning)	42
	Turner	42
L.L.I.T.C	Stenography (English)	42
P.S.U.I.T.C	Draughtsman (Civil)	42
	Welder	21
Govt ITI Chennai	Driver Cum Mechanic (Light Motor Vehicle)	21
	Draughtsman (Mechanical)	63
	Digital Photographer	84
	Desk Top Publishing Operator	42
	Electronics Mechanic	42
	Fitter	210
	Litho Offset Machine Minder	84
	Mechanic (Motor Vehicle)	42
	Mechanic (Refrigeration and Air Conditioning)	63
	Plastic Processing Operator	21
	Tool & Die Maker	63
	Turner	42
	Welder (Gas & Electric)	42
	Wireman	42
	Carpenter	21
	Draughtsman (Mechanical)	84
	Draughtsman (Civil)	84
	Electroplater	42
	Fitter	273
	Machinist	84
	Moulder	42
	Plumber	42
	Pattern Maker	42
	Turner	189
	Welder (Gas & Electric)	84
	Wireman	63
Women Govt ITI Chennai	Cutting and Tailoring renamed as Cutting and Sewing	84
	Data Entry Operator	42
	Electronics Mechanic	42

	Embroidery & Needle Work	42
	Instrument Mechanic	42
	Information Technology & Electronics System Maint.	42
	Stenography (English)	42
Annai Technical Institute	Draughtsman (Mechanical)	42
	Draughtsman (Civil)	42
	Fitter	42
P.A.M.V.D.ITC(W)	Cutting and Tailoring renamed as Cutting and Sewing	42
	Embroidery & Needle Work	42
CSI Technical Institute	Cutting and Tailoring renamed as Cutting and Sewing	21
N.I.T.C	Instrument Mechanic	42
Indira ITI, Chennai	Draughtsman (Mechanical)	42
	Draughtsman (Civil)	42
	Electrician	42
	Fitter	42
S.P.C.CENTRE	Computer Operator and Programming Assistant	21
R.MAN ITC	Mechanic (Motor Vehicle)	84
E.C.C	Computer Operator and Programming Assistant	21
D.C.I.T.C	Computer Operator and Programming Assistant	42
	Electronics Mechanic	42
	Mechanic (Diesel)	42
	Mechanic (Refrigeration and Air Conditioning)	126
N.W.C.C.	Data Preparation and Computer Software	21
J.R.C.C	Data Preparation and Computer Software	21
I.E.C.C	Data Preparation and Computer Software	21
Oxford Computer Centre	Computer Operator and Programming Assistant	42
M.C.Academy,	Computer Operator and Programming Assistant	42
A.A.I.E	Mechanic Radio and Television	21
Karthigeyan ITC	Data Preparation and Computer Software	21
	Mechanic Radio and Television	21
	Stenography (English)	21
Sam Computer Centre	Data Preparation and Computer Software	42
	Electrician	21
A.I.M.S	Data Preparation and Computer Software	42
S.T.T.CENTRE	Electrician	84
	Fitter	42
	Mechanic Radio and Television	42
	Plumber	42
I.R.C.S.V.T.R.CENTRE	Cutting and Tailoring renamed as Cutting and Sewing	21
	Draughtsman (Mechanical)	42
	Letter Press Machine Minder	21

	Turner	42
NSIC TECH.SERVICE CENTRE	Leather Goods Maker	21
	Manufacture of Footwear	21
Kanchi ITC	Draughtsman (Mechanical)	21
	Electrician	42
	Fitter	42
	Mechanic (Refrigeration and Air Conditioning)	42
	Wireman	42
T.B.V.S. ITC	Electrician	63
	Fitter	42
	Wireman	42
T.N.A. ITC	Electrician	84
	Mechanic (Refrigeration and Air Conditioning)	84
	Wireman	42
H. I.T.C	Electrician	42
	Hospital House Keeping	21
	Mechanic (Refrigeration and Air Conditioning)	42
	Old Age Care	21
	Plumber	42
	Pre/ Preparatory School Management (Assistant)	21
	Wireman	42
Sri Vega ITC	Computer Operator and Programming Assistant	42
AMS ITC	Electrician	84
	Fitter	42
	Mechanic (Motor Vehicle)	84
	Mechanic (Refrigeration and Air Conditioning)	84
	Wireman	42
Muthucumar ITC	Electrician	42
	Mechanic (Refrigeration and Air Conditioning)	84
D.C.I. ITC.	Computer Operator and Programming Assistant	42
P.S.B ITC	Electrician	126
	Fitter	84
	Mechanic (Motor Vehicle)	126
	Mechanic (Refrigeration and Air Conditioning)	42
Don Bosco Rehabilitation	Fitter	42
BRILLIANT I.T.C	Electrician	126
	Mechanic (Refrigeration and Air Conditioning)	126
B.M.P-H ITC	Carpenter	21
	Electrician	42
	Fitter	42
Government ITI	Computer Operator and Programming Assistant	42

	Electronics Mechanic	84
Rama Kri Missi Com.	Data Preparation and Computer Software	42
Govt Basic Tra ITC	Craftsmen Food Production (Veg)	42
Anna ITC	Mechanic (Motor Vehicle)	42
C.I.F.N E ITC	Fitter	42
	Vessel Navigator	42
Sri Sankarar ITC	Mechanic (Motor Vehicle)	42
Chennai Corp ITC	Computer Operator and Programming Assistant	42
	Electrician	42
	Electronics Mechanic	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
	Plumber	42
Sri Jai Sakthi ITC	Computer Operator and Programming Assistant	42
	Fitter	42
	Welder (Gas & Electric)	42
St. Thomas Private ITI	Fitter	42
	Welder (Gas & Electric)	42
Total Capacity		8526

Source: Department of Employment and Training (2011), Athena Research (2012)

COIMBATORE

ITI/ITC	Trade	Capacity
Sri K Krishnaswamy Naidu	Mechanic (Motor Vehicle)	42
CSI TECH. & VOC. TRG. Cen	Cutting and Tailoring renamed as Cutting and Sewing	21
	Computer Operator and Programming Assistant	42
	Draughtsman (Civil)	42
	Electronics Mechanic	42
	Secretarial Practice	21
	Stenography (English)	21
N.ITC	Mechanic (Motor Vehicle)	42
	Wireman	42
Royal ITC	Computer Operator and Programming Assistant	42
	Electrician	42
	Mechanic (Diesel)	42
	Wireman	42
R V G ITC	Wireman	42
L G B ITC	Data Preparation and Computer Software	21
	Fitter	42
	Stenography (English)	21
Sri R.C. ITC	Wireman	42

Suguna Instt. Techn.	Electrician	84
	Electronics Mechanic	42
	Fitter	42
	Machinist	42
	Mechanic (Motor Vehicle)	42
Sharp ITC	Plumber	21
	Turner	42
	Electrician	105
	Fitter	42
	Mechanic (Motor Vehicle)	42
	Wireman	42
Kasturi ITC	Electrician	42
	Mechanic (Diesel)	21
Sankara ITC	Electrician	42
N.C.A.&A. SCIENCE	Electronics Mechanic	42
	Mechanic (Refrigration and Air Conditioning)	42
	Mechanic Radio and Television	42
Sri R.M.V.ITC	Draughtsman (Mechanical)	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
	Turner	21
	Wireman	63
Govt ITI Coimbatore	Craftsmen Food Production (General)	42
	Craftsmen Food Production (Veg)	42
	Computer Operator and Programming Assistant	42
	Electrician	189
	Electronics Mechanic	63
	Foundaryman	21
	Fitter	126
	Instrument Mechanic	42
	Information Technology & Electronics System Maint.	42
	Machinist (Grinder)	42
	Machinist	126
	Mechanic (Motor Vehicle)	147
	Mechanic (Refrigration and Air Conditioning)	63
	Mechanic Radio and Television	42
	Mechanic Mechatronics	42
	Mechanic Machine Tool Maintenance	21
	Plastic Processing Operator	42
	Sheet Metal Worker	42
	Turner	210

	Welder (Gas & Electric)	84
	Wireman	42
TSTC (CBE Divn.1) ITC	Mechanic (Motor Vehicle)	84
P S G ITC	Electrician	42
	Fitter	42
	Knitting With Machine	42
	Moulder	42
	Turner	42
	Wireman	42
Sri Subbaiah ITC	Mechanic (Diesel)	21
	Mechanic (Motor Vehicle)	42
S.A.C.SERVICES	Computer Operator and Programming Assistant	42
St. J.P. IND. SCHOOL & PR	Computer Operator and Programming Assistant	42
	Fitter	42
	Turner	42
Annur ITC	Electrician	42
	Mechanic (Motor Vehicle)	42
R. S ITC	Electrician	42
	Mechanic (Diesel)	21
	Wireman	42
T.S.D.I.T.C	Fitter	42
Rangasivam Vocational Tra	Electrician	42
	Fitter	42
Bethel Computer Centre	Computer Operator and Programming Assistant	42
Nehru ITC	Electrician	42
	Fitter	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
Sri Amman ITC	Electrician	63
	Fitter	63
ANBU ITC	Mechanic (Motor Vehicle)	42
B.A.A. VTC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
G.S. TECH. TRG. CENTRE	Machinist	84
K.V.K ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
PSG ITC	Cutting and Tailoring renamed as Cutting and Sewing	21
	Electronics Mechanic	21
	Information Technology & Electronics System Maint.	42

	Machinist	21
	Welder	21
SRI A.L. ITC	Fitter	42
VISHNU COMPUTER CENTRE	Data Preparation and Computer Software	42
Government ITI	Cutting and Tailoring renamed as Cutting and Sewing	42
	Electronics Mechanic	42
	Stenography (English)	21
Government ITI (W)	Computer Operator and Programming Assistant	42
	Desk Top Publishing Operator	42
	Electronics Mechanic	42
	Instrument Mechanic	42
	Stenography (English)	21
Sri Rama Vidya ITC	Draughtsman (Mechanical)	84
	Draughtsman (Civil)	84
	Floriculture & Landscaping	42
	Fitter	42
	Horticulture	42
	Mech. Computer Hardware	42
Ramalingam ITC	Craftsmen Food Production (General)	42
Govt. ITI Women	Cutting and Tailoring renamed as Cutting and Sewing	42
	Computer Operator and Programming Assistant	42
	Desk Top Publishing Operator	63
	Electronics Mechanic	42
	Fashion Technology	42
	Stenography (English)	21
Total Capacity		5880

Source: Department of Employment and Training (2011), Athena Research (2012)

CUDDALORE

ITI/ITC	Trade	Capacity
Women Govt ITI Cuddalore	Cutting and Tailoring renamad as Cutting and Sewing	42
	Computer Operator and Programming Assistant	42
	Draughtsman (Mechanical)	42
	Draughtsman (Civil)	42
	Electronics Mechanic	42
	Embroidery & Needle Work	42
	Information Technology & Electronics System Maint.	42
	Stenography (English)	42
	Stenography (Hindi)	42
Govt ITI Cuddalore	Computer Operator and Programming Assistant	42
	Fitter	210

	Machinist	42
	Mechanic (Motor Vehicle)	42
	Plastic Processing Operator	84
	Turner	210
	Welder (Gas & Electric)	168
	Wireman	84
F.ITC	Electrician	42
	Mechanic (Diesel)	21
	Mechanic (Motor Vehicle)	42
	Welder	21
E.ITC	Mechanic (Motor Vehicle)	42
J.M.ITC	Computer Operator and Programming Assistant	42
	Electrician	42
	Mechanic (Motor Vehicle)	42
	Mechanic (Refrigration and Air Conditioning)	42
K.ITC	Electrician	42
	Mechanic (Motor Vehicle)	42
M.ITC	Electrician	42
	Mechanic (Motor Vehicle)	42
P.R.S ITC	Electrician	42
	Fitter	42
	Mechanic (Refrigration and Air Conditioning)	42
S.ITC	Electrician	42
SRI. V.ITC	Electrician	84
	Mechanic (Motor Vehicle)	84
	Wireman	42
SRI. B.ITC	Electrician	42
	Wireman	42
SRI.K.ITC	Electrician	42
	Welder	42
SRI.S. ITC	Welder	21
S. ITC	Instrument Mechanic	42
T.ITC	Electrician	84
	Mechanic (Motor Vehicle)	42
	Fitter	42
T.P.ITC	Electrician	168
	Mechanic (Motor Vehicle)	84
	Plumber	42
	Welder	42
V. ITC	Electrician	42
	Fitter	42

	Mechanic (Motor Vehicle)	42
M.I.T.C.	Electrician	168
	Fitter	126
	Mechanic (Motor Vehicle)	126
	Mechanic (Refrigration and Air Conditioning)	84
	Wireman	84
NATIONAL ITC	Fitter	42
	Mechanic (Motor Vehicle)	84
PANRUTI ITC	Draughtsman (Civil)	42
	Electrician	168
	Fitter	168
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	84
	Wireman	126
R.K.ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	84
	Wireman	84
SAKTHI ITC	Electrician	126
	Mechanic (Motor Vehicle)	84
SRI.K. ITC	Electrician	168
	Fitter	84
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	84
	Mechanic (Refrigration and Air Conditioning)	42
	Wireman	84
SRI.B.D.J.ITC	Draughtsman (Mechanical)	21
	Draughtsman (Civil)	42
	Electrician	105
	Mechanic (Motor Vehicle)	42
	Welder	42
St.Thomas ITC	Electrician	84
ST.JOSEPH S ITC	Computer Operator and Programming Assistant	42
	Electrician	168
	Fitter	84
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	168
	Mechanic (Refrigration and Air Conditioning)	84
	Welder	84
DR.B.R.A.ITC	Electrician	42
	Fitter	42

	Mechanic (Motor Vehicle)	42
	Wireman	42
DR.V.S.N.ITC	Fitter	42
	Wireman	42
KMP TRUST ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
	Welder	21
M.ITC	Electrician	84
	Fitter	42
	Mechanic (Motor Vehicle)	42
M.K.R.ITC	Electrician	84
	Mechanic (Motor Vehicle)	84
	Wireman	42
SRI V.ITC	Electrician	84
	Mechanic (Motor Vehicle)	21
Goverment ITI	Electrician	42
	Mechanic (Motor Vehicle)	42
	Mechanic (Refrigration and Air Conditioning)	42
Murugesen ITC	Welder (Gas & Electric)	42
	Wireman	42
Total Capacity		7413

Source: Department of Employment and Training (2011), Athena Research (2012)

DHARMAPURI

ITI/ITC	Trade	Capacity
Govt ITI	Computer Operator and Programming Assistant	42
	Electrician	42
	Electronics Mechanic	42
	Foundaryman	42
	Fitter	42
	Machinist	42
	Mech. Computer Hardware	42
	Mechanic (Motor Vehicle)	42
	Mechanic Mechatronics	42
	Tool & Die Maker	42
	Turner	84
	Welder (Gas & Electric)	42
	Wireman	42
Govt ITI Dharmapuri	Draughtsman (Civil)	42
	Electrician	42

	Fitter	84
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
	Mechanic Radio and Television	42
	Turner	42
	Welder (Gas & Electric)	42
Sri Malleswaran ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
P.S.M. ITC	Electrician	42
	Fitter	42
Sri Sakthi ITC	Data Preparation and Computer Software	42
	Electrician	84
	Fitter	84
	Mechanic (Motor Vehicle)	84
Sri Anandi ITC	Electrician	84
	Fitter	42
	Mechanic (Motor Vehicle)	42
	Mechanic (Refrigration and Air Conditioning)	42
Dr. S.V. S. ITC	Fitter	21
Swami Vivekananda ITC, Pe	Fitter	84
Mahathma ITC	Fitter	42
Pee Gee ITC	Electrician	42
Sapthagiri ITC	Fitter	42
BHARATHIAR ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
LAKSHMI NARAYANA ITC	Electrician	126
	Fitter	42
	Mechanic (Motor Vehicle)	84
	Wireman	42
S.P.G.ITC	Electrician	126
	Fitter	126
	Mechanic (Motor Vehicle)	126
	Mechanic (Refrigration and Air Conditioning)	42
A.A..I.T.C	Electrician	84
Swami Vivekananda	Fitter	84
Total Capacity		2919

Source: Department of Employment and Training (2011), Athena Research (2012)

DINDIGUL

ITI/ITC	Trade	Capacity
T.E.L.C ITC	Computer Operator and Programming Assistant	42
	Fitter	42
	Mechanic Radio and Television	42
	Turner	42
	Welder (Gas & Electric)	21
Reach ITC	Data Preparation and Computer Software	21
	Stenography (English)	21
Govt ITI Dindigul	Driver Cum Mechanic (Light Motor Vehicle)	42
	Electrician	42
	Fitter	84
	Leather Goods Maker	21
	Mechanic (Diesel)	42
	Machinist	84
	Mechanic (Motor Vehicle)	42
	Manufacture of Footwear	21
	Turner	84
	Welder (Gas & Electric)	84
	Wireman	42
R.M.T.C. ITc	Mechanic (Motor Vehicle)	42
Siva Industrial Training	Data Preparation and Computer Software	42
	Electrician	84
	Fitter	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
	Mechanic (Refrigration and Air Conditioning)	42
Christian ITC	Electrician	42
	Fitter	42
	Mechanic (Diesel)	21
	Wireman	21
Sri Ram ITC	Electrician	168
	Fitter	84
	Mechanic (Diesel)	126
	Mechanic (Motor Vehicle)	168
	Plumber	42
	Welder	42
	Wireman	168
Raja ITC	Electrician	42
	Fitter	42
	Mechanic (Diesel)	21

	Mechanic (Motor Vehicle)	63
	Wireman	42
Dr. Navalar ITC	Electrician	42
	Fitter	42
	Mechanic (Diesel)	42
	Electrician	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
Sarva Seva ITC	Cutting and Tailoring renamad as Cutting and Sewing	21
	Computer Operator and Programming Assistant	21
	Embroidery & Needle Work	21
P.M. Andiambalam ITC,	Mechanic (Diesel)	42
Sri Karpaga Vinayaga ITC,	Electrician	42
	Mechanic (Diesel)	21
Goodwill ITC	Cutting and Tailoring renamad as Cutting and Sewing	42
V.O.C ITC	Electrician	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
RVS ITC	Draughtsman (Civil)	42
	Fitter	42
	Mechanic (Diesel)	42
SRI SAIRAM ITC	Electrician	84
	Fitter	84
Goverment ITI	Cutting and Tailoring renamad as Cutting and Sewing	42
	Computer Operator and Programming Assistant	42
	Desk Top Publishing Operator	42
	Embroidery & Needle Work	42
	Fashion Technology	42
	Instrument Mechanic	42
	Information Technology & Electronics System Maint.	42
St. La Salle Puthumanan	Electrician	42
	Fitter	42
	Welder (Gas & Electric)	42
Total Capacity		3591

Source: Department of Employment and Training (2011), Athena Research (2012)

ERODE

ITI/ITC	Trade	Capacity
Dheeran ITC	Electrician	42
	Mechanic (Diesel)	42
J.K.K. Munirajah Industri	Electrician	21
	Electronics Mechanic	42
	Fitter	21
	Mechanic (Motor Vehicle)	21
	Wireman	42
Annai Fathima ITI, Kolinj	Fitter	42
	Mechanic (Diesel)	21
	Wireman	42
Kamatchi Amman ITC	Computer Operator and Programming Assistant	21
	Electrician	42
	Mechanic (Motor Vehicle)	42
St. Joseph's ITI, Erode	Computer Operator and Programming Assistant	42
	Mechanic (Motor Vehicle)	42
Govt ITI	Bleaching Dyeing & Calico Printing	21
	Electrician	84
	Fitter	84
	Machinist	42
	Turner	63
	Welder (Gas & Electric)	84
	Wireman	84
Bharathi ITC, Padiyar	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
Swami Vivekananda ITC	Draughtsman (Civil)	42
	Fitter	42
	Mechanic (Diesel)	21
	Mechanic (Motor Vehicle)	42
Valluvar Guide ITC, Erode	Electrician	42
	Mechanic (Motor Vehicle)	84
Govt ITI	Foundaryman	42
	Fitter	84
	Machinist	63
	Mechanic (Tractor)	42
	Turner	63
	Wireman	63
Govt ITI Erode	Computer Operator and Programming Assistant	42
	Draughtsman (Civil)	42

	Electrician	42
	Fitter	84
	Machinist	42
	Turner	84
	Welder (Gas & Electric)	84
	Wireman	84
Andavar ITI, Karattadipal	Electrician	84
	Mechanic (Motor Vehicle)	84
Annapackiam JeyaRaj ITC	Electrician	84
	Fitter	84
	Mechanic (Diesel)	42
	Welder (Gas & Electric)	21
JSS ITC	Electrician	84
	Fitter	42
Kongu ITI, Erode	Electrician	84
	Mechanic (Diesel)	21
	Mechanic (Motor Vehicle)	84
Sri Murugan ITC, Tirupur	Mechanic (Motor Vehicle)	84
	Plumber	21
Thanthai Periyar ITC	Electrician	84
	Fitter	42
	Mechanic (Motor Vehicle)	42
Sri Ramakrishna Thiru	Electrician	42
	Fitter	42
	Mechanic (Diesel)	21
	Mechanic (Motor Vehicle)	42
	Wireman	42
Kannappar ITI, Puliampatt	Electrician	42
	Mechanic (Diesel)	21
Vinayak Computer System,	Computer Operator and Programming Assistant	42
Kongu Industrial Training	Computer Operator and Programming Assistant	21
	Electrician	84
	Fitter	42
	Welder	21
Annai Industrial Training	Electrician	42
	Mechanic (Motor Vehicle)	42
Sakthi ITC, Anthiyur	Electrician	84
	Fitter	42
	Mechanic (Motor Vehicle)	42
	Wireman	42
Bharathiyar ITC, Kodumudi	Electrician	42

	Fitter	42
Tamilnadu Institute of Te	Computer Operator and Programming Assistant	42
	Electrician	84
	Mechanic (Motor Vehicle)	84
Bathrakaliamman ITC	Electrician	42
Kongu college ITC	Mechanic (Motor Vehicle)	42
	Plumber	21
Total Capacity		4389

Source: Department of Employment and Training (2011), Athena Research (2012)

KANCHEEPURAM

ITI/ITC	Trade	Capacity
Inter Mission Indu. Devel	Fitter	42
B.I.T.C	Draughtsman (Mechanical)	42
	Draughtsman (Civil)	84
	Fitter	84
Pallavan ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
Sam Technical Institute,	Mechanic (Refrigration and Air Conditioning)	42
	Wireman	42
Sri Sankarar Industrial T	Electrician	84
	Fitter	42
	Mechanic (Motor Vehicle)	42
Annai Indira ITC	Draughtsman (Civil)	21
	Fitter	42
	Mechanic (Motor Vehicle)	84
M.C.J.ITC	Draughtsman (Mechanical)	42
	Draughtsman (Civil)	42
	Electronics Mechanic	42
	Mechanic (Motor Vehicle)	168
	Mechanic (Refrigration and Air Conditioning)	42
Indian Institute of Const	Fitter	42
	Welder	42
Kakumanu Charitable Trust	Draughtsman (Civil)	84
	Electrician	84
	Fitter	84
	Welder (Gas & Electric)	42
Kamatchi ITC	Electrician	168
	Mechanic (Motor Vehicle)	168
	Mechanic Radio and Television	42

	Wireman	42
Meenakshi Ammal ITC	Attendant Operator (Chemical Plant)	42
	Computer Operator and Programming Assistant	21
	Draughtsman (Civil)	42
	Electrician	42
	Instrument Mechanic (Chemical Plant)	42
	Leather Goods Maker	21
	Mechanic Maintenance (Chemical Plant)	42
	Mechanic (Motor Vehicle)	84
	Manufacture of Footwear	21
Agasthya Sami ITC	Electrician	84
	Fitter	84
	Mechanic (Diesel)	42
Madras ITC	Electrician	42
	Mechanic (Motor Vehicle)	42
Interpedia Technical Trai	Data Preparation and Computer Software	21
	Electrician	42
	Mechanic (Diesel)	42
Dr.I.C. Kumarappa ITC,	Cutting and Tailoring renamad as Cutting and Sewing	42
	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
Wallajabad ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
P.T.L.C.N.ITC	Mechanic (Motor Vehicle)	84
ANBU ITC	Fitter	42
	Mechanic (Motor Vehicle)	42
ARIGNAR ANNA ITC	Electrician	84
	Fitter	42
	Mechanic (Motor Vehicle)	84
SARVA SEVE ITC	Computer Operator and Programming Assistant	21
	Electrician	21
	Mechanic (Motor Vehicle)	21
SHREE BHARATHI ITC	Fitter	21
M.T.C ITC	Mechanic (Motor Vehicle)	126
M.T.INST.	Computer Operator and Programming Assistant	42
	Draughtsman (Civil)	21
	Electrician	42
	Electronics Mechanic	84
	Machinist	42

	Turner	42
	Welder	42
A.ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
Goverment ITI	Driver Cum Mechanic (Light Motor Vehicle)	21
	Fitter	252
	Mechanic Auto Electrical & Electronics	21
	Mechanic Agricultural Machinery	42
	Mechanic (Diesel)	42
	Machinist	126
	Mechanic (Motor Vehicle)	42
	Sheet Metal Worker	63
	Stenography (English)	42
	Turner	84
	Welder	84
	Wireman	84
Perarignar Anna Institute	Craftsmen Food Production (General)	42
Yasodha ITC	Fitter	84
	Mechanic (Motor Vehicle)	42
	Welder	63
Total Capacity		5124

Source: Department of Employment and Training (2011), Athena Research (2012)

KANNIYAKUMARI

ITI/ITC	Trade	Capacity
Bharat Engineering ITC	Fitter	42
	Mechanic (Motor Vehicle)	84
Friends ITC	Draughtsman (Civil)	42
	Electrician	42
	Fitter	63
	Mechanic (Motor Vehicle)	42
J E Industrial Training C	Draughtsman (Civil)	42
	Electrician	84
	Wireman	84
Jeevajothi ITC	Fitter	42
St. Lawrence ITC	Draughtsman (Civil)	42
	Fitter	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
	Plumber	21

Tech Instt. of Engg. ITC	Draughtsman (Civil)	21
	Fitter	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	21
	Wireman	42
CMS ITC	Electrician	42
	Fitter	126
	Mechanic (Motor Vehicle)	42
J M ITC	Fitter	42
Nirmala Intt. of Tech ITC	Electrician	84
	Electronics Mechanic	42
	Fitter	126
	Mechanic (Diesel)	21
	Mechanic (Motor Vehicle)	84
	Plumber	63
	Welder	84
Govt ITI Nagercoil	Computer Operator and Programming Assistant	42
	Driver Cum Mechanic (Light Motor Vehicle)	21
	Draughtsman (Civil)	42
	Electroplater	42
	Fitter	126
	Mechanic (Motor Vehicle)	42
	Turner	42
	Welder (Gas & Electric)	42
	Wireman	84
Women Govt ITI Nagercoil	Computer Operator and Programming Assistant	42
	Dress Making	21
	Desk Top Publishing Operator	42
	Electronics Mechanic	42
	Mechanic Radio and Television	42
	Stenography (English)	21
Institute of Industrial T	Draughtsman (Mechanical)	42
	Electrician	42
	Fitter	84
	Mechanic (Motor Vehicle)	42
	Stenography (English)	21
Matha ITC	Draughtsman (Civil)	84
	Fitter	84
	Mechanic (Motor Vehicle)	84
St. John ITC, Marthandam	Driver Cum Mechanic (Light Motor Vehicle)	42
	Draughtsman (Civil)	42

	Electrician	84
	Fitter	84
	Mechanic Consumer Electronics	42
	Mech. Computer Hardware	42
	Mechanic (Motor Vehicle)	42
Nesamany Trans Corp. ITC	Mechanic (Motor Vehicle)	42
V ITC, Asia ITC	Computer Operator and Programming Assistant	42
Jeeva ITC	Electrician	42
	Fitter	42
	Mechanic (Diesel)	42
	Plumber	21
Nava Bharth ITC	Mechanic (Motor Vehicle)	63
CSI Motor Mechanic ITC	Electrician	42
	Fitter	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
BITS ITC	Computer Operator and Programming Assistant	42
CSI ITC	Draughtsman (Mechanical)	42
	Draughtsman (Civil)	42
	Fitter	42
	Mechanic Consumer Electronics	84
	Mechanic (Motor Vehicle)	42
	Mechanic (Refrigration and Air Conditioning)	42
Globe ITC	Computer Operator and Programming Assistant	42
Instt. of Computer Sc. IT	Computer Operator and Programming Assistant	42
Sakthi ITC	Fitter	42
Sowdha ITC	Mechanic (Motor Vehicle)	42
	Mechanic (Motor Vehicle)	42
Annavinyagar ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
Total Capacity		4368

Source: Department of Employment and Training (2011), Athena Research (2012)

KARUR

ITI/ITC	Trade	Capacity
Sir M.V.I.ITC	Draughtsman (Civil)	84
	Electronics Mechanic	42
	Fitter	84
	Mechanic (Diesel)	21
	Mechanic (Motor Vehicle)	84

Sangili maruthai ITC	Fitter	42
Sri R.G.M.i.t.c	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
Sri Amman ITC	Driver Cum Mechanic (Light Motor Vehicle)	42
	Fitter	84
Sri Duraisamy Memorial IT	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
Annamalai ITC, V.Pudur	Electrician	42
	Mechanic (Motor Vehicle)	42
SIDDHARTHA ITC	Electrician	84
	Mechanic (Diesel)	42
C.S.I.K.ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
Goverment ITI	Cutting and Tailoring renamad as Cutting and Sewing	42
	Desk Top Publishing Operator	42
Total Capacity		1155

Source: Department of Employment and Training (2011), Athena Research (2012)

MADURAI

ITI/ITC	Trade	Capacity
Women Meenakshi ITC	Draughtsman (Civil)	42
	Stenography (English)	21
Shri Narayana ITC	Draughtsman (Mechanical)	42
	Fitter	42
	Mechanic (Motor Vehicle)	84
	Wireman	42
Don Bosco Technical Insti	Electrician	42
	Electronics Mechanic	42
	Fitter	42
	Instrument Mechanic	42
	Mechanic (Motor Vehicle)	42
	Mechanic (Refrigration and Air Conditioning)	42
Kazi Tajuddin ITC	Draughtsman (Civil)	63
	Electrician	84
	Plumber	21
N M S Jayaraj Annapackia	Cutting and Tailoring renamad as Cutting and Sewing	42
	Stenography (English)	42
Er Ravi ITC	Computer Operator and Programming Assistant	42

Uypa ITC	Electrician	84
	Fitter	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	84
	Wireman	42
Sri Venkateswara ITI	Computer Operator and Programming Assistant	42
	Electrician	126
	Fitter	42
	Mechanic (Diesel)	84
	Mechanic (Motor Vehicle)	126
	Mechanic (Refrigration and Air Conditioning)	84
	Wireman	42
Govt ITI	Fitter	84
	Sheet Metal Worker	84
	Welder (Gas & Electric)	42
Dhanalakshmi Institute	Computer Operator and Programming Assistant	42
PRC ITC	Mechanic (Motor Vehicle)	126
LAMK Natarajan ITC	Electrician	42
	Fitter	42
	Mechanic (Diesel)	42
Srinivasa ITC	Electrician	42
	Mechanic (Motor Vehicle)	84
MAVMS ITC	Electrician	84
	Wireman	42
Velmuruga ITC	Electrician	42
	Fitter	42
Sri Jemini ITC	Electrician	42
	Fitter	42
Sarva Seva ITC	Computer Operator and Programming Assistant	42
	Electrician	42
	Fitter	42
C.S.I. ITC, Madurai	Wireman	42
LAKSHMI ITC	Electrician	42
	Fitter	42
	Wireman	42
LOYOLA ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
	Wireman	42
VENKATESWARA ITC	Mechanic (Motor Vehicle)	42
Goverment ITI	Cutting and Tailoring renamad as Cutting and Sewing	42

	Computer Operator and Programming Assistant	42
	Desk Top Publishing Operator	42
	Electronics Mechanic	42
Goverment ITI	Carpenter	21
	Desk Top Publishing Operator	42
	Electrician	126
	Fitter	252
	Instrument Mechanic	42
	Information Technology & Electronics System Maint.	42
	Mechanic Auto Electrical & Electronics	42
	Machinist	147
	Mech. Computer Hardware	42
	Mechanic (Motor Vehicle)	126
	Mechanic (Refrigration and Air Conditioning)	63
	Mechanic Machine Tool Maintenance	105
	Photographer	42
	Sheet Metal Worker	42
	Stenography (English)	42
	Turner	189
	Welder	126
	Wireman	42
Pandi Nadu ITC	Craftsmen Food Production (General)	42
Asmacs Private ITI	Electrician	42
	Welder (Gas & Electric)	42
Total Capacity		4914

Source: Department of Employment and Training (2011), Athena Research (2012)

NAGAPATTINAM

ITI/ITC	Trade	Capacity
Sri Ramachandra ITC	Data Preparation and Computer Software	21
	Electrician	42
	Fitter	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	84
	Mechanic (Refrigration and Air Conditioning)	42
	Welder	42
	Wireman	42
Women Govt ITI Gandhigram	Blank/Not filled	42
	Mechanic Radio and Television	21
	Stenography (English)	42
Govt ITI Nagapattinam	Carpenter	84

	Foundaryman	21
	Fitter	42
	Mechanic (Diesel)	42
	Machinist	42
	Moulder	63
	Mechanic (Motor Vehicle)	42
	Mechanic Radio and Television	126
	Stenography (English)	42
	Turner	84
	Welder (Gas & Electric)	84
	Wireman	42
Meikandar ITC	Fitter	42
	Mechanic (Motor Vehicle)	42
	Welder	42
	Wireman	42
SRI A.ITC	Electrician	42
	Mechanic (Motor Vehicle)	42
Selva ITC	Fitter	42
	Mechanic (Motor Vehicle)	42
Prime ITC	Electrician	42
	Fitter	42
	Mechanic (Diesel)	42
SIR SRINIVASA ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	63
ELUMALAIYAN ITC	Electrician	84
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	84
	Mechanic (Refrigeration and Air Conditioning)	84
MATHA ITC	Mechanic (Motor Vehicle)	42
N.S.ANBU ITC	Electrician	42
	Fitter	42
P.R.E.T..ITC	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	84
NATESAN ITC	Electrician	84
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
Goverment ITI	Computer Operator and Programming Assistant	42
	Electrician	84
	Mechanic (Diesel)	42
	Welder	42

Voesalpine ITC	Welder	42
Fraedernberg ITC	Fitter	42
	Machinist	42
	Mechanic (Motor Vehicle)	42
	Welder (Gas & Electric)	42
Sri Saraswathi Private IT	Fitter	42
Total Capacity		2961

Source: Department of Employment and Training (2011), Athena Research (2012)

NAMAKKAL

ITI/ITC	Trade	Capacity
Sri Amman ITC	Draughtsman (Mechanical)	42
	Electrician	42
	Fitter	84
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
	Wireman	42
Smt Rajammal Rangasamy IT	Computer Operator and Programming Assistant	42
	Electrician	126
	Fitter	84
	Mechanic (Motor Vehicle)	168
	Wireman	42
Sri Shanmugam ITI	Electrician	84
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
	Wireman	42
Chinappa ITI	Electrician	42
	Wireman	42
Padmavathi ITC	Electrician	42
	Mechanic (Motor Vehicle)	42
Sri Ragavendra ITC	Mechanic (Motor Vehicle)	42
Jeeva ITC	Electrician	84
	Fitter	84
Andavar ITC	Electrician	42
	Mechanic (Motor Vehicle)	42
Angappa ITC	Electrician	42
	Mechanic (Motor Vehicle)	42
Eswara ITC	Fitter	42
Muthaiyammal ITC	Electrician	42
	Fitter	84
	Mechanic (Motor Vehicle)	42

	Wireman	42
PGP ITC	Electrician	42
	Fitter	84
	Mechanic (Motor Vehicle)	84
	Plumber	21
Ragavendra ITC	Mechanic (Motor Vehicle)	42
Sri Venkateswara ITC	Fitter	42
Kandasamy ITC	Computer Operator and Programming Assistant	21
	Stenography (English)	21
Goverment ITI	Computer Operator and Programming Assistant	42
	Desk Top Publishing Operator	42
Kongu ITC	Mechanic (Motor Vehicle)	84
	Wireman	42
Total Capacity		2331

Source: Department of Employment and Training (2011), Athena Research (2012)

PERAMBALUR

ITI/ITC	Trade	Capacity
Govt ITI	Draughtsman (Mechanical)	42
	Electrician	42
	Fitter	84
	Mechanic (Motor Vehicle)	42
	Sheet Metal Worker	42
	Turner	84
	Welder (Gas & Electric)	42
	Wireman	42
National ITC	Craftsmen Food Production (General)	42
	Electrician	84
	Fitter	84
	Information Technology & Electronics System Maint.	42
	Mechanic (Motor Vehicle)	84
	Welder	84
Aringnar Anna ITC	Electrician	42
	Mechanic (Motor Vehicle)	42
Andavar ITC	Electrician	42
	Mechanic (Diesel)	42
BHARATH ITC	Electrician	42
NATIONAL ITC	Electrician	42
	Mechanic (Motor Vehicle)	42
S.I.S.ITC	Fitter	21
ST. REMIGIUS ITC	Electrician	42

	Fitter	42
	Welder	42
G.D.N.ITC	Electrician	21
	Mechanic (Motor Vehicle)	21
E.ITC	Computer Operator and Programming Assistant	42
	Electrician	42
	Fitter	42
	Stenography (English)	21
Govt ITI	Machinist	42
	Mechanic (Motor Vehicle)	42
	Turner	42
Sri Ram ITC	Electrician	42
	Fitter	42
	Welder	42
Govt. ITI Perambalur	Electrician	42
	Fitter	42
	Welder	84
Karthikeyan Private ITI	Welder	42
Total Capacity		1932

Source: Department of Employment and Training (2011), Athena Research (2012)

PUDUKKOTTAI

ITI/ITC	Trade	Capacity
Women St. James ITC	Draughtsman (Civil)	42
	Stenography (English)	42
Advanced ITC	Electrician	84
	Fitter	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	84
Vestley ITC	Data Preparation and Computer Software	42
	Draughtsman (Civil)	42
	Electrician	42
	Fitter	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
	Mechanic (Refrigration and Air Conditioning)	42
Sri Brahadhambal ITC	Electrician	84
	Fitter	42
	Mechanic (Diesel)	42
	Welder	42
Govt ITI	Fitter	84

	Instrument Mechanic	63
	Mechanic (Diesel)	42
	Machinist	63
	Mechanic (Motor Vehicle)	42
	Pump Operator-Cum-Mechanic	42
	Turner	63
	Welder (Gas & Electric)	42
	Wireman	42
St. Josephs Technical Training Centre	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
	Welder	21
A C M.Vocational TRG. INS	Electrician	84
	Fitter	42
Regional ITC	Electrician	84
	Fitter	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
Little Flower ITC	Electrician	42
	Fitter	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
Central ITI	Data Preparation and Computer Software	42
	Electrician	42
	Welder	42
Golden ITC, Karambakudy	Electrician	84
	Fitter	84
	Mechanic (Diesel)	42
Royal ITC	Electrician	21
Manickavasagar ITC	Mechanic (Diesel)	42
Ideal ITC	Plumber	42
MR.ARUNACHALAM VOCATIONAL TRG. CENTRE	Cutting and Tailoring renamad as Cutting and Sewing	21
	Draughtsman (Mechanical)	42
	Draughtsman (Civil)	42
	Electrician	84
	Electronics Mechanic	42
	Mechanic (Diesel)	21
	Plumber	42
NEHRU ITC	Fitter	42
	Wireman	42
SRI MEENAKSHI SUNDARESWARAR ITC	Fitter	42

ST. MARY S ITC	Cutting and Tailoring renamad as Cutting and Sewing	21
	Driver Cum Mechanic (Light Motor Vehicle)	21
	Electronics Mechanic	42
	Fashion Technology	21
	Fitter	42
	Mechanic Auto Electrical & Electronics	21
THE BEST ITC	Electrician	21
	Secretarial Practice	21
	Welder	21
VIVEK ITC	Fitter	42
	Plumber	21
	Wireman	42
THE SELECT ITC	Fitter	21
	Mechanic (Diesel)	21
Hi-Tech Goodwill ITC	Electrician	84
	Fitter	84
	Plumber	84
	Welder	84
Empower Private ITI	Fitter	84
	Welder (Gas & Electric)	84
Sri Sathuragiri Private ITI	Welder (Gas & Electric)	42
Total Capacity		3717

Source: Department of Employment and Training (2011), Athena Research (2012)

RAMANATHAPURAM

ITI/ITC	Trade	Capacity
N.M.S Sethur Nadar Nellai	Fitter	84
	Mechanic (Diesel)	42
	Wireman	42
Govt ITI	Computer Operator and Programming Assistant	42
	Carpenter	42
	Fitter	84
	Mechanic (Motor Vehicle)	42
	Turner	84
	Welder (Gas & Electric)	42
	Wireman	84
Govt ITI Ramanathapuram	Cutting and Tailoring renamad as Cutting and Sewing	42
	Computer Operator and Programming Assistant	42
	Draughtsman (Mechanical)	42
	Desk Top Publishing Operator	42
	Electronics Mechanic	42

	Fitter	42
	Mechanic (Motor Vehicle)	42
	Mechanic Radio and Television	42
	Wireman	42
Mohamad Sathak ITC	Electrician	42
	Fitter	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	84
	Mechanic (Refrigration and Air Conditioning)	84
Ganapathi ITC	Electrician	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
Rahmania Industrial Training	Electrician	42
	Fitter	42
	Wireman	42
St. Antony s ITC	Electrician	42
	Mechanic (Diesel)	42
LEVILE HILL ITC	Cutting and Tailoring renamad as Cutting and Sewing	21
	Embroidery & Needle Work	21
Sri Ramanda ITC	Electrician	42
Goverment ITI	Fitter	42
	Welder	42
Total Capacity		1764

Source: Department of Employment and Training (2011), Athena Research (2012)

SALEM

ITI/ITC	Trade	Capacity
Govt ITI	Computer Operator and Programming Assistant	42
	Electrician	63
	Electronics Mechanic	42
	Fitter	315
	Machinist (Grinder)	63
	Machinist	168
	Mechanic (Motor Vehicle)	105
	Plastic Processing Operator	42
	Turner	273
	Welder (Gas & Electric)	84
	Wireman	63
St. Josephs ITC	Electrician	42
	Fitter	42
Sri Amman ITC	Electrician	42

	Wireman	42
Women Govt ITI	Computer Operator and Programming Assistant	42
	Instrument Mechanic	42
	Information Technology & Electronics System Maint.	42
	Stenography (English)	42
Sri Subrayar Pillai ITC	Fitter	42
	Mechanic (Motor Vehicle)	63
Govt ITI, Mettur Dam	Electrician	42
	Fitter	84
	Machinist	84
	Mechanic (Motor Vehicle)	42
	Sheet Metal Worker	42
	Turner	84
	Welder (Gas & Electric)	84
Saraswathi Ammal ITC	Electrician	84
	Fitter	42
Institute of Computer Studies	Computer Operator and Programming Assistant	21
Institute of Engineering ITC	Fitter	42
	Wireman	42
ANTS Industrial Training Centre	Computer Operator and Programming Assistant	42
	Mechanic Radio and Television	42
Vinayaga Missions ITC	Electrician	84
	Fitter	84
	Mechanic (Motor Vehicle)	84
St. Theresas ITC	Mechanic (Motor Vehicle)	42
	Turner	42
Tamil Nadu State Corporation ITC(Salem Div I)	Mechanic (Motor Vehicle)	42
The Salem Polytechnic ITC	Computer Operator and Programming Assistant	21
	Electrician	84
	Fitter	84
	Mechanic (Motor Vehicle)	42
	Wireman	21
IDA Detoma Industrial Training Institute	Computer Operator and Programming Assistant	21
Kuppulakshmi Balasubramaniam ITC	Electrician	84
	Fitter	84
Vellsar ITC	Electrician	105
	Fitter	42
Bethal VTC (ITC)	Mechanic (Motor Vehicle)	42
	Plumber	21
Saradha Memorial ITC	Electrician	42

	Mason (Building Constructor)	21
	Mechanic (Motor Vehicle)	42
Thiagarajar ITC	Electrician	84
	Fitter	42
	Mechanic (Motor Vehicle)	84
Pushpammal ITC	Electrician	42
Balaji ITC	Electrician	42
	Fitter	84
	Mechanic (Motor Vehicle)	42
Nethaji ITC	Electrician	42
	Fitter	42
Sri Ragavendra ITC	Electrician	42
	Fitter	42
Kalaignar Karunanidhi ITC	Electrician	42
	Mechanic (Motor Vehicle)	42
Sri Balaji ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
Kalki ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
Sri Venkateshwara ITC	Fitter	42
	Mechanic (Motor Vehicle)	42
Surya ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
Tamil Nadu ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	84
Thalaivasal ITC	Mechanic (Motor Vehicle)	42
Nachiyappa Institute of Co-operative Managment ITC	Craftsmen Food Production (General)	42
Total Capacity		4998

Source: Department of Employment and Training (2011), Athena Research (2012)

SIVAGANGA

ITI/ITC	Trade	Capacity
SATHIAMURTHY MOHAN ITC	Cutting and Tailoring renamad as Cutting and Sewing	21
	Electrician	42
	Plumber	21
	Wireman	42

AL Ameen Buhari Alim ITC	Draughtsman (Civil)	42
	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
	Plumber	21
M.P.T.C.ITC	Mechanic (Motor Vehicle)	42
Vairam Group ITC	Data Preparation and Computer Software	42
	Fitter	42
	Plumber	42
Sethubhaskara ITC	Electrician	42
	Fitter	84
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
	Wireman	42
Vallambar ITC	Electrician	84
	Mechanic (Diesel)	42
Srivari ITC	Electrician	84
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	84
	Mechanic (Refrigration and Air Conditioning)	42
Matha ITC	Electrician	84
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	84
Thavathirukundrakudi Adigalar ITC	Computer Operator and Programming Assistant	42
	Electronics Mechanic	42
	Mechanic (Motor Vehicle)	42
VELAMAMAL ITC	Mechanic (Motor Vehicle)	84
YADAVA ITC	Electrician	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
SSS Sangam ITC	Hand Compositer	21
Mutharaiyar ITC	Fitter	84
	Mechanic (Diesel)	42
	Wireman	42
Govt. ITI	Fitter	84
	Machinist	42
	Sheet Metal Worker	21
	Turner	84
	Welder	42
	Wireman	84
Sri Kannathal ITC	Mechanic Consumer Electronics	42

Govt ITI	Cutting and Tailoring renamad as Cutting and Sewing	42
	Computer Operator and Programming Assistant	42
	Electrician	42
	Fitter	84
	Mechanic Repair & Maintenance of Two Wheelers	42
	Welder	42
Total Capacity		2541

Source: Department of Employment and Training (2011), Athena Research (2012)

THANJAVUR

ITI/ITC	Trade	Capacity
Sauduliya ITC	Draughtsman (Mechanical)	42
	Electrician	42
	Mechanic (Diesel)	84
	Welder	21
Rajarajan Industrial Training centre	Draughtsman (Civil)	42
	Fitter	84
	Mechanic (Motor Vehicle)	84
	Mechanic (Refrigration and Air Conditioning)	84
	Wireman	42
A.A.C.CENTRE	Computer Operator and Programming Assistant	42
Peruvarani ITC	Electrician	42
	Fitter	42
	Mechanic (Diesel)	42
St. Mary s ITC	Computer Operator and Programming Assistant	42
	Carpenter	42
	Electrician	84
	Fitter	84
	Mechanic (Diesel)	84
	Mechanic (Motor Vehicle)	84
	Welder	21
	Wireman	42
St. Xavier s ITC	Carpenter	21
	Electrician	84
	Fitter	84
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	84
	Sheet Metal Worker	21
	Welder	42
Vandayar ITC	Electrician	84
	Fitter	42

	Mechanic (Diesel)	84
	Mechanic (Motor Vehicle)	84
	Mechanic (Refrigration and Air Conditioning)	42
	Welder	42
	Wireman	42
Pattukottai ITC	Fitter	42
Thanthai Periyar ITC for Girls	Draughtsman (Civil)	42
	Mechanic Radio and Television	21
Kalathur.V.Subramania Iyer Memorial Trust ITC	Electrician	168
	Fitter	210
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	84
	Mechanic (Refrigration and Air Conditioning)	84
	Welder	42
	Wireman	42
The Athikapakkam ITC	Fitter	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
	Welder	21
Nageswaran ITC	Electrician	42
	Fitter	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
	Mechanic (Refrigration and Air Conditioning)	42
Ram Institute of Computer Science &Technology	Data Preparation and Computer Software	21
Cauvery Computer Training Centre	Computer Operator and Programming Assistant	84
Govt ITI	Computer Operator and Programming Assistant	42
	Carpenter	42
	Fitter	84
	Machinist	42
	Mechanic (Tractor)	42
	Mechanic (Motor Vehicle)	42
	Mechanic Mechatronics	42
	Turner	126
	Welder (Gas & Electric)	84
	Wireman	42
T.S.Palanisamypillai ITI	Electrician	42
	Fitter	42
	Mechanic (Diesel)	42

	Wireman	42
TGM ITC	Electrician	126
	Fitter	42
	Mechanic (Diesel)	84
	Mechanic (Motor Vehicle)	42
	Mechanic (Refrigration and Air Conditioning)	84
	Wireman	42
Arvind ITC	Electrician	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
Pattukottai Cooperative ITC	Cutting and Tailoring renamad as Cutting and Sewing	84
	Craftsmen Food Production (General)	42
	Computer Operator and Programming Assistant	84
	Dress Making	21
	Electrician	84
SRI. Thiyagarajar ITC	Electrician	84
	Fitter	42
	Mechanic (Diesel)	42
S.S.Chowdhry ITC	Wireman	42
Sri Kumarakurubarar ITC	Fitter	42
Ramavilas ITC	Mechanic (Diesel)	42
	Wireman	42
Chamber of Commerce Adithanar ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
	Mechanic (Refrigration and Air Conditioning)	42
MANGALAM ITC	Mechanic (Diesel)	42
BHARATHIDASAN ITC	Electrician	42
KALAIMAGAL KITC	Computer Operator and Programming Assistant	21
	Fitter	21
SRI.VENKATESWARA ITC	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	84
	Mechanic (Refrigration and Air Conditioning)	42
TAMIL NADU STATE TRANSPORT CORPORATION, KUMBAKONAM	Mechanic (Motor Vehicle)	42
Suganthi ITC	Insurance	21
	Welder (Gas & Electric)	42
Samiappa Co-Operative ITC	Craftsmen Food Production (Veg)	42

G.B ITC	Fitter	42
	Welder (Gas & Electric)	84
Thondaiman ITC	Electrician	42
	Fitter	42
	Welder (Gas & Electric)	42
Sagar Private ITI	Fitter	42
	Welder	42
Sri Shanmuga Private ITI	Fitter	42
	Welder (Gas & Electric)	42
Total Capacity		6195

Source: Department of Employment and Training (2011), Athena Research (2012)

THENI

ITI/ITC	Trade	Capacity
Govt ITI	Computer Operator and Programming Assistant	21
	Data Entry Operator	42
	Desk Top Publishing Operator	21
	Electrician	42
	Fitter	84
	Machinist (Grinder)	42
	Machinist	42
	Mechanic (Tractor)	42
	Mechanic Radio and Television	42
	Network Technician	42
	Pump Operator-Cum-Mechanic	42
	Turner	84
	Welder (Gas & Electric)	84
V.O.C. ITC	Data Preparation and Computer Software	42
	Electrician	84
	Fitter	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	84
Nava Bharath ITC	Mechanic (Diesel)	42
Perumthalaivar Kamarajar ITC	Electrician	84
	Fitter	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
Cordmon Planters Union ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
Annai Gandhi ITC	Mechanic (Diesel)	42

P.T.R. ITC	Electrician	42
	Fitter	42
	Plumber	21
ARCH BISHOP MARIYANUS AROKIASAMY ITC	Mechanic (Motor Vehicle)	42
	Plumber	42
SRI BALAJI ITC	Electrician	42
	Mechanic (Diesel)	42
Goverment ITI (W)	Cutting and Tailoring renamad as Cutting and Sewing	42
	Computer Operator and Programming Assistant	42
	Desk Top Publishing Operator	42
	Information Technology & Electronics System Maint.	42
Annam ITC	Electrician	21
	Fitter	21
	Mechanic (Motor Vehicle)	21
Theni Kammavar Sangam ITC	Electrician	42
	Fitter	84
	Welder	42
	Wireman	42
Ponmalar ITC	Fitter	42
	Wireman	42
Jayaraj Private ITI	Electrician	42
	Mechanic (Motor Vehicle)	42
	Welder (Gas & Electric)	42
Chellammal Private ITI	Welder	42
Total Capacity		2310

Source: Department of Employment and Training (2011), Athena Research (2012)

THIRUVALLUR

ITI/ITC	Trade	Capacity
Matheri ITC	Surveyor	42
Sri Devi ITC	Computer Operator and Programming Assistant	21
	Desk Top Publishing Operator	21
	Information Technology & Electronics System Maint.	42
Sri Bakthavatsalam ITC	Fitter	42
	Welder (Gas & Electric)	42
	Wireman	42
Dream India ITC	Fitter	42
	Welder (Gas & Electric)	42
	Wireman	42
Don Bosco Private ITI	Electrician	42
Total Capacity		420

Source: Department of Employment and Training (2011), Athena Research (2012)

THIRUVARUR

ITI/ITC	Trade	Capacity
Ponniah Ramjayam ITC	Electrician	84
Shri Ramakrishna ITC	Electrician	42
Muthupet ITC	Mechanic (Diesel)	42
Sri Balaji ITC	Electrician	42
	Fitter	42
	Mechanic (Diesel)	42
NATIONAL ITC	Mechanic (Diesel)	42
RAJEEV GANDHI ITC	Mechanic (Refrigration and Air Conditioning)	21
SRI VISWESWARA ITC	Electrician	42
	Fitter	42
	Mechanic (Diesel)	42
	Wireman	42
CENTURY ITC	Mechanic (Diesel)	42
Rathina ITC	Fitter	84
	Mechanic (Diesel)	84
	Welder (Gas & Electric)	42
	Welder	84
RAMAJAYATHAMMAL MEMORIAL ITC	Draughtsman (Civil)	42
	Fitter	42
	Mechanic (Diesel)	42
	Welder	21
TAMIL NADU ITC	Computer Operator and Programming Assistant	21
	Electrician	42
	Fitter	42
	Mechanic (Diesel)	21
	Mechanic (Motor Vehicle)	42
	Welder (Gas & Electric)	42
SHANKARA COMPUTER CENTRE	Data Preparation and Computer Software	21
INDIRA GANDHI ITC	Computer Operator and Programming Assistant	21
	Electrician	42
	Fitter	42
	Mechanic (Diesel)	84
	Stenography (English)	21
Goverment ITI	Fitter	84
	Mechanic (Motor Vehicle)	42
	Turner	42
	Welder (Gas & Electric)	42
	Wireman	42

Shri Duraisamy Memorial ITC	Fitter	84
	Welder (Gas & Electric)	84
Total Capacity		1869

Source: Department of Employment and Training (2011), Athena Research (2012)

THE NILGIRIS

ITI/ITC	Trade	Capacity
Sacred Heart Technical School	Computer Operator and Programming Assistant	42
	Fitter	42
Sri Agasthiya ITC	Fitter	42
	Mechanic (Motor Vehicle)	42
Plantation Workers ITC	Fitter	42
	Wireman	42
Govt ITI	Carpenter	21
	Electrician	42
	Electronics Mechanic	42
	Fitter	126
	Mechanic (Motor Vehicle)	42
	Mechanic (Refrigration and Air Conditioning)	42
	Turner	42
	Welder (Gas & Electric)	42
	Wireman	84
St. Joseph ITC	Fitter	42
	Mechanic (Motor Vehicle)	42
	Welder (Gas & Electric)	42
St. Anthony's ITC	Electrician	42
	Fitter	42
Plantation Workers ITC	Cutting and Tailoring renamad as Cutting and Sewing	21
CMS ITC	Instrument Mechanic	42
	Mechanic Radio and Television	42
Sri Amman ITC Kattapettu	Electrician	42
	Wireman	42
Total Capacity		1134

Source: Department of Employment and Training (2011), Athena Research (2012)

THOOTHUKKUDI

ITI/ITC	Trade	Capacity
Vinnarasi ITC	Electrician	42
	Fitter	42
	Welder (Gas & Electric)	42
SCAD ITC	Driver Cum Mechanic (Light Motor Vehicle)	42

	Fitter	42
	Mechanic Consumer Electronics	42
	Welder (Gas & Electric)	42
Umarupulavar Govt. ITI	Electrician	42
	Fitter	42
	Welder (Gas & Electric)	42
Total Capacity		420

Source: Department of Employment and Training (2011), Athena Research (2012)

TIRUNELVELI

ITI/ITC	Trade	Capacity
Sri P.M.Sankara Sbbiah Me	Fitter	42
	Mechanic (Motor Vehicle)	42
A G Industrial School	Fitter	42
	Mechanic (Motor Vehicle)	42
	Welder (Gas & Electric)	21
C M S Tailoring Institute	Cutting and Tailoring renamad as Cutting and Sewing	42
	Embroidery & Needle Work	42
Mohammed Ismail ITC	Draughtsman (Civil)	42
	Electrician	42
	Fitter	42
	Mechanic (Refrigration and Air Conditioning)	84
	Mechanic Radio and Television	42
	Plumber	42
Govt ITI	Draughtsman (Mechanical)	42
	Electrician	42
	Fitter	63
	Instrument Mechanic (Chemical Plant)	63
	Machinist	42
	Mechanic Maintenance (Chemical Plant)	42
	Mechanic (Refrigration and Air Conditioning)	42
	Turner	63
	Welder (Gas & Electric)	63
NMS Ayya Vaikundar ITC	Driver Cum Mechanic (Light Motor Vehicle)	42
	Electrician	42
	Fitter	42
Institute of Engg. ITC	Electrician	42
	Fitter	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
Govt ITI Tirunelveli	Fitter	147

	Machinist	126
	Mechanic (Motor Vehicle)	126
	Mechanic Radio and Television	63
	Turner	210
	Welder (Gas & Electric)	168
	Wireman	126
Industrial Tech. Institute	Computer Operator and Programming Assistant	84
	Desk Top Publishing Operator	84
	Electrician	84
	Mechanic (Refrigration and Air Conditioning)	84
St. Marys ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	84
	Wireman	42
Kattaabomman ITC	Mechanic (Motor Vehicle)	42
Malar Computer ITC	Computer Operator and Programming Assistant	42
	Electrician	42
	Mechanic (Motor Vehicle)	42
Fancy ITC	Electrician	84
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	84
Marudhupandiar ITC	Computer Operator and Programming Assistant	21
	Electrician	42
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	42
P.G.P. ITC	Driver Cum Mechanic (Light Motor Vehicle)	21
	Electrician	84
	Fitter	42
	Mechanic (Motor Vehicle)	42
	Mechanic (Refrigration and Air Conditioning)	42
	Plumber	21
Little Flower ITC	Computer Operator and Programming Assistant	42
	Hospital House Keeping	21
	Insurance	21
CMS ITC for Women	Mechanic Radio and Television	42
SCAD Gromodhaya ITC	Electrician	84
	Fitter	84
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	84
Sun ITC	Fitter	42
	Wireman	42

Tirunelveli ITC	Mechanic (Motor Vehicle)	42
Evergreen ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
Jeyanthinather ITC	Fitter	42
Everest ITC	Electrician	42
	Mechanic (Motor Vehicle)	84
Senaithalaivar ITC	Mechanic (Diesel)	42
Thiruneelakandar ITC	Electrician	42
	Fitter	42
Florence Swainson ITC	Electronics Mechanic	42
Diwan ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
Sri. Palvannan Memorial I	Fitter	42
	Wireman	42
Agess ITC	Electrician	42
	Fitter	42
	Welder	21
Jai Guru ITC	Electrician	84
	Fitter	84
	Mechanic (Motor Vehicle)	42
Total Capacity		5145

Source: Department of Employment and Training (2011), Athena Research (2012)

TIRUVANNAMALAI

ITI/ITC	Trade	Capacity
Kamban ITC	Electrician	84
	Fitter	42
	Mechanic (Motor Vehicle)	84
ARNI ITC	Electrician	84
	Fitter	84
	Mechanic (Motor Vehicle)	84
	Wireman	21
Don Bosco ITC	Electrician	42
	Mechanic (Motor Vehicle)	84
Cheyyar ITC	Draughtsman (Mechanical)	42
	Draughtsman (Civil)	42
	Electrician	168
	Fitter	84
	Mechanic (Motor Vehicle)	105

	Wireman	105
Govt ITI, Vengikkal	Draughtsman (Mechanical)	42
	Electrician	42
	Foundaryman	42
	Fitter	84
	Mechanic (Diesel)	42
	Machinist (Grinder)	42
	Machinist	84
	Blank/Not filled	42
	Mechanic (Motor Vehicle)	42
	Mechanic (Refrigration and Air Conditioning)	42
	Pattern Maker	42
	Sheet Metal Worker	84
	Turner	84
	Welder (Gas & Electric)	84
Tamil Nadu ITI	Fitter	21
	Wireman	21
Codep ITI, Chettupattu	Fitter	42
	Mechanic (Motor Vehicle)	84
	Welder (Gas & Electric)	42
V.A. Arunachala Mudaliar Balambal ITC	Data Preparation and Computer Software	21
	Electrician	84
	Mechanic (Motor Vehicle)	42
Acharya Kund Kund ITC	Electrician	42
	Fitter	42
	Hand Compositer	21
	Mechanic (Motor Vehicle)	42
Mahatma Gandhi ITC	Cutting and Tailoring renamad as Cutting and Sewing	21
	Mason (Building Constructor)	21
Sri Srinivasa Industrial Training Centre	Electrician	21
	Fitter	42
Sri Renugambal ITC	Electrician	42
	Mechanic (Motor Vehicle)	42
Saviours ITC	Electrician	42
	Mechanic (Motor Vehicle)	42
Shanmuga ITC	Fitter	21
Dhanalakshmi ITC	Computer Operator and Programming Assistant	42
Arignar Anna ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
Shri Lakshmi Saraswathi ITC	Electrician	42

	Mechanic (Motor Vehicle)	42
Sambuvarayar ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	63
LAKSHMI AMMAL ITC	Electrician	42
	Mechanic (Motor Vehicle)	42
SRI KALAIMAGAL ITC	Fitter	84
THIRUMALAI ITC	Electrician	42
SRI VENKATESWARA ITC	Electrician	42
	Fitter	42
SRI SWAMI VIVEKANANDA ITC	Electrician	42
	Fitter	84
	Mechanic (Motor Vehicle)	42
	Wireman	42
Om Sakthi ITC	Fitter	42
	Welder (Gas & Electric)	42
S.K.V ITC	Welder (Gas & Electric)	42
	Wireman	42
Arunai ITC	Electrician	42
	Fitter	84
	Wireman	84
Polur ITC	Fitter	84
	Mechanic (Motor Vehicle)	42
	Welder (Gas & Electric)	42
	Wireman	42
Total Capacity		4242

Source: Department of Employment and Training (2011), Athena Research (2012)

VELLORE

ITI/ITC	Trade	Capacity
RI.ACTC FOR WOMEN	Computer Operator and Programming Assistant	42
S.J.I.SCHOOL	Welder	21
P.I.T.C	Draughtsman (Mechanical)	42
	Draughtsman (Civil)	42
	Electrician	84
	Fitter	42
	Mechanic (Motor Vehicle)	84
J.I.T.C	Computer Operator and Programming Assistant	21
	Leather Goods Maker	21
Sri Krishna ITC	Electrician	42
	Fitter	84

Katpadi ITC	Electrician	84
A.T.T.CENTRE	Electrician	42
	Welder (Gas & Electric)	21
	Wireman	42
Worth Technical Training	Draughtsman (Mechanical)	42
	Draughtsman (Civil)	42
	Electronics Mechanic	42
	Machinist	42
	Turner	42
Ranipet ITC	Electrician	84
	Fitter	84
Islamiah ITC	Electrician	84
	Electronics Mechanic	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
	Mechanic (Refrigration and Air Conditioning)	42
Krishna TC	Draughtsman (Mechanical)	42
	Draughtsman (Civil)	21
	Electrician	126
	Fitter	126
	Mechanic (Motor Vehicle)	84
	Wireman	42
Tirupattur ITC	Electrician	126
	Fitter	84
	Mechanic (Motor Vehicle)	126
SRI S.S.I.T.C	Fitter	42
	Wireman	42
Vithyas ITC	Electrician	42
	Fitter	42
	Wireman	42
K.I.T.C	Electrician	126
	Mechanic (Motor Vehicle)	252
	Mechanic (Refrigration and Air Conditioning)	84
	Mechanic Radio and Television	42
	Wireman	42
YMCA ITC	Data Preparation and Computer Software	42
	Electrician	84
	Mechanic (Motor Vehicle)	42
V.I.T.C	Electrician	42
	Fitter	42
T.I.T.C	Electrician	84

	Fitter	84
	Mechanic (Motor Vehicle)	84
T.T.T.I	Electrician	21
	Fitter	63
Sri Ramachandra ITC	Data Preparation and Computer Software	42
	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
Shri Ragavendra ITC	Electrician	84
	Fitter	42
St. Peter's ITC	Electrician	21
	Fitter	21
	Leather Goods Maker	21
	Mechanic (Motor Vehicle)	21
	Manufacture of Footwear	21
SRI.V.I.TC	Electrician	84
	Fitter	42
	Mechanic (Motor Vehicle)	84
Gudiyatham ITC	Electrician	84
	Fitter	42
	Mechanic (Motor Vehicle)	42
Bharathidasan ITC	Electrician	42
	Mechanic (Motor Vehicle)	42
Dr Thangamma ITC	Mechanic (Motor Vehicle)	42
Umapathi ITC	Fitter	42
Nethaji ITC	Electrician	42
	Fitter	42
Priyadarshini ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
	Mechanic (Refrigration and Air Conditioning)	42
Maragathambigai ITC	Fitter	42
SWAMY V.I.T.C	Electrician	84
	Fitter	84
	Mechanic (Motor Vehicle)	84
BALAJI ITC	Electrician	84
	Fitter	84
	Mechanic (Motor Vehicle)	84
P.A.T.C..LTD.I.T.C	Mechanic (Motor Vehicle)	42
SRI .L.I.T.C	Electrician	42
Govt. ITI	Electrician	63

	Fitter	63
	Mechanic (Diesel)	42
	Machinist (Grinder)	42
	Mechanic (Motor Vehicle)	42
	Mechanic Radio and Television	42
	Stenography (English)	42
	Stenography (Hindi)	42
	Turner	42
Goverment ITI	Carpenter	21
	Draughtsman (Civil)	42
	Electrician	42
	Fitter	168
	Leather Goods Maker	42
	Machinist	84
	Mechanic (Motor Vehicle)	42
	Manufacture of Footwear	21
	Sheet Metal Worker	21
	Turner	84
	Welder	42
	Wireman	42
Goverment ITI	Electrician	63
	Fitter	42
	Plumber	21
	Welder	63
Bharatiyar ITC	Fitter	42
Indira Gandhi I..T.C	Fitter	21
	Welder	21
T.N.S.T.C ITC	Mechanic (Motor Vehicle)	42
Vellore Institute ITC	Craftsmen Food Production (General)	42
Selvam ITC	Driver Cum Mechanic (Light Motor Vehicle)	21
	Pre/ Preparatory School Management (Assistant)	21
Sree Sastha Private ITI	Fitter	42
	Wireman	42
Total Capacity		6846

Source: Department of Employment and Training (2011), Athena Research (2012)

VILUPPURAM

ITI/ITC	Trade	Capacity
Newton ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42

Gomuki ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
	Wireman	42
Thiruvalluvar ITC	Electrician	21
	Fitter	21
	Wireman	42
Rajiv Gandhi ITC	Electrician	42
	Mechanic (Motor Vehicle)	42
Bharathi ITC	Fitter	84
Indian Child Welfare Service (ICWS) ITC	Cutting and Tailoring renamad as Cutting and Sewing	21
	Fitter	84
	Mechanic (Motor Vehicle)	84
	Wireman	42
Palanivelu ITC	Electrician	84
	Fitter	42
	Mechanic (Motor Vehicle)	42
Shri Lakshmi ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
Arcot Luthoran ITC	Electrician	42
	Mechanic (Motor Vehicle)	42
Raja Desingh ITC	Electronics Mechanic	42
	Fitter	42
	Mechanic (Motor Vehicle)	84
Sri Nataraja ITC	Electrician	84
	Mechanic (Motor Vehicle)	42
	Welder	42
Holy Sabari Santha ITC	Electrician	42
	Mechanic (Motor Vehicle)	42
The Leprosy Mission Regional ITC	Cutting and Tailoring renamad as Cutting and Sewing	21
	Electrician	42
	Mechanic (Motor Vehicle)	84
Modern ITC	Electrician	84
	Fitter	42
	Mechanic (Motor Vehicle)	84
Sri Venkateswara ITC	Electrician	42
	Mechanic (Motor Vehicle)	42
Thanthai Periyar ITC	Electrician	42
St. Xaviers ITC	Cutting and Tailoring renamad as Cutting and Sewing	21
	Information Technology & Electronics System Maint.	42

	Fitter	42
Sri Ram ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
K.S.RAJA ITC	Fitter	42
	Mechanic (Motor Vehicle)	42
KALAIMAGAL ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
OM SAKTHI ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
SRI. VENKATESWARA ITC	Mechanic (Motor Vehicle)	21
RANGABHUPATI ITC	Plumber	21
SRI. INDHIRA ITC	Electrician	42
	Fitter	42
KUMAR S ITC	Computer Operator and Programming Assistant	21
	Electrician	42
	Instrument Mechanic	42
	Mechanic (Motor Vehicle)	42
NATARAJ ITC	Draughtsman (Civil)	42
	Electrician	42
	Fitter	63
	Mechanic (Motor Vehicle)	42
TAMIL NADU STATE TRANSPORT CORPORATION LTD..	Mechanic (Motor Vehicle)	42
TAGORE ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
SRI.VENKATESWARA ITC	Fitter	42
	Mechanic (Motor Vehicle)	42
	Wireman	42
ST.JOSEPH S INDUSTRIAL SCHOOL	Electrician	42
	Mechanic (Motor Vehicle)	84
HAJIYA AYISHA AMMA ITC	Draughtsman (Civil)	42
DR.ABDUL GHAFOOR ITC	Draughtsman (Civil)	42
	Electrician	42
	Fitter	84
	Mechanic (Diesel)	21
	Plumber	21

	Welder	42
	Wireman	42
Goverment ITI, Ulundurpet	Fitter	84
	Mechanic (Motor Vehicle)	21
	Sheet Metal Worker	21
	Turner	84
	Welder	84
	Wireman	42
Goverment ITI, Sankarapuram	Fitter	42
	Marine Fitter	42
	Mechanic (Diesel)	21
	Mechanic (Motor Vehicle)	42
	Wireman	42
Carmel ITC	Driver Cum Mechanic (Light Motor Vehicle)	42
Dhanamoorthy ITC	Electrician	42
	Welder (Gas & Electric)	42
Govt. ITI, Ulundurpettai	Computer Operator and Programming Assistant	42
Total Capacity		4536

Source: Department of Employment and Training (2011), Athena Research (2012)

VIRUDHUNAGAR

ITI/ITC	Trade	Capacity
Govt ITI Virudhunagar	Carpenter	21
	Fitter	84
	Machinist	63
	Mechanic (Tractor)	42
	Mechanic (Motor Vehicle)	42
	Turner	84
	Welder (Gas & Electric)	42
	Wireman	84
Arasan Ganesan ITC	Computer Operator and Programming Assistant	21
Arulmigu Kalasalingam ITC	Draughtsman (Civil)	21
	Fitter	42
	Lift Mechanic	42
Sri Jayavilas Subbaraj Me	Fitter	21
	Mechanic (Motor Vehicle)	105
	Wireman	42
Vivekananda ITC	Electrician	84
	Mechanic (Motor Vehicle)	84
	Mechanic (Refrigration and Air Conditioning)	84
Srinivasa Industrial Trai	Computer Operator and Programming Assistant	42

	Electrician	21
	Mechanic (Motor Vehicle)	42
Ramco ITC	Dress Making	42
	Electrician	84
	Electronics Mechanic	42
	Fitter	84
	Mechanic (Diesel)	42
	Mechanic (Motor Vehicle)	84
	Mechanic (Refrigration and Air Conditioning)	42
	Plumber	42
	Welder	42
	Wireman	84
Sri Padmanaba ITC	Electrician	42
	Fitter	42
	Mechanic (Motor Vehicle)	42
	Mechanic (Refrigration and Air Conditioning)	42
Somasundaram ITC	Cutting and Tailoring renamad as Cutting and Sewing	21
	Computer Operator and Programming Assistant	21
	Electrician	42
	Fitter	84
	Mechanic (Motor Vehicle)	42
	Plumber	42
Sarva Seva ITC	Computer Operator and Programming Assistant	21
	Fitter	42
	Mechanic (Diesel)	42
	Mechanic (Refrigration and Air Conditioning)	42
	Wireman	42
Sreenivasa ITC	Computer Operator and Programming Assistant	42
	Electrician	84
	Fitter	42
	Mechanic (Motor Vehicle)	84
Thiruchuli Co-op. ITC	Cutting and Tailoring renamad as Cutting and Sewing	42
	Computer Operator and Programming Assistant	42
Dolphin ITC	Computer Operator and Programming Assistant	42
Pabanas ITC	Computer Operator and Programming Assistant	84
Ramalakshmi ITC	Electrician	84
	Fitter	84
	Mechanic (Motor Vehicle)	84
Vinayaga ITC	Electrician	84
	Mechanic (Diesel)	84
	Mechanic (Motor Vehicle)	84

Arul Miku Sri Andai ITC	Electrician	42
	Fitter	42
Maulana Abul Kalam Azad	Fitter	42
	Wireman	42
Sri Kumaran ITC	Electrician	42
	Fitter	42
Total Capacity		3528

Source: Department of Employment and Training (2011), Athena Research (2012)

This report has been prepared by Athena Infonomics.

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Athena Infonomics is a public policy and management consulting firm which blends research insights with experiential knowledge to address developmental, growth and strategy issues of our clientele. Our capability to generate 'actionable knowledge' is the primary driver of our business. Pursuit of new ideas, solutions and strategies through continuous research is central to our consulting operations.

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