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National
Skill Development
Corporation



District wise skill gap study for the State of Uttarakhand (2017, 2022)



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List of Abbreviations and Acronyms

AEZ	Agriculture Economic Zone
ADM	Assistant District Magistrate
APEDA	Agricultural and Processed Food Products Export Development Authority
B.Ed.	Bachelor of Education
BBA	Bachelor of Business Administration
BHEL	Baharat Heavy Electrical Limited
BPO	Business Process Outsourcing
CAGR	Compounded Annual Growth Rate
CMH	Commission on Macroeconomic and Health
CNC	Computer Numerical Control
COE	Center for Excellence
CONCOR	Container Corporation of India Ltd
CST	Central Sales tax
DAO	District Agriculture Officer
DHE	Directorate of Higher education
DIC	District Information Center
DLCU	District Level Coordination Units
DSTO	District Statistical Organization
GDDP	Gross District Domestic Product
GoI	Government of India
GSDP	Gross State Domestic Product
HYV	High Yielding Variety
IGNFA	Indira Gandhi National Forest Academy
IHM	Institute of Hotel Management
IIEs	Industrial Estates
ISDS	Integrated Skill Development Scheme
ITDA	Information Technology Development Agency
ITI	Industrial Training Institute
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
KGCCI	Kumaun Garhwal Chambers of Commerce and Industries
KPO	Knowledge Process Outsourcing
KVK	Krishi Vigyan Kendra
LBSNAA	Lal Bahadur Shahstri National Academy of Administration
LMIS	Labor Management Information System
MBA	Master of Business Administration
MCA	Master of Computer Analysis

MIS	Management Information System
MNPB	Natural Medicinal Plant Board
MoFPI	Ministry of Food Processing Industry
MOHRD	Ministry of Human Resource Development
MSME	Micro Small and Medium Enterprise
NA	Not Applicable
NABARD	National Bank for Agriculture and Rural Development
NCSD	National Council on Skill Development
NCVT	National Council for Vocational Training
NeGP	National e-Governance Plan
NHB	National Horticulture Board
NSDC	National Skills Development Corporation
NSDCB	National Skill Development Co-ordination Board
NSSO	National Sample Survey Organization
NTFP	Non Timber Forest Produce
OBC	Other Backward Class
PM&M	Pithoragarh Magnesite & Mineral's
PMGSY	Padhan Mantri Gram Sadak Yojna
PPP	Public Private Partnership
REGP	Rural Employment Generation Programme
SAZ	Special Agriculture Zones
SC	Schedule Caste
SCVT	State Council for Vocational Training
SDC	Skill Development Cell
SDTCs	Skill Development Training Centres
SGRY	Sampoorna Grameen Rozgar Yojana
SGSY	Swarnjayanti Gram Swarozgar Yojana
SHG	Self Help Groups
SIDCUL	State Infrastructure and Industrial Development Corporation of Uttarakhand Limited
SSI	Small Scale Industries
ST	Schedule Tribe
TOT	Training of Trainers
TRYSEM	Training of Rural Youth for Self-Employment
UCDF	Uttarakhand Co-operative Dairy Federation
UNDP	United Nations Development Program
UOCB	Uttarakhand Organic Commodity Board
USDS	Uttarakhand Skill Development Society

VT	Vocational Training
VTC	Vocational Training Centers
VTIP	Vocational Training Improvement Programme
VTP	Vocational Training Providers
WTO	World Trade Organization

Disclaimer

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1. Introduction

1.1 Background¹

The National Skill Development Corporation ('NSDC') was set up as part of the Government's coordinated action in the skills space with the specific target of skilling/up-skilling 150 million people by 2022, mainly by fostering private sector initiatives in this area. In order to achieve this target NSDC has been working on three key mandates:

- ▶ **Create:** Proactively catalyze creation of large, quality vocational training institutions;
- ▶ **Fund:** Reduce risk by providing patient capital and improve returns by providing viability gap funding;
- ▶ **Enable:** Facilitate the creation of support systems required for skill development.

Developing a research base is one of the critical activities and NSDC has undertaken Sector Skill Gap Studies for the 20 high priority sectors. In addition District skill gap studies have been commissioned for various States for use by different stakeholders like State Governments, training organisations, industry associations, trainees etc.

As part of its research activities, NSDC now intends to undertake District wise skill gap study for the State of Uttarakhand.

1.2 Scope of work

The study included a review of the following at an overall State and for all Districts of the State:

- ▶ Socio-economic profile – demography, economic profile of District by industry, State of education;
- ▶ Identify developmental opportunities keeping in mind factor endowments and stakeholder perspectives;
- ▶ Identify specific developmental initiatives/projects which have an impact on employment generation;
- ▶ Articulate aspirations of the youth;
- ▶ Identify the current and future (2012 to 2021) skills and manpower requirements by industry and estimate the gap that exists;
- ▶ Study the existing vocational training infrastructure both in the private sector and the Government domain;
- ▶ Identify current schemes and programmes relating to skill development and their achievements / challenges;
- ▶ Suggest suitable interventions/recommendations to address the skills gap
 - Recommendations have to be specific and actionable;
 - Recommendations should also include specific initiatives that NSDC can take based on the mandate of the organization;
- ▶ Create an action plan with indicative timelines;

1.3 Key definitions used in the report

Minimally Skilled Manpower: Minimally skill category includes literates without education level, and having qualification up to 10th Standard or below;

¹ Terms of reference for District skill gap study for the State of Uttarakhand.

Semi -Skilled Manpower: Semi skill category 10+2 or equivalent and vocationally trained;

Skilled Manpower: Skilled Manpower includes technical diploma, degree and above

Human Resource Requirement: Refers to the projected human resource requirement at different skill level across Districts and NSDC growth sectors;

Human Resource Availability: Refers to the availability of the labor force at its composition as per skill category based on level of education, population growth rate, working age population, labor force participation and enrollment.

1.4 Our approach and methodology

The study was performed in three interrelated stages as specified below:

Stage I: Preparatory/Planning

- ▶ Inception meeting with NSDC to develop common understanding of the engagement, seek suggestions on the methodology and work-plan;
- ▶ Discussion on support required from NSDC and the State Government particularly in coordinating with the Government officials at the State and District level;
- ▶ Collection of existing secondary literature/data available on labor market, existing State Government policies, growth potential of different sectors (primary, secondary and tertiary) and skill development in Uttarakhand;
- ▶ Introduction of engagement manager and other team members to the State Government; finalize engagement protocols.

Stage II: Field visit and data analysis

- ▶ The overall project team was sub-divided into five separate groups who undertook field visit to all Districts and collected information through semi structured interviews and focus group discussions. List of people which were consulted during this study has been provided in Annexure 1.
- ▶ Methodology: This entailed the following activities:
 - **Human resource requirement (demand):** To estimate the total requirement of labor work force, key trades were identified and the trades were prioritized based on its potential to absorb labor work force. The projection of future workforce requirements for the identified sectors (till 2022) was done sector wise and skill wise. The study involved identification of employment potential in various sectors and analysis of employment and investment trends in these sectors. While doing the projections, we considered the policy environment and other factors that could accelerate the growth thereby enhancing the workforce requirement.
 - **Human resource availability (supply):** District wise population data for 2011 was multiplied by labor force participation rate to arrive at the labor force in each District which was further classified into different skill categories based on education levels in each District. In addition enrolments and students in the system data at different educational levels were factored in. Additional labor supply was forecasted (2012-2022) to grow at District level historical student growth rates at each education level. The additional supply for each forecast year was used to compute total supply for 2012-2022.
 - **Skill gap analysis:** Human resource demand-supply gap has been computed by taking difference of demand and supply numbers for each skill category for the period 2012-2022.

Stage III: Reporting

- ▶ Presentation of key findings and recommendations to NSDC and the Steering Committee;
- ▶ Submission of draft report along with the recommendations;
- ▶ Finalization of report post discussion with NSDC.

1.5 Limitations

Ernst and Young would like to draw attention to the following limitations in respect this engagement:

- ▶ It is possible that a number of individuals have acquired skills through traditional means (family) or learnt through experience. Since the numbers of individuals in this category are not available, we have not included this in our analysis.
- ▶ The available data sources like Economic Census of Uttarakhand 2005 provide information either by different occupation establishments or by qualification. The information related to jobs by skill/designation is not available through such reliable sources.
- ▶ It was a challenge to undertake secondary data analysis since there was paucity of data – both current and past. In addition, many a times there was a mismatch between data on a particular indicator taken from two different sources, even though we have tried use the most reliable data source, however we do not take any responsibility in any way whatsoever to any person in respect of errors in this report, arising from incorrect information provided by the different data sources.
- ▶ There is a huge potential for the tourism sector in the State, however the recent calamity may have an impact on the overall projected numbers. The field work and analysis for the report was completed by February 2013 before the calamity.

1.6 About this report

The main body of this document is organized into the following Chapters (excluding this):

- ▶ Chapter 2 titled 'Socio-economic profile of Uttarakhand' provides a macroeconomic overview, economic sectors overview and infrastructure overview along with the key policies and initiatives taken by the State Government in the recent past;
- ▶ Chapter 3 titled 'Skill gap scenario for Uttarakhand' provides District wise human resource requirement (sector and skill category wise), District wise supply of human resource and analysis of gap;
- ▶ Chapter 4 titled 'Stakeholders Perspective' provides District wise overview of the key growth sectors shared by various stakeholders, key challenges and support required;
- ▶ Chapter 5 titled 'Recommendations and Action Plan' provides our recommendations and road map for the State Government, training providers, industry and NSDC;

2. Socio-economic profile of Uttarakhand

2.1 Macro-economic overview



Source: *Maps of India*

Uttarakhand was carved out of the State of Uttar Pradesh on 9th November 2000 and was the 27th State of India. It is strategically located at the foothills of the Himalayan range. Forming the northern part of the country, it shares its boundary with China, Tibet in the north, Himachal Pradesh in the west and north-west, Gangetic plains of Uttar Pradesh in the south and Nepal in the east. The total geographic area² of the State is 53,483 sq. km (1.63 percent of India) with a total population of 1.01 Crore. Dehradun is the capital of the State.

The State of Uttarakhand is a rich repository of natural resources with plenty of water resources, glaciers, and dense forests. It is endowed with around 175 rare species of aromatic and medicinal plants³. Rich in natural resources, the State has almost all major climatic zones, making it suitable for a variety of commercial opportunities in horticulture and floriculture activities. The mainstay of the economy is agriculture as more than 75 percent of the total population depends on agriculture for their livelihood. Uttarakhand holds immense importance as a religious place and experiences vast inflow of domestic as well as international tourists. Badrinath, Kedarnath, Gangotri, Yamunotri and Haridwar attract regular religious tourists which significantly add to the State economy. The State is divided into two regions i.e. Garhwal and Kumaon and comprises 13 Districts out of which four Districts are in the plains and the other nine are in the hills.

² <http://www.census2011.co.in/census/state/districtlist/uttarakhand.html>

³ <http://www.phdcci.in/admin/userfiles/file/Research-Bureau/Uttarakhand.pdf>

2.2 Demographic profile

Table 1: Socio economic indicators of the State

Population	Uttarakhand	India	Source
Area (in Sq. Km)	53,483	32,87,240	http://www.census2011.co.in/states.php
Percentage share of State Geographical area	1.63%	N.A	N.A
Total population (in lakh)	101.17	12,101.93	Census 2011 (provisional data)
Total population (Male) (in lakh)	51.54	6,237.24	http://censusindia.gov.in/2011-prov-results/indiaatglance.html
Total population (Female) (in lakh)	49.63	5,865.70	http://censusindia.gov.in/2011-prov-results/indiaatglance.html
States share in total population	0.83%	N.A	N.A
Density of population	189	382	http://censusindia.gov.in/2011-prov-results/indiaatglance.html
Decadal growth of population (2001-2011)	19.17%	17.64%	http://censusindia.gov.in/2011-prov-results/indiaatglance.html
Urban population (in lakh)/Percentage	30,91169/ 30.55%	3,771,06/ 31.16%	http://indiafacts.in/india-census-2011/urban-rural-population-o-india/
Rural Population (in lakh)/Percentage	70,25,583/ 69.45%	8,330,87 /68.84%	http://indiafacts.in/india-census-2011/urban-rural-population-o-india/
Scheduled Caste population percentage of State population	17.90%	16.2%	Census 2001
Schedule Tribe population percentage of State population	3%	8.2%	Census 2001
Sex ratio	963	940	http://censusindia.gov.in/2011-prov-results/indiaatglance.html

As per the census 2011 (provisional data) the total population of Uttarakhand is 1.01 Crore, making it the 20th most populated State in India (comprising of 0.83% of the country's population). During the last decade (2001-2011), the population of Uttarakhand grew at 19.17 percent which is higher than the national average of 17.6 percent. Though there has been a rapid increase in population, the density of population is 189 per sq.km which is below the national average of 382 per sq.km.

According to Census 2001, the socially backward classes such as Scheduled Caste ('SC') and Scheduled Tribes ('ST') represent 17.9 percent and 3 percent of the State population respectively. The sex ratio was unfavorable at 963 females per 1,000 males, though it is still higher than India's sex ratio of 940.

The literacy rate in the State has seen an upward trend from 71.62 percent in 2001 to 79.63 percent in 2011. Female literacy stands at 70.70 percent and male literacy at 88.33 percent. The following Table 2 provides an overall District wise comparison on various indicators such as population, population density, sex ratio, female population, literacy rate and decadal growth rate.

Table 2: District wise comparison on various indicators

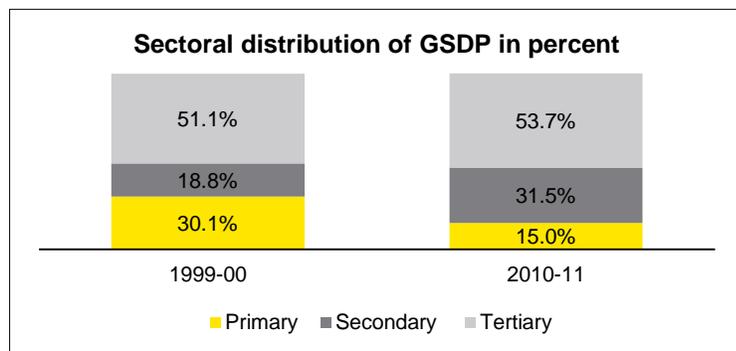
Name of the District	Population (%)	Percentage of female population	Population density (Per sq. Km.)	Sex ratio (female per 1000 males)	Literacy rate (%)	Decadal Growth Rate (%)
Uttarkashi	3.26	48.9	41	959	76.0	11.75
Chamoli	3.87	50.5	49	1021	83.5	5.6
Rudraprayag	2.34	52.8	119	1120	82.1	4.14
Tehri Garhwal	6.09	51.9	169	1078	75.1	1.93
Dehradun	16.79	47.4	550	902	85.2	32.48
Garhwal	6.79	52.5	129	1103	82.6	-1.51
Pithoragarh	4.8	50.5	69	1021	82.9	5.13
Bageshwar	2.57	52.2	116	1093	80.7	5.13
Almora	6.15	53.3	198	1142	81.1	-1.73
Champawat	2.56	49.5	147	981	80.7	15.49
Nainital	9.44	48.3	225	933	84.9	25.2
Udham Singh Nagar	16.29	47.9	648	919	74.4	33.4
Hardwar	19.05	46.8	817	879	74.6	33.16
Uttarakhand	100	49.1	189	963	79.63	19.17

Source: Census 2011 (provisional data)

The density of population varies from 41 per sq.km in Uttarkashi to 817 per sq/km. in Haridwar. There is higher proportion of women residing in some Districts like Rudraprayag, Tehri Garhwal, Garhwal, Bageshwar, Pithoragarh and Almora. Although gender dimension should be considered in all the Districts, these Districts may be seen more closely to ascertain whether their skill development needs are being met. As seen in the table above, despite having high literacy rates, some Districts are showing low growth. Almora and Garhwal in particular are showing a negative growth rate. There is correlation between the population size and decadal growth. Areas which are able to generate employment opportunities have a higher proportion of people residing there.

2.3 Economic sectors overview

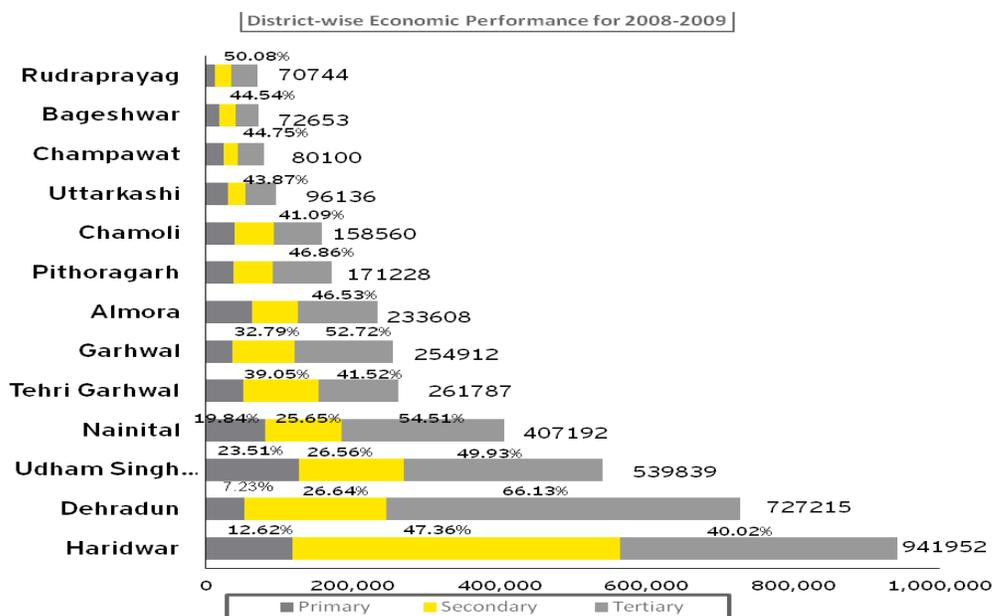
The percentage share of the primary, secondary and tertiary sectors in the overall GSDP⁴ has been analyzed below:



As can be seen the share of agriculture in the primary sector is on a decline, whereas that of secondary and tertiary is rising. It is notable that the growth of industrial sector has been significant despite the difficulties of terrain and topography. Share of GSDP in the secondary sector has shown a remarkable increase from 18.8 percent from 1999-2000 to 31.5 percent during the year 2010-2011. The contribution of

tertiary sector to the GSDP has increased marginally to 53.7 percent in 2010 -2011 from 51.1 percent during 1999-2000.

Haridwar, Dehradun, Udham Singh Nagar & Nainital together contribute⁵ more than 50 percent of the total GSDP of the State. The major source of contribution is Industry (primary sector) in case of Haridwar, however in case of Dehradun; Udham Singh Nagar & Nainital majority of the contribution comes from the tertiary sector.



Source: Directorate of Economics and Statistics, Government of Uttarakhand (2008-2009)

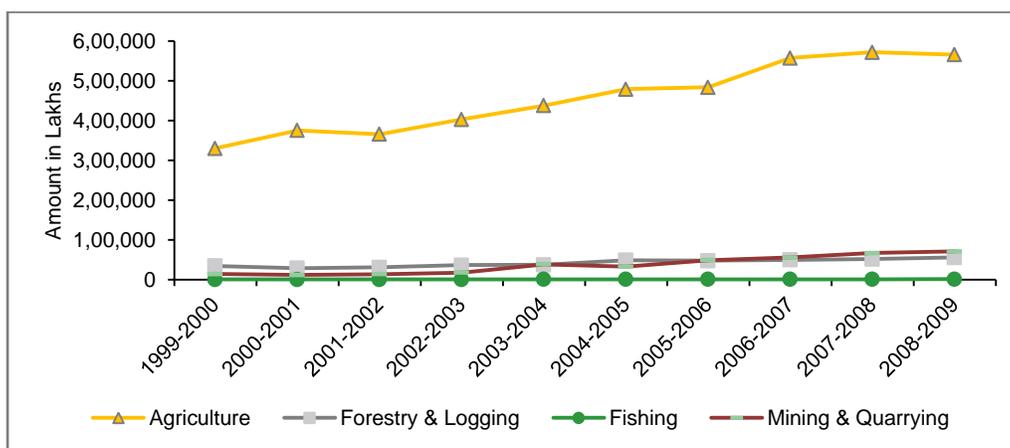
⁴ Presentation on Uttarakhand 12th five year plan & annual plan 2012-13

⁵ Directorate of Economics and Statistics, Government of Uttarakhand (2008-2009)

Further analysis for the three sectors is given in the subsequent sections.

2.3.1 Primary sector

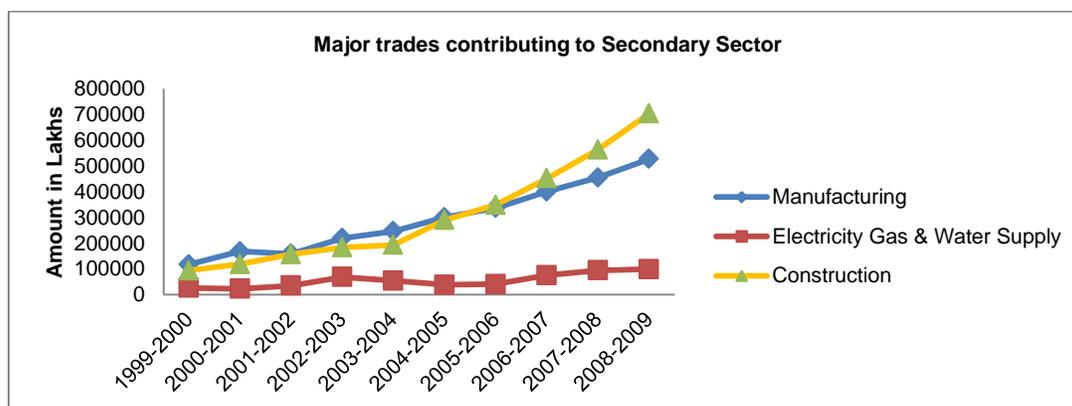
Even though the overall contribution of the primary sector in the total GSDP of the State has reduced between financial years 2000 to 2009, the CAGR from the same period for agriculture was 5.53 percent, followed by 4.86 percent for forestry & logging, and 17.28 percent for mining and quarrying. The climatic conditions within the State provide a favorable opportunity for development of horticulture and floriculture activities. Fruits such as apples, oranges, pears, grapes, peaches, plums, apricots, litchis and mangoes are widely grown in the State. Floriculture too is being developed in order to meet the demands of the domestic as well as the international market. The climate of the State makes it ideal for growing flowers all-round the year. Recognising the potential of the primary sector, the Agriculture Policy aims to develop it like an industry by developing Agriculture Economic Zones.



Source: Directorate of Economics and Statistics, Government of Uttarakhand

2.3.2 Secondary sector

There has been a paradigm shift in the sector-wise contribution to the GSDP growth of the State. Most of the growth after 2003 has come from the secondary sector and in particular from the manufacturing and construction sector. During the period of 2000 to 2009 construction grew fastest with a CAGR of 22 percent followed by manufacturing (16 percent) and Electricity Gas & Water Supply (14 percent). Special measures taken by the State to give incentives to set up industry has resulted in rapid development in the manufacturing sector as maybe seen in the graph below.



Source: Directorate of Economics and Statistics, Government of Uttarakhand

As mentioned in the Table 3 below, the concentration of major industries in Uttarakhand are in Dehradun, Haridwar, Uddham Singh Nagar, Pauri Garhwal, and Nainital. Major industry players include:

- ▶ Agro and Food Processing: Britannia Industries Limited, Nestle India Limited, Pepsi, KLA India Public Limited;
- ▶ FMCG Sector: ITC Limited, Dabur India Limited, CavinKare Private Limited, Hindustan Lever Limited;
- ▶ Heavy Engineering: Bharat Heavy Electrical Limited (BHEL);
- ▶ Automobile & Auto-components: Tata Motors, Ashok Leyland, Hero Honda, Mahindra & Mahindra;
- ▶ Electrical: Surya, Polaris Industries, Havel's India Limited;
- ▶ Other prominent industries: Somany foam Limited, VIP Industries Limited, Lakhani India Limited, Eureka Industries Limited, Twenty First Century Printers Limited

Table 3: Major Manufacturing industries in Uttarakhand

Districts	Major Industries
Dehradun	Heavy Machinery, Food Processing, Shoe Manufacturing, Electronics, Pharmaceutical
Haridwar	Automobile, Auto-components, FMCG, Electronics, Heavy Machinery, Pharmaceutical, Packaging Material, Textile Unit, Plastic Bottles, Steel, Glassware
Uddham Singh Nagar	Food Processing, Automobile, Auto-components, FMCG, Electronics, Textile, Steel, Plastic, Container, Glassware, Carpets
Pauri Garhwal	Electronics, Steel Bar Manufacturing Units
Nainital	Electronics, Paper, LPG Bottling Plant

As of December 2012, there are 230 Large scale industries in Uttarakhand with a total investment of 274,501.81 Crore. About 85,333 persons are employed in these industries. Table 4 below provides the current status of large scale industries in Uttarakhand.

Table 4: Large scale industries in Uttarakhand

District	Number of Industries	Investment (Crore)	Number of people employed
Dehradun	13	290.04	3,589
Haridwar	85	15895	47,375
Uddham Singh Nagar	126	9964.99	30,440
Nainital	4	1233.84	3,166
Pauri Garhwal	2	66.94	763
Total	230	27450.81	85,333

Source: Directorate of Industries, Uttarakhand

Micro Small, and Medium Enterprise (MSME)

The Micro, Small & Medium Enterprises Development Institute, Haldwani was set up on 2nd July, 1983 as a Branch Institute. Subsequently after formation of the Uttaranchal State the Branch MSME-DI was upgraded to the level of a full-fledged Institute on 15th June, 2001 in order to provide impetus for promotion and development of small scale industries in the newly created Himalayan State of Uttarakhand⁶.

Some of the main functions of this institute are⁷:

- ▶ Facilitate interface between various Central & State Government Departments and other developmental functionaries for the promotion of Small Scale Industries in the State of Uttaranchal;
- ▶ To conduct Management/ Entrepreneurship Development /Entrepreneurship Skill Development/ Business Development Programmes;
- ▶ To promote Cluster Development;
- ▶ To explore avenues for employment generation in rural & far-flung areas;
- ▶ To provide Technology Support Services.

In addition to above, the Institute re-orient its activities in accordance with the policy initiatives taken by the Ministry of Micro, Small & Medium Enterprises and the Government of India from time to time for promotion & development of the MSE Sector. Table 5 below shows the status of Micro, Small, and Medium Enterprises as on December 2012.

Table 5: Micro, Small, and Medium Enterprises in Uttarakhand

District	Number of Industries	Investment (Crore)	Number of people employed
Nainital	2,781	412.127	11,008
Udham Singh Nagar	4,665	2,983.259	42,821
Almora	2,987	53.816	5,804
Pithoragarh	2,123	34.655	4,584
Bageshwar	1,067	17.815	2,023
Champawat	879	22.59	1,928
Dehradun	6,117	845.691	36,450
Pauri Garhwal	4,210	158.686	11,212
Tehri Garwal	3,183	103.964	7,925

⁶ <http://www.msmedihaldwani.gov.in/index.php?mod=content&page=125>

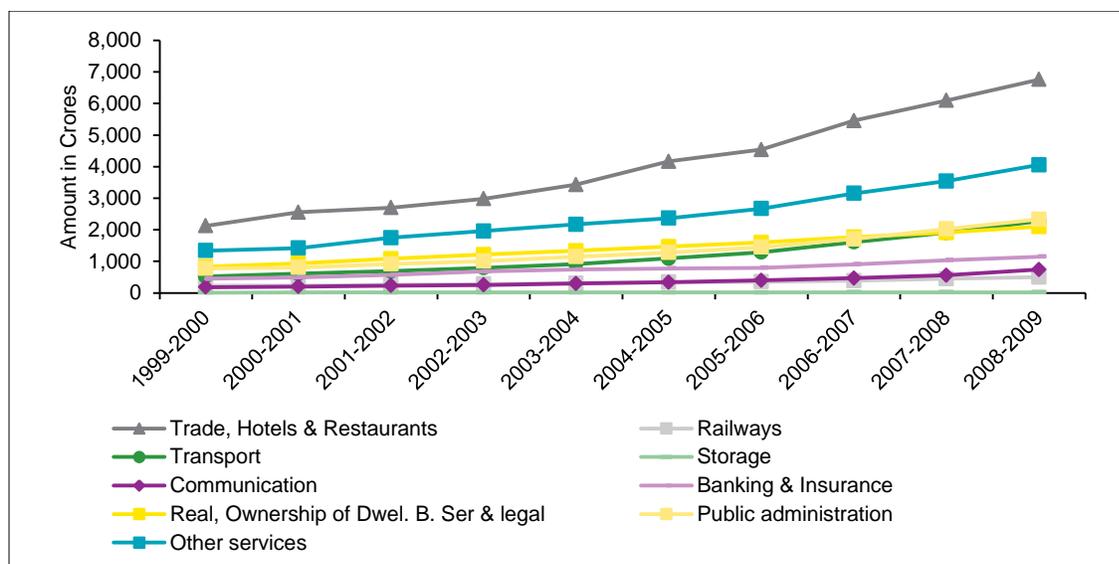
⁷ Not an exhaustive list of functions as mentioned in the MSME Annual Report 2011-12. Only key functions have been included.

District	Number of Industries	Investment (Crore)	Number of people employed
Chamoli	2,410	45.047	4,456
Uttarakashi	3,242	40.983	5,280
Rudrprayag	1,194	40.093	2,781
Haridwar	6,834	3,240.69	54,005
Total	41,692	7,999.419	190,277

Source: Directorate of Industries, Uttarakhand

2.3.3 Tertiary sector

The tertiary sector contributes more than 50 percent to the total GSDP of the State. Overall the sector grew at a CAGR of 12 percent over the last one decade. The highest increase was seen in transport sector that grew at a CAGR of 16 percent, followed by 15 percent for communication, and 12 percent for trade, hotels, and restaurants. Diagram below provides share of GSDP at current for tertiary sector.



Source: Planning Commission website, GOI

Tourism sector is the major contributor to the economy of Uttarakhand, with Raj-era hill stations at Mussorie, Almora, Ranikhet and Nainital being some of the most frequented destinations. The State also hosts important Hindu holy shrines in Haridwar, Rishikesh, Badrinath, and Kedarnath. Table 6 below shows growth percent of domestic as well as foreign tourists in Uttarakhand and India. It can be seen that the tourist inflows in the State, both domestic and foreign, has shown a significant increase in past 4-5 years.

Table 6: Trend of tourist arrival in Uttarakhand vis-a-vis India

Year	% Growth over previous year (Uttarakhand)	% Growth over previous year (India)

	Domestic	International	Domestic	International
2007	14.4	10.3	13.9	14.3
2008	4.1	5.4	6.9	4.0
2009	0.4	5.7	18.8	-2.2
2010	33.8	15.4	10.7	11.8

Sources: Ministry of Tourism, Uttarakhand, and Indiastats.com

As per the published figure by Ministry of Tourism for the year 2010, the State has improved its rank from 8th to 7th in case of domestic tourists, whereas it stands 16th in terms of foreign tourist inflows. With the development of physical infrastructure, the services sector of the State is expected to grow in the coming years. There is a high dependence of people on public administrative services.

2.4 Infrastructure

The development of infrastructure is vital for industrial growth and overall development of the State. Some of the key infrastructural issues that need attention in the context of skill development are industrial infrastructure, social infrastructure like education and health, transportation and communication facilities, and urban infrastructure.

2.4.1 Physical infrastructure & connectivity

Developing the physical infrastructure is very important for the overall development of the State. The approved outlay for infrastructural development in the State has increased from Rs.1,982.93 Crore in 2010-11 to Rs. 2,345.28 Crore in 2011-12⁸. The Government of Uttarakhand has identified physical infrastructure as one of the thrust areas that has potential to generate large scale employment and promote a favorable business environment.

Road connectivity

The State has given continuous priority to develop roads in order to improve connectivity and ensure safety since roads are the main means of transportation in the State. In the last ten years, the length and quality of the roads has improved. Along the hill road, drainage and parapet facilities have been provided; additionally most of the roads have been widened and beautified. All these have improved the travel conditions and have increased tourism activities in the State. However, still there is a lot to be done to improve the hilly and rural regions. Table 7 below provides an overview of the road infrastructure within the State:

Table 7: Road infrastructure in Uttarakhand

Road category (2011-12)	Length in Kms
National Highway	2,042

⁸ Presentation on Uttarakhand 12th five year plan & annual plan 2011-12

State highway	3,788
Major District roads	3,321
Other District roads	2,964
Rural roads	13,282

Source: Ministry of Roadways and Transport

Rail connectivity

Railway services are limited in the State and are restricted majorly to the plains. Almost 90 percent of the geographical area has hilly terrain and majority of the current services are fulfilled through road transport. However, the State has plans to increase the share of railways in cargo and passenger transport so that railways can be strategically placed as an alternative to reduce the transportation cost for industrial development including tourism. The State has 345 kms of rail route, out of which 283.76 kms constitute as broad gauge and 61.15 kms as small gauge. Some of the main railway stations are Dehradun, Haridwar, Roorkee, Kotdwar, Kashipur, Udham Singh Nagar, Haldwani, Ramnagar and Kathgodam. Efforts are on to start monorails on the inter-city linkage routes at Dehradun, Haridwar and Rishikesh.

Air connectivity

The State is strengthening its civil aviation infrastructure. Currently, there are two operating domestic airports one at Jolly Grant in Dehradun and the other at Pant Nagar in Uddham Singh Nagar, which is well connected with the national capital. To facilitate operations for international flights up gradation work is under way at Jolly Grant airport. Additionally, the State Government is also maintaining the airstrips located at Naini Saini (Pithoragarah), Guacher (Chamoli) and Chinyalisaur (Uttarkashi). In this regard, a budget of US\$ 230,000 (Rs.10,580,000)⁹ has been allocated by the Government for the construction of at least one helipad in each District.

Urban Infrastructure

Urban infrastructure development is an integral part of economic growth and holds great potential for creating jobs and wealth. Growing urbanization brings a host of problems like increasing pressure on basic infrastructure like water supply and sanitation, drainage and solid waste management. With growing urbanization and population, the towns and cities of Uttarakhand are affected by the above problems. Therefore, the focus of the State Government is to develop the infrastructure in a focused manner. The total outlay for urban infrastructure has increased from 412 Crore in 2007-2008 to 495.7 Crore in 2010-2011¹⁰. Under the Jawaharlal Nehru National Urban Renewal Mission ('JNNURM'), 14 new projects valuing US\$ 91¹¹ million have been sanctioned for Dehradun, Nainital, and Haridwar. Efforts are also being made to ensure availability of safe drinking water. The State Government has allocated a budget of Rs. 521.97 Crore in the budget 2011-12 for availability of safe and clean drinking water. Other projects include various housing projects including a 275 acre infrastructure development project in Haridwar.

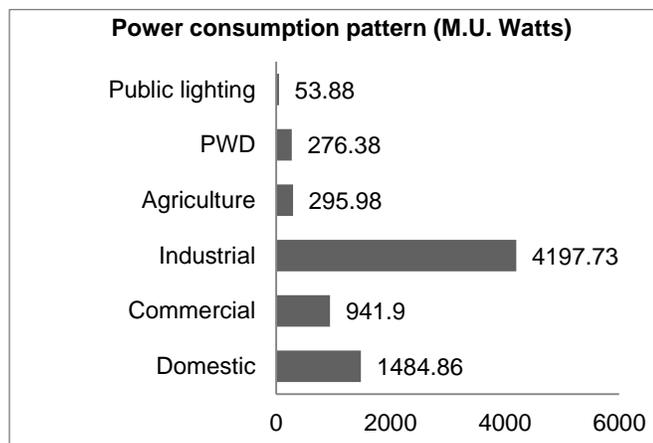
⁹ http://www.ibef.org/download/uttarakhand_14oct_08.pdf. accessed on 20 January 2013

¹⁰ http://urbanindia.nic.in/programme/lsg/Report_FUInfra_12plan.pdf. accessed on 20 January 2013

¹¹ www.ibef.org/download/Uttarakhand-260912.pdf. accessed on 20 January 2013

Power

Uttarakhand has plenty of water resources and is doing extremely well in generation of hydroelectric power in the State. As of March 2012, the State had a power generation installed capacity of 2,526.94 MW which consisted of 1,422.97 MW under State utilities, 688.92 MW under centre utilities and 415.05 MW¹² under private sector. Uttarakhand is being developed as an 'Energy State' to tap its huge Hydro Electric Power potential of 25,450 MW¹³. The State is also supporting the development of solar energy and bio-gas plants. A State level energy park has also been established in Dehradun. Most of the power is consumed by the industries (4,197.73 M.U.Watts) followed by domestic (1,484.86 M.U.Watts) and commercial consumers (941.9 M.U. Watts). However, the total consumption of electricity in the hill Districts is low and it is mainly the four Districts in the plains (Dehradun, Haridwar, Uddham Singh Nagar and Nainital), where electricity consumption is maximum. The hill District of Pauri Garhwal has only 20 percent of its villages electrified by Uttarakhand Power Corporation Ltd, and 10.5 percent by Kuteer Jyoti connections. Tehri Garhwal and Almora have 7-9 percent and 13 percent respectively of villages electrified¹⁴. This shows the poor state of electrification in the hill Districts of Uttarakhand.



Source: State Statistical Handbook 2010--11

Telecom connectivity

Uttarakhand has a well-developed wired and wireless communication network. Currently, the State has 2.1 million wired subscribers and 125.4 million wireless subscribers¹⁵ and there are 481 telephone exchanges and 2 telegraph offices. Major projects under Information Technology Development Agency ('ITDA') are Common Service Centers, National e-Governance Plan ('NeGP'), Capacity Building Project and development of State Data Center.

2.4.2 Industrial infrastructure

The Government of Uttarakhand has framed two industrial policies since its formation, Industrial Policy of the State in 2003 and the Integrated Industrial Development Policy in 2008. The policies were formulated to identify opportunities and utilize the resources in partnership with private players for overall promotion and development of industry in the State. Over a period of time, the State has transformed from an

¹² www.ibef.org/download/Uttarakhand-260912.pdf. accessed on 20 January 2013

¹³ http://knowindia.gov.in/knowindia/state_uts.php?id=27. Accessed on 21 January 2013

¹⁴ *Development Strategy for the Hill Districts of Uttarakhand, working Paper No 217, 2008, http://www.icrier.org/pdf/Working_Paper_217.pdf*, accessed on 22 January 2013

¹⁵ *Telecom Regulatory Authority of India, Department of Telecommunication, Annual Report 2011-12. Ministry of Communication and Information Technology, Uttarakhand at a glance, 2011-12*

agrarian State into a hub of industrial activity. The State has successfully developed three Integrated Industrial Estates ('IIEs') at Haridwar, Pant Nagar and Sitarganj with a Pharma city at Selequi, an IT Park at Sahastradhara in Dehradun and a Growth Centre at Siggadi in Kotdwar¹⁶.

State Infrastructure and Industrial Development Corporation of Uttarakhand Ltd ('SIDCUL') was incorporated in the year 2002 to promote industrial development in the State. It provides financial assistance to industries in the form of debt, equity, venture capital and Joint Venture. SIDCUL facilitates the management and implementation of the projects and acts as a single-window system to expedite project clearance. Some of the key financial incentives provided by the SIDCUL are as follows¹⁷:

- ▶ 100 percent Income-tax exemption for first 5 years and 30 percent for next 5 years for the companies and 25 percent for others which comes in production by 31st March 2012;
- ▶ Capital investment subsidy @15 percent with maximum of Rs. 30 Lakhs (Rs. 3 million) which companies comes in production by 31st March 2013;
- ▶ Exemption from entry tax on Plant & Machinery for setting up industry or undertaking substantial expansion and modernization;
- ▶ 100 percent central excise exemption for ten years on items other than those mentioned in the negative list in the concessional industrial package announced by the Central Government.

2.4.3 Social infrastructure

Education

As per census 2011 (provisional data) the literacy rate of Uttarakhand stands at 79.60 percent which is higher than the national average of 74 percent¹⁸. Uttarakhand is ranked 12th in the literacy rate in the country and is better than the developed States such as Punjab and Gujarat¹⁹. Uttarakhand is well known for its boarding schools and is home to a number of technical education institutes. There are 107 colleges, 13 Universities, 3 Deemed Universities and the reputed Indian Institute of Technology in Roorkee. Other important institutes of higher learning are GB Pant Engineering College, Pauri and Kumaon Engineering College, Forest Research Institute, Birla Institute of Applied Science, and Nainital College of Engineering.

The existing education infrastructure in the State has been summarized in the Table 8 below:

Table 8: Education Infrastructure (Number of Institutes)

Educational infrastructure details (2010-2011)	
Primary schools	15,746

¹⁶ PHD Research Bureau, www.phdcci.in/admin/userfiles/file/Research-Bureau/Uttarakhand.pdf, accessed on 14 January 2013

¹⁷ <http://www.sidcul.com/Industrialpolicies/Fiscal.aspx>. accessed 20 January 2013

¹⁸ PHD Research Bureau, www.phdcci.in/admin/userfiles/file/Research-Bureau/Uttarakhand.pdf, accessed on 14 January 2013

¹⁹ PHD Research Bureau, www.phdcci.in/admin/userfiles/file/Research-Bureau/Uttarakhand.pdf, accessed on 14 January 2013

Secondary schools	4,379
Senior Secondary schools	2,740
Colleges	107
Universities	13
Deemed Universities	3
Industrial Training Institutes	115
Polytechnics	40
Indian Institute of Technology	1

Source: Directorate of Economics and Statistics, Uttarakhand

Primary and Upper Primary Education

As can be seen from the Table 9 below, enrolment percentages in Government Management School is better than the Private Management School. Girl's enrolment percentage in Primary School is low in comparison to Upper Primary School level.

Table 9: Enrolments in Primary and Upper Primary School

Enrolment	Primary	Upper Primary
% Enrolment in Government Management Schools	66.85	60.92
% Enrolment in Private Management Schools	30.56	37.07
% Girls Enrolment	9.86	48.66

Source: Flash Statistics, 2011-2012

Further analysis of the institutions which students can access and their intake capacity is given below:

Table 10: Student's enrollment in Polytechnic and ITIs

District	Total Institutes		Enrolment	
	Polytechnics - Technical teaching institutes	Industrial Training Institutes (ITI) students	Polytechnics - Technical teaching institutes	Industrial Training Institutes (ITI) students
Uttarkashi	1	6	483	207
Chamoli	2	8	170	353
Rudrprayag	2	4	48	156
Tehri Garwal	1	12	248	449

Dehradun	5	8	947	1043
Pauri Garhwal	7	17	1526	650
Pithoragarh	4	8	192	396
Champawat	1	5	185	304
Almora	6	16	542	704
Bageshwar	2	4	153	66
Nainital	3	10	1118	743
Udham Singh Nagar	3	10	1784	747
Haridwar	1	7	334	342
Total	38	115	7730	6160

Source: District: At a Glance of respective Districts of Garhwal Division/ Sankhyikiya Patrika: Kumaun Mandal.

Some of the existing trades offered in the Polytechnics are Chemical Engineering, Chemical Technology (rubber, plastic, paint), Civil Engineering, Computer Science, Electrical Engineering, Electronics Engineering, Electronics and Communication Engineering, Information Technology, Interior Design and Decoration, Mechanical Engineering, Agriculture Engineering, Modern office management and secretarial, Pharmacy and Computer Application.

There are 115 ITI's of which 36 are under Public Private Partnership. Some of the existing trades offered in these institutes are on Fitter, Turner, Machinist, Electronic, Motor Mechanic, Plumber, Wireman, Radio & TV, Data Entry Operator, Cutting & Sewing, Horticulture, Craftsmen Food Production, Weaving of Woolen Fabric, and Steno Hindi.

Health

The significance of investing in health to support economic development and reduce poverty has been recognized by the World Health Organization's Commission on Macroeconomic and Health ('CMH') in the Indian Health Report. As of March 2011, the State²⁰ had 275 Primary Health Centers, 55 Community Health Centers, 12 District Level Hospital, and 8193 beds in Government hospitals. Morbidity and mortality rates are important indicators of health status and Uttarakhand has performed reasonably well on these health indicators in comparison to the rest of the States. The Infant Mortality Rate is 38 per 1,000 as compared to 50 the national average. The birth rate is 19.3 per 1,000 and death rate is 7.3 per 1,000 people. However, Uttarakhand needs to improve the per capita expenditure on health since the per capita expenditure on health within the State is almost two-third of the nation average 1,201²¹.

²⁰ Directorate of Economics and Statistics, Government of Uttarakhand

²¹ Annual report to people on health September 2010 & PHD Research Bureau – Uttarakhand State Profile

Table 11: Performance against Health indicators

Health indicators (2010)	Uttarakhand	All India Average
Birth rate (per '000 person)	19.3	22.5
Death rate (per '000 person)	6.3	7.3
Infant mortality rate (per '000 live births)	38	50

Source: Directorate of Economics and Statistics, Uttarakhand

2.5 Labor market overview and key Government policies

As per a recent estimate²² the State currently has around 215 large scale industries and around 39,160 small and medium industries and collectively they employ around 254,000 people. The composition²³ of labor force is a reflection of the composition of GSDP. The labor force participation for the State was 47 percent in 2010-11 as compared to labor participation rate of 53 percent at the all India level indicating increasing level of unemployment in Uttarakhand. Share of employment by broad industry group has been provided in the Table 12 below:

Table 12: Share of employment by broad industry group (2010-2011)

Industry group	Uttarakhand (%)	All India (%)
Agriculture & forestry	33.5	52.2
Mining & quarrying	0.3	0.7
Manufacturing	11.6	10.6
Electricity	0.7	0.4
Construction	20.9	8.7
Trade	10.2	7.7
Transport & Storage	2.7	3.5
Financing & Insurance	0.7	1
Community services	13.8	8.4
Others	5.6	6.8

Source: Labor Bureau, Government of India, 2010-2011.

²² Uttarakhand Annual Plan 2011-2012 (Meeting between the Honorable Deputy Chairman, Planning Commission and the Honorable Chief Minister of Uttarakhand)

²³ Economic and Financial Developments in Uttarakhand, By Deepak Mohanty

<http://rbidocs.rbi.org.in/rdocs/Speeches/PDFs/SGBPU310812.pdf>

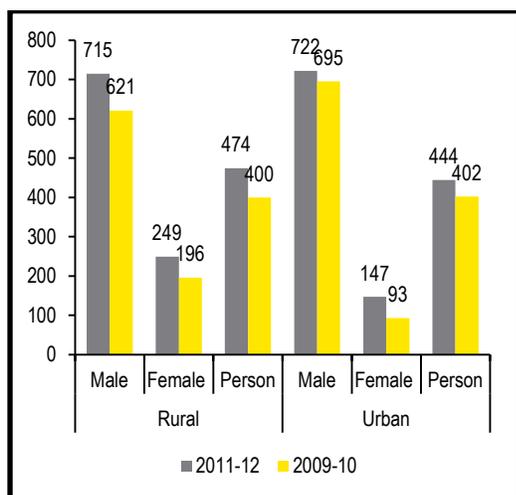
As mentioned earlier, despite agriculture being a predominant occupation of the people in the State, the share of secondary and tertiary sectors in the GSDP was 31 percent and 53 percent. More than half of the GSDP comes from the tertiary sector especially the tourism and hospitality sectors.

Table 13 : Percentage of workers engaged in secondary and tertiary sectors²⁴

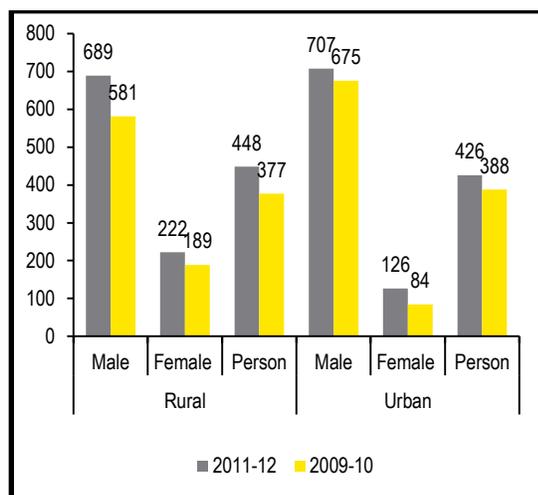
Hill District	Plain Districts
Rudra Prayag – 27%	Dehradun – 78%
Bageshwar – 24%	Haridwar – 71%
Uttarkashi – 24%	Udam Singh Nagar – 66%
Almora – 27%	Nainital 58%

Labor Market Overview

Labor market for the State of Uttarakhand is based on the indicators such as labor force participation, worker population ratio, unemployment rate and proportion unemployed (per 1000 for person’s age 15 years and above). The chart below summarizes the existing labor market in Uttarakhand:²⁵



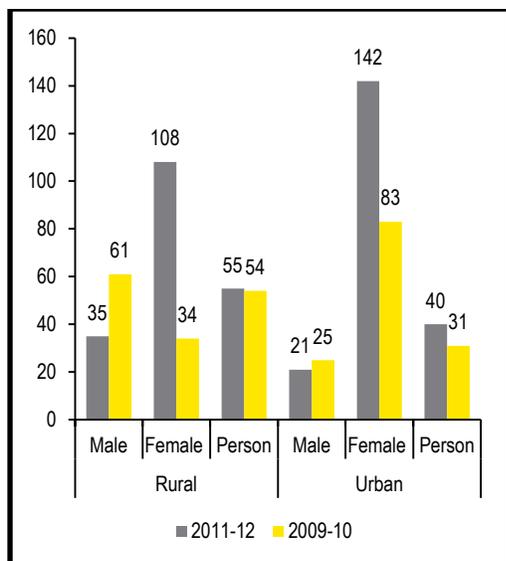
Labor force participation rate (per 1000) for persons age 15 years and above



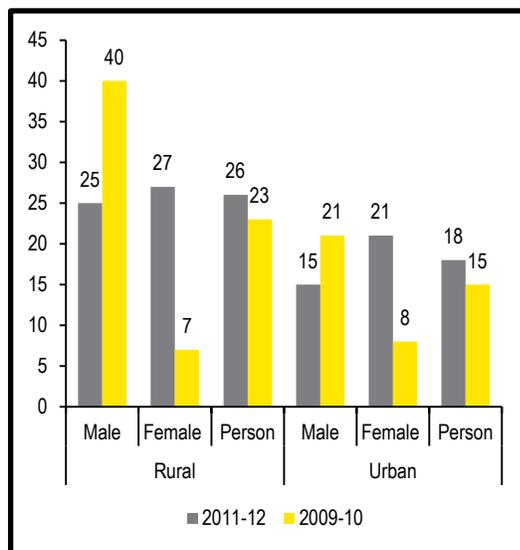
Worker population ratio (per 1000) for persons age 15 years and above

²⁴ Uttarakhand Annual Plan 2011-2012 (Meeting between the Honorable Deputy Chairman, Planning Commission and the Honorable Chief Minister of Uttarakhand)

²⁵ Report on Employment and Unemployment Survey 2009-10 & 2011-12. The data points used are from “Principal Status Report” as mentioned in the survey report



Unemployment rate (per 1000) for persons age 15 years and above



Proportion unemployed (per 1000) for persons age 15 years and above

Key Highlights

- ▶ **Labor force participation** has increased in both rural and urban areas (from 400 to 474 and 402 to 444 respectively), with male and female participation both registering a rise over 2009-10. Even though the labor force participation has increased from 2009-10, it is still below the national level average of 548 and 472 for rural and urban areas respectively. The labor force participation rates for both men and women in Uttarakhand, are also less than the national average.
- ▶ **Worker population ratio** has increased in both rural and urban areas (from 377 to 488 and 388 to 425 respectively), with male and female participation both registering a rise over 2009-10. Even though the worker population ratio has increased from 2009-10, it is still below the national level average of 529 and 449 for rural and urban areas respectively. The participation rates for both men and women in Uttarakhand are also less than the national averages for men and women.
- ▶ **Unemployment rate** for females has increased across rural and urban areas (from 34 to 108 and 83 to 142 respectively) while unemployment rate has decreased for men in both rural and urban areas when compared to 2009-10. Rural unemployment rates of Uttarakhand fare poorly when compared to the national average with women lagging behind by almost double. On the other hand, urban male and person unemployment rates are better than the national averages of 34 and 50 respectively.
- ▶ **Proportion unemployed** for females has increased across rural and urban areas (from 7 to 27 and 8 to 21 respectively) and has decreased for men in both rural and urban areas when compared to 2009-10. Proportion unemployed in rural Uttarakhand is more than the national average while proportion unemployed in urban Uttarakhand is better than the national average for male, female and persons.

Key Government Policies

The Government of Uttarakhand has framed numerous policies, so as to create a congenial environment for attracting investments into the State. The policy covers various incentives and schemes for the investors. It broadly aims to generate employment opportunities and bring improvement in the overall quality of life of the people and provide them with essential infrastructural facilities. All these unfold a road map for bolstering the industrial climate of the State and facilitate the inflow of capital into the economy;

the major being the State Industrial Policy, Information Technology Policy and Biotechnology Policy. A brief snapshot of the same has been provided below:

State Industrial Policy 2003 and 2008

The State Industrial Policy of 2003 aimed to provide a comprehensive investor friendly framework to ensure rapid and sustainable industrial development in Uttarakhand. The thrust of the policy was to generate additional employment opportunities and to increase the State Domestic Product. The policy aims to promote Public Private Partnership in development and management of infrastructure like industrial estates, special economic zones, theme parks, tourist destinations, airports and power projects. Additionally, the policy focused on promoting small scale industries, cottage, khadi and village industries, handicrafts and the silk and handloom sector. It emphasized technological up gradation, and modernization of common facilities, improvement in product design and development of marketing support to make the products globally competitive and remunerative. Some of highlights of the State Industrial Policy of 2003 are²⁶ :

- ▶ New small-scale industrial units will be provided interest relief on loans at the rate of 3 percent annual relief;
- ▶ The same applies to existing small scale industries which have expanded at least 25 percent;
- ▶ Small scale industries being opened in regions 3,000 feet above sea level and higher and thrust industries will be given the advantage of a 5percent waiver on the annual interest on loans;
- ▶ Sick units will be supported by waiving 3 percent of the annual interest on loans with the objective to revive these units;
- ▶ Ropeways, amusement parks and multiplexes will be exempted from entertainment tax for 3 to 5 years;
- ▶ Tourism elevated to the status of an industry;
- ▶ Support for patent registration, ISO certification, and pollution control equipment;
- ▶ Small scale industries will get priority in the State purchase for buying and pricing, while large and medium industries will get purchase precedence.

Subsequently, the State launched the Integrated Industrial Development Policy in 2008. The policy aimed to speed up development in remote and hilly Districts of Uttarakhand. The policy focuses on entrepreneurial development through market linkage and provides financial support to upcoming entrepreneurs.

Tourism Policy

Uttarakhand has immense tourism potential with its unique natural offerings, picturesque locations, snowcapped mountains, lush green valleys and cool climate with hospitable people. However, its potential has not been tapped sufficiently. There is a huge infrastructural gap and lack of well-coordinated efforts between public and private players in marketing Uttarakhand as a tourist hot spot. To address the prevailing problems of inadequate infrastructure, investment and limited public private sector participation, the tourism policy of Uttarakhand was brought out in 2001. The following were the objectives of the policy:

- ▶ Place Uttarakhand on the tourism map of the world as one of the leading tourist destinations and to make Uttarakhand synonymous with tourism;
- ▶ Develop manifold tourism related resources of the State in an eco-friendly manner, with the active participation of the private sector and the local host communities;

²⁶ www.ibef.org/download%5CUttarakhand_14Oct_08.pdf

- ▶ Develop tourism as a major source of employment and income/revenue generation and as a pivot of the economic and social development in the State.

The Uttarakhand Tourism Development Master Plan 2007-2022 identifies a number of areas that need to be focused upon to develop the potential of the tourism sector in the State. According to the plan infrastructure development, connectivity, sanitation, local participation, creating awareness through effective marketing, simplification of institutional framework and participation of the private sector are important areas to be strengthened in order to develop a strong eco system for the sector. There is now an urgency to do so after the recent natural disaster in the state.

Information Technology Policy 2006

Information Technology ('IT') and IT enabled services have been accorded industry status by the State Government of Uttarakhand. The State meets the entire prerequisite for developing as a preferred destination for IT & ITES in Dehradun. Land use, conversion charges are being softened for the promotion of IT in the State. Various exemptions including stamp duty concession are being provided to IT industry established in the IT parks and industrial estates. The IT policy of the State aims to attain the following objective:

- ▶ Upgrade and develop manpower skills required for the Information Technology industry and to accelerate the use of Information Technology in schools, colleges and other educational institutions with a view to providing skills and knowledge to the youth so as to render them fit for employment in this industry.
- ▶ Encourage the use of IT in Government not only as a tool for management and decision support systems, but also re-engineer the processes to provide a more efficient, transparent accountable and responsive Government to its citizens.
- ▶ Upgrade the quality of life of citizens of the State by facilitating easy access to consumer applications of Information Technology.
- ▶ Encourage private sector initiatives for the development of world class IT infrastructure adequate for the needs of citizens, industry and Government.

Agriculture

Agriculture is one of the key sectors of Uttarakhand's economy and contributes 15.50 percent²⁷ to the GSDP (FY2009) of the State. The natural habitat is ideal for agriculture and it employs three-fourth²⁸ of the State's population. While the Government is focused on increasing the industrial base of the District, there is continuous effort to promote agriculture and allied sectors in the State which has grown 1.98 percent from 2001 to 2009. The Government has set up four Agri Export Zones in the State under the Central Governments AEZ Schemes, to boost agro food processing for litchi, horticulture, herbs, medicinal plants and basmati rice. Additionally the Ministry of Food Processing Industry ('MoFPI') provides higher incentives to the agro processing unit since the State comes in the category of difficult areas for food processing.

In 2011 the Government approved the APMC Act that allowed private players to enter the agriculture market and also set up the private mandis. In the same year the State Government also put in place policies to promote special agriculture zones ('SAZ'), to set up micro and small enterprises in the agriculture sector, while also giving units special incentives like availability of 24-hour power supply and

²⁷ Directorate of Economics and Statistics, Uttarakhand .

²⁸ Ministry of Agriculture, Directorate of Economics and Statistics, Uttarakhand .

free soil tests, special collection and processing centres for the benefit of farmers. Given that landholding in the State is very small, the Government is encouraging farmers to consolidate land by waiving off stamp duty for farmers wanting to purchase lands adjacent to their existing fields. State Government is also providing subsidy for projects under various schemes of Agricultural and Processed Food Products Export Development Authority ('APEDA'), National Horticulture Board ('NHB'), Ministry of Food Processing Industry ('MoFPI') and the Natural Medicinal Plant Board ('NMPB').

Biotechnology Policy

The policy was announced with a vision to deploy, use, exploit and leverage the biotechnology as a useful tool for translating bio-wealth into economic wealth on one hand and preserving the same on the other. To attain this overall goal, the objectives of the policy are ²⁹ :-

- ▶ To map the rich Biodiversity of the State, including land races and lesser known crops and create exhaustive/extensive data base to enable ex situ & in situ conservation, scientific management and prevent reckless exploitation.
- ▶ To intensify the R & D work in potential areas of Biotechnology and upgrade the infrastructure of R & D institutions to generate quality research and to foster industry linkages.
- ▶ To promote the human resource development in this field through up gradation of the existing as well as and setting up of new educational institutions.
- ▶ In the realm of Plant Biotechnology, leverage on the existing knowledge base to promote research, which meets the needs of Indian farmers becoming competitive and enable them to take advantage of what are today closely held technologies.
- ▶ To promote medicinal and aromatic plants/herbs of which abundance is found in Uttaranchal to enable their natural growth as well as scientific promotion of the pharmaceuticals, nutraceuticals and such other industries. To encourage the entire spectrum from low-end industries which are capable of going to the farmer's field to the highest end?
- ▶ To spread awareness about the investment opportunities, in Biotechnology and allied sectors, in the State of Uttaranchal.
- ▶ To this end proactively promote setting up of Biotechnology industries in the State whether in an Industrial Estate mode or dispersed in smaller pockets throughout the State, and to outline a set of incentives and concessions for the BT industry to attract investment.
- ▶ To provide a suitable institutional framework this is a mix of the best available talents, with proactive Governmental support and facilitation.

2.6 Other Skill Development Programs

India is considered as one of the few countries, where the working age population will be far in excess of those dependent on them and this will continue for at least three decades till 2040. ³⁰ In recognition of this need, apart from the State Government, the Central Government and concerned ministries have taken several steps for skilling the manpower through different programs, which are presented in the Table 14 below:

²⁹ http://business.gov.in/investment_incentives/investment_policies_uk.php. Accessed on February 07 2013.

³⁰ <http://www.skilldevelopment.gov.in/skill-landscape-in-india>

Table 14: Government promoted skill development schemes

Ministry/Department	Schemes/Programs/Institutions	Key Points
Ministry of Agriculture	Rastriya Krishi Vikas Yojana, Big Dairy Scheme for Dairy Entrepreneurs, Swarn Jayanti Gram Swarajgar Yojana	Focuses on training farmers, encourages dairy entrepreneurs and provides them with initial financial assistance at concessional interest rates
Ministry of Labour & Employment	Rural Employment Generation Programme (REGP) Sampoorna Grameen Rozgar Yojana (SGRY) Training of Rural Youth for Self-Employment (TRYSEM)	Skills are made bankable and individuals are enabled to convert their knowledge and skills, through Testing and Certification, into higher diplomas and degrees and learner can pay the skill provider directly.
Ministry of Textiles	Integrated Skill Development Scheme (ISDS) implemented by Lakshmi Cotsyn Limited	Caters to skilled manpower needs of Textile and related segments through skill development training programmes. Envisages participation of training institutes associated with the Ministry and the private sector as implementing agencies.
MMSME – Development Institute, Haldwani	Skill development initiatives of DC-MSME implemented through MSME Development Institutes	Engaged in promotion & development of Micro, Small and Medium Enterprises in the State of Uttarakhand, about 2321 persons were trained in 2011-12
Ministry of Rural Development	Swarnjayanti Gram Swarozgar Yojana (SGSY)	Focus is on SC/ST, women and disabled poor
Ministry of Tourism-Development	Uttarakhand Tourism Development Master Plan	Provision of a strategic spatial planning framework for improved tourism

2.7 Migration in Uttarakhand

The study team had proposed to analyse the available data in the State to identify pockets of migration in the State and the destination where a majority of individuals migrate. The team did not find detailed information with respect to migration in the State, therefore, a review of available literature was done to develop a perspective on migration in the State. NSSO Study on migration undertaken in 2007-08 shows some trends on migration across all States. The findings reveal the following:

- ▶ Migration is higher among those with higher literacy levels than those with less or no literacy.
- ▶ Men migrate largely to seek employment opportunities whereas most women migrate when they get

married.

- ▶ While migrants from rural areas engage in self-employment, the urban migrants engage in salaried jobs.
- ▶ The proportion of short term migration in rural areas was more than those in urban areas. Migrants from urban areas migrate for longer duration or permanently whereas migrants from rural areas return to their native place after few years.
- ▶ Those who migrate do contribute to the State economy because it was found that the families spend more money on household expenditure, well invest more and repay their debts wherever required.

The findings pertaining to Uttarakhand provide evidence that about greater migration in the State than the national average. At the time of study 28 out of 1,000 households had migrated during the last 365 days as compared to a corresponding national figure which was found to be 19. There is a significant migration from rural to rural areas 595 per 1,000 than rural to urban which were 144 per 1,000. The most common reason for migration is search for employment followed by movement of parent or earning family member. While there is significant out migration, there is in migration too, thus making the net migration rate as 38 per 1,000.

A study of Migration and Workforce Participation in the Himalayan States by R. Lusome and R.B.Bhagat shows that with the exception of Jammu & Kashmir, the proportion of migrants is higher in the three Himalayan States i.e. Himachal Pradesh, Sikkim and Uttarakhand (Table 15).

Table 15: Percentage of migrants to total population 2001

States/country	Total Population (in millions)	Total Migrants (in millions)	% of migrants to total population
India	1,028.6	314.5	30.6
Jammu & Kashmir	10.1	1.8	17.8
Himachal Pradesh	6.1	2.2	36.1
Sikkim	0.54	0.19	34.6
Uttarakhand	8.5	3.1	36.2

While within the State a higher proportion of individuals migrate within the District, when compared to the national figures (Table 16), there is significantly higher migration taking place at the interstate level than the national average.

Table 16: Percentage distribution of the streams of migration 0-9 years 2001

Streams of Migration	India	Uttarakhand
Intra-District	55.0	44.7
Inter-District	27.1	19.3
Interstate	17.1	33.3
International	0.8	2.7

There are a very high proportion of males migrating (Table 17) in search of better employment opportunities in comparison to women. Since agriculture is the main occupation, women are left behind to take care of the fields, which indicate that the gender aspect for the primary sector must be taken into account.

Table 17: Percentage distribution of reasons for migration by sex for duration 0-9 years 2001

Particulars	Work	Education	Marriage	Family	Others
Total	19.9	4.3	35.4	31.5	8.9
Male	45.7	7.9	0.6	32.3	13.5
Female	3.2	2.0	58.0	30.9	5.9

Work: Migrants giving work/employment and business as the reason for migration

Family: Migrants moved after birth and moved with household as the reason

Another study on 'Employment, migration and livelihoods in the Hill Economy of Uttaranchal' by Rajendra P. Mamgain, Jawaharlal Nehru University, states that the percentage of migrant population is more among upper caste, lower income groups and interior areas. It is less among lower caste groups and agriculturally developed households. Individuals from lower income groups migrate who have low asset base migrate for their survival whereas those from better income households migrate for better opportunities in their career. Large percentage of migrants is employed as cooks, wash boys, waiters, peons, domestic servants, messengers, drivers and helpers. Most migrants from Uttarakhand are better educated, have salaried jobs unlike out migrants from some other States like Uttar Pradesh and Bihar. Largely migration in Uttarakhand is not 'distress induced'. About three fourth people migrate to regions outside mountainous regions of the State. Those migrating to other State migrate to Delhi, Mumbai, Chandigarh and Ambala.

Despite efforts being undertaken by the Government of Uttarakhand to facilitate the development of hilly Districts, the migration rate has increased. As per 2011 population Census the problem of migration has remained unchanged. There are 17,741 uninhabited villages in the State which are either deserted or are on the verge of being abandoned completely by the inhabitants.

Although the Government has managed to attract some industries in Terai region i.e. Dehradun, Haridwar, and Udham Singh Nagar, the hill Districts i.e. Pithoragarh, Chamoli, Uttarkashi, Tehri Garhwal, Pauri, Almora, and Bageshwar remain far away from industrial development. The migration rate of male and female population from the rural as well as urban areas is constantly rising. As per data available on 'Visthapit Janasankhya Sarvekshan' for 2011-12 with Directorate of Economic and Census, Uttarakhand, the hilly Districts of Pauri Garhwal, Bageshwar, Chamoli, and Tehri Garhwal have the highest migration rate from rural and urban areas. Due to limited opportunities for employment coupled with geographical and climatic hardship, skill based training seems to be a viable option to generate employment and develop the local economy.

Table 18: District wise number of Migrants per 1,000 populations

S.No.	District	Area						Total	Share of migration
		Rural			Urban				
		Male	Female	Total	Male	Female	Total		

S.No.	District	Area						Total	Share of migration
		Rural			Urban				
		Male	Female	Total	Male	Female	Total		
1	Uttarakashi	39.43	34.15	73.58	7.54	7.68	15.22	88.80	8.9
2	Chamoli	44.33	36.66	80.99	4.23	4.76	8.99	89.99	9.0
3	Rudrprayag	38.51	32.42	70.94	4.10	1.85	5.96	76.89	7.7
4	Tehari Garwal	51.61	29.25	80.86	5.69	2.65	8.34	89.20	8.9
5	Dehradun	30.97	34.54	65.51	4.76	8.74	13.50	79.01	7.9
6	Pouri Garhwal	55.58	46.45	102.04	5.82	7.41	13.23	115.27	11.5
7	Pithoragarh	37.59	23.42	61.01	5.16	3.31	8.47	69.48	6.9
8	Champawat	41.95	29.51	71.47	3.31	3.31	6.62	78.08	7.8
9	Almora	46.58	25.01	71.60	3.71	7.28	10.98	82.58	8.3
10	Bageshwar	53.47	28.45	81.92	6.75	7.81	14.56	96.48	9.6
11	Nainital	22.76	19.72	42.48	5.96	5.43	11.38	53.86	5.4
12	Udham Singh Nagar	5.03	22.63	27.66	0.79	5.82	6.62	34.28	3.4
13	Haridwar	6.88	26.73	33.62	2.91	9.53	12.44	46.06	4.6
Total		474.72	388.96	863.68	60.75	75.57	136.32	1000.00	

Source: Visthapit Patrika 2012

From the skill perspective there could be two strategies to deal with the issue of migration, which is a matter of concern for the State. First, to give them skills that helps to boost the local rural economy. At present it is highly dependent on the plains and other States for its day to day requirements such as bakery, packaging material, toiletries. If there are any adverse climatic conditions or disruptions in road transportation, their daily supplies get affected. Production of these items locally will not only provide opportunities for self-employment, but propel the local economy towards greater self-reliance. The other strategy could be to provide them skills which will provide them better job opportunities in the destination of migration. The team was not able to access specific data from the State to provide details about migrants. However, through informal interactions, it was shared that some of the favorite destinations for the migrant youth are Gurgaon and Allahabad. For instance if there is significant migration taking place to Gurgaon, then it will be helpful for the youth to learning skills in the construction and IT sectors so that their prospects of getting better paid jobs are enhanced. The State needs to maintain a database of information to provide a profile of migrants, pockets from where they migrate, their education and skill levels and places where they migrate. This will help in more effective planning to ensure that whatever

migration takes place it is to seek better livelihood and employment opportunities and not out of distress.

Box : NSSO 64th Round Report (2007-8) on 'Migration in India'

A. Household migration during last 365 days

- ▶ Proportion of households migrated to rural areas was very low.
- ▶ Migration of households was largely confined within State.
- ▶ Migration of households in both the rural and urban areas was dominated by the migration of households from rural areas.
- ▶ In both rural and urban areas, majority of the households migrated for employment related reasons.

B. Migrants

- ▶ Migration rate was found to be lowest for bottom MPCE decile class in both rural and urban areas and there is an increasing trend in rate of migration with the increase in level of living, with the migration rate attaining peak in top decile class.
- ▶ For rural male, migration rate was lowest (nearly 4 percent) among the 'not literates', and it was nearly 14 percent among those with educational level 'graduate and above'.
- ▶ For urban males also, it was lowest for among the 'not literates' (17 percent), and 38 percent for those with educational level 'graduate or above' level.
- ▶ Among the migrants in the rural areas, nearly 91 percent had migrated from the rural areas and 8 percent had migrated from the urban areas, whereas among the migrants in the urban areas, nearly 59 percent migrated from the rural areas and 40 percent from urban areas.
- ▶ The most prominent reason for female migration in both the rural and urban areas was marriage: for 91 percent of rural female migrants and 61 percent of the urban female migrants the reason was marriage.
- ▶ The reason for migration for male migrants was dominated by employment related reasons, in both rural and urban areas. Nearly 29 percent of rural male migrants and 56 percent of urban male migrants had migrated due to employment related reasons.
- ▶ For rural males, self-employment had emerged as main recourse to employment after migration. The share of self-employment in total migrants increased after migration, while the shares of regular employees and casual labors remained almost stable, in both before and after migration.
- ▶ In case of urban males, the percentage of regular wage/salaried employees has shown a quantum jump (from 18 percent before migration to 39 percent after migration), besides an increase in the share of self-employment after migration (from 17 percent to 22 percent), and casual labor as a means of employment had reduced in importance after migration (from 11 percent to 8 percent).

C. Short-term Migrants

- ▶ The rate of short-term migration (proportion of short-term migrants in the population) was 1.7 percent in the rural areas and almost negligible (much less than 1 percent) in the urban areas. Moreover, in the rural areas, the rate was nearly 3 percent for the males and less than 1 percent for females.
- ▶ In rural areas, for both males and females short-term migrants, more than half were casual workers in their usual principal activity status.

D. Out- Migrants

- ▶ Rural male out-migrants were almost equally dispersed in both the State from which they had migrated out as well as outside the State (nearly 46 percent in each of these two types of places).

E. Out-migrant Remittances

- ▶ Among the male out-migrants from the rural areas and residing abroad, nearly 82 percent had sent remittances during the last 365 days, while only 58 percent of those residing in India had sent remittances.
- ▶ Among male out-migrants from the urban areas, nearly 69 percent of those residing abroad had sent remittances compared to only 41 percent of those residing in India.
- ▶ In the rural areas, the percentage of households reporting receipt of remittance did not vary much with the

increase in MPCE.

- ▶ In urban areas, the percentage of households which received remittances from its former members during the last 365 had increased significantly with the increase in MPCE.
- ▶ Average annual household consumer expenditure was nearly Rs. 38,000 for all rural households compared to nearly Rs. 41,000 for rural households receiving remittances.
- ▶ Average annual household consumer expenditure nearly Rs. 65,000 for all urban households compared to nearly Rs. 80,000 for the urban households receiving remittances.
- ▶ Household consumer expenditure in both rural and urban areas was the prime use of the remittances. Nearly 95 percent of the households in the rural areas and 93 percent of the households in the urban areas had used remittances for household consumer expenditure purpose.

Nearly 10 percent of the households in the rural areas had used remittances for 'debt repayment' and nearly 13 percent of the households in the urban areas had used remittances for 'saving/investment'

Conclusion

In conclusion one may say that Uttarakhand has the advantage of high education levels, rich natural resources embedded in the forest cover which forms about 62 percent³¹ of the total area. While the State has a high growth rate of 8.8 percent³², the advantages of economic growth is not evenly distributed. There is a vast difference between the hilly Districts and those in the plains. There are constraints of access due to poor road connectivity and electricity shortage despite the fact that hydroelectricity is found in abundance in the State. The electricity generated is not sufficient to meet the increasing demand and also affects setting up of small and medium industries in the hilly Districts. The distance between the resources and market has not been bridged to the extent that economic growth is more evenly distributed.

The State has given several incentives to the industrial sector by giving tax exemption for 10 years. This has resulted in several industries coming up. However, it remains to be seen whether this momentum would be retained once this period comes to an end. Besides the industrial boom it is largely restricted to 3 Districts (Dehradun, Haridwar and Udham Singh Nagar). This is resulting in significant migration among its population in other Districts where secondary sector has not shown sufficient growth. The services sector has shown maximum growth and is likely to grow at a higher level than the other two sectors. Upcoming service sectors are – Construction, Retail and Transportation and Warehousing and Education for which the State needs to prepare itself.

The following Sections on the report examine the skill gaps across different Districts more closely by analyzing the existing data and perceptions of different stakeholders.

³¹ http://www.fsi.org.in/cover_2011/uttarakhand.pdf

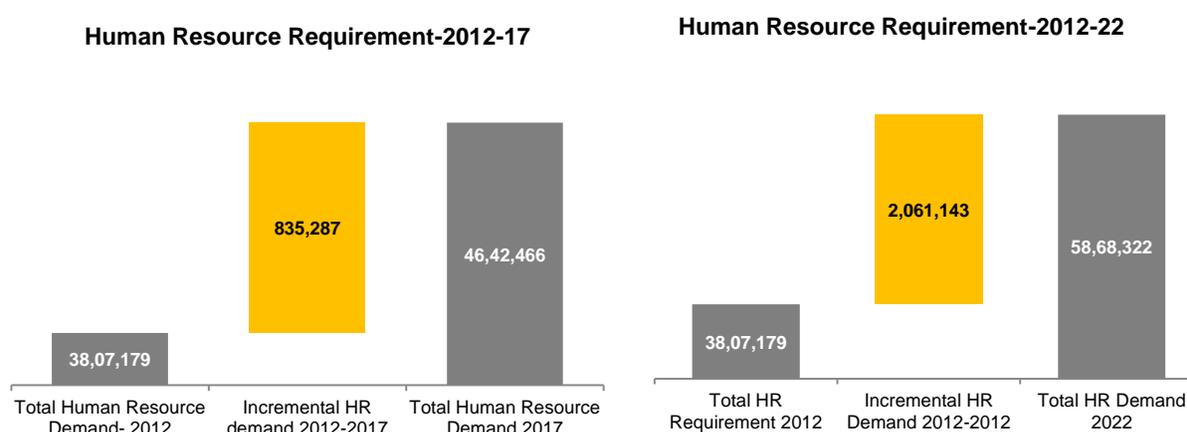
³² *Uttarakhand 12th five year plan & annual plan 2012-13*

3. Skill gap scenario for Uttarakhand

This chapter provides a detailed overview of the skill gap scenario for the State of Uttarakhand. In order to summarize the results of our analysis, three reference years- 2012, 2017 and 2022 has been used throughout the report. For estimating human resource requirements we have referred to the prominent economic sectors in the State as per the classification provided in the census 2001 and economic census 2005. These sectors have been further mapped with NSDC priority sectors. The methodology for estimating the demand, supply and skill gap has been provided below (refer Section 3.1 of the report).

3.1 Human resource requirement

Based on our estimates the State of Uttarakhand will have an incremental human resource requirement of approximately 2.06 million in next 10 years. The requirement in the year 2012 is 3.8 million which will increase to 4.64 million in 2017 and ultimately reaching to 5.89 million in 2022.



The above chart depicts the total human resource requirement as well as incremental demand for two reference period i.e. 2012 to 2017, and 2012 to 2022. Analysis shows that over a period of five years (2012-2017), the incremental human resource requirement would be 835,287. Similarly the incremental human resource requirement from 2012 to 2022 would be 2,061,143. Our model suggests that the total requirement for human resource in 2022 will be 5,868,322 (refer to table no 19 to see human resource requirement for sector and district wise from 2012-2022). A further break up of human resource requirement sector and district wise for 2017 and 2022 is provided in Annexure 3 and 4.

The table below (refer Table 19) provides sector wise break up of human resource requirement for 2012, 2017, and 2022. In the first five years, Agriculture and allied sector is projected to have the maximum number of human resource demand. In agriculture sector, 70 percent of the manpower demand in 2022 will be for minimally educated minimally skilled persons, followed by semiskilled (20 percent) and skilled (10 percent) persons. The Manufacturing sector is expected to grow to 0.44 million in 2017 and 0.69 million in 2022. Share of manufacturing sector to the total manpower requirement is expected to grow to 10 percent and 12 percent in 2017 and 2022 respectively. Similarly, the projected requirement of manpower for construction in 2017 and 2022 would be 0.27 million and 0.35 million. Majority of the demand would be for minimally skilled person (81 percent) followed by semiskilled category (16 percent), whereas the projected growth for manpower requirement in Tourism, Hospitality and Trade in 2017 would be 0.45 million (2017), and 0.69 million (2022). The projected growth of manpower in Education sector

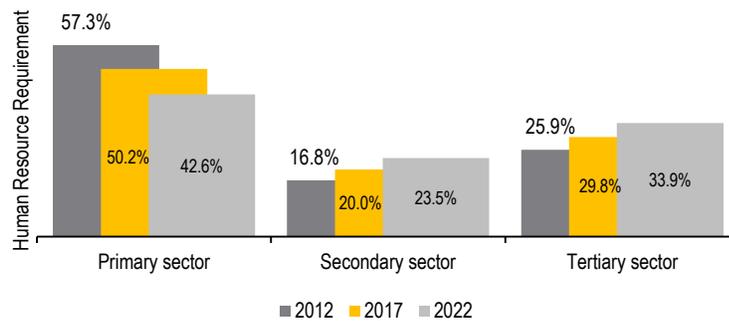
under all skill categories would be 0.46 million category in 2022.

Table 19: Sector wise break up of total human resource requirement

Human Resource Requirements (demand) by sector			
Sector	2012	2017	2022
Agriculture	2,140,711	2,280,878	2,439,839
Tourism, travel, hospitality and trade	300,642	450,462	689,444
Manufacturing	286,683	444,090	695,644
Education & Skill Development	192,803	296,652	456,437
Building, construction & Real Estate Services	213,632	275,924	356,380
Transportation, logistics, warehousing & packaging	72,582	124,788	214,989
Public administration	126,431	136,172	146,663
Food processing	72,413	117,360	191,542
Healthcare	76,978	116,814	177,710
Real estate and Banking services	72,082	88,607	108,941
Auto & Auto Components	36,348	58,675	95,539
Unorganised sector	54,333	61,370	69,317
Postal and communication	47,491	57,197	68,928
Banking, Financial Services & Insurance	44,331	51,187	59,508
Metal and Mining	39,767	47,779	57,546
Electricity, gas and Water	29,950	34,511	39,896
Total	3,807,179	4,642,466	5,868,322

Human Resource requirement in Primary, Secondary, and Tertiary sector

The Primary sector (agriculture & allied including forestry, fishery, logging, horticulture and animal husbandry and mining) will continue to lead in terms of total human resource requirement. The sector's share in total manpower demand will however decline from 57.3 percent in 2012 to



50.2 percent in 2017 and 42.6 percent in 2022. The share of secondary and tertiary sector in total manpower requirement shows an upward trend. Human resource requirement in secondary sector is expected to increase from current level of 17 percent to 20 percent in 2017 and 23.5 percent in 2022. The corresponding figures for the tertiary sectors will be 25.9 percent, 29.8 percent and 33.9 percent respectively.

Human resource requirement

Skill level wise break up of primary sector shows that the requirement of Minimally Skilled, Semi-Skilled, and Skilled manpower would be greatest in Agriculture and allied services, Manufacturing, Tourism hospitality, and retail, Construction, Education, and Transportation and Logistics sector.

Table 20: Skill level wise break up for growth sector

Sector	2017				2022			
	Minimally skilled	Semi-skilled	Skilled	Total	Minimally skilled	Semi-skilled	Skilled	Total
Agriculture	1,596,615	456,176	228,088	2,280,878	1,707,887	487,968	243,984	2,439,839
Food processing	93,888	-	23,472	117,360	153,234	-	38,308	191,542
Metal and Mining	24,606	9,317	13,856	47,779	29,636	11,222	16,688	57,546
Manufacturing	165,659	162,803	115,628	444,090	254,705	260,814	180,126	695,644
Transportation, Logistics, warehousing & packaging	23,812	10,698	-	34,511	27,528	12,368	-	39,896
Building, construction & Real Estate Services	223,498	44,148	8,278	275,924	288,668	57,021	10,691	356,380
Auto & Auto Components	18,972	25,035	14,669	58,675	30,891	40,763	23,885	95,539
Electricity, Gas and Water	86,104	38,684	-	124,788	148,342	66,646	-	214,989
Postal and communication	-	15,443	41,754	57,197	-	18,611	50,317	68,928
Banking, Financial Services & Insurance	-	13,821	37,367	51,187	-	16,067	43,441	59,508
Real estate and Banking services	71,772	14,177	2,658	88,607	88,242	17,431	3,268	108,941
Public administration	28,815	92,253	15,103	136,172	31,035	99,360	16,267	146,663
Education & Skill Development	-	-	296,652	296,652	-	-	456,437	456,437
Healthcare	-	-	116,814	116,814	-	14,217	163,493	177,710
Tourism, travel, hospitality and trade	226,743	68,269	155,450	450,462	338,764	113,630	237,050	689,444
Unorganised sector	18,411	24,548	18,411	61,370	20,795	27,727	20,795	69,317
Total	2,578,895	975,372	1,088,200	4,642,466	3,119,727	1,243,845	1,504,750	5,868,323

Agriculture and Allied Sector

Despite poor economic returns, non-remunerative nature of work and in adequate backward and forward linkages, agriculture will continue to absorb maximum human resources in the State in next 10 years (2012-22). The sector employs 2.14 million workers (56.2 percent of total human resource demand) in 2012. The incremental demand between 2012-2017 and 2012-22 will be 0.14 and 0.30 million

respectively. Total human resource required in agriculture and allied sector in 2022 is 2.44 million. The demand for manpower in agriculture and allied services such as logging, forestry, horticulture, animal husbandry and fishery is quite uniform across all hill Districts.

The proportion of manpower requirement for agriculture is comparatively lower in industrially active Districts of Haridwar, Dehradun and Uddham Singh Nagar. Almost 70 percent of the manpower demand in 2022 will be for minimally educated minimally skilled persons followed by semiskilled (20 percent) and skilled (10 percent) persons. The requirements for semiskilled and skilled persons are mostly in the field of allied services where advanced mechanical and technical skills are required for land use planning, grading, sorting, collection and storage. Uttarakhand being rich in biodiversity with ample scope for medicinal and aromatic plants, there is a requirement for technically skilled personnel as well as scientists at the highest level to undertake advanced research on species identification, enumeration and biodiversity mapping³³. Some of the areas where skill related trainings would be required are mentioned below:

Agriculture

- ▶ Most of the agriculture activities are carried out manually with traditional tools and implements. With growing demand for agricultural produce, especially processed and value added products, there is a huge requirement of skilled manpower for post-harvest mechanization and value addition.
- ▶ Moving up and down the value chain would require training in food processing, branding, packaging, and marketing. For each category there is manpower deficit and requirement of trained manpower to carry the operations. For example in production of jaggery sweets, sugarcane juice, and granular jaggery in Haridwar.

Horticulture

- ▶ Training required to farmer groups on scientific layout for orchard establishment, adoption of tree training strategies, canopy management and pest and disease management. There is shortage of skilled manpower to undertake the above activities.
- ▶ Currently there is shortage of skilled manpower that can use mechanized tools and post-harvest technology for horticulture related activities.
- ▶ Skill gap exists in terms of trained manpower that has capacities to create linkages with retailers and wholesaler for marketing fruits, vegetables and other farm produce.
- ▶ Fruits like apples, oranges, litchis and pears are grown widely in the hill Districts. Setting up food processing plant would require skilled manpower to carry its operation, however, there is shortage of skilled manpower in all hill Districts.

Organic farming

- ▶ Organic farming right from the composting techniques, bio pesticide making and package of practices training is required.
- ▶ Skill gap exists for cultivation and production of organic produce. In collaboration with Uttarakhand Organic Commodity Board, training could be provided to farmer groups that can assist in fulfilling the gap of skilled human resource.

³³ As per information published in the employment and unemployment survey 2010-11 by the labour bureau, Government of India, the share of agriculture workers is shown as significantly lower (33.5%) than the national average (52%). The difference between the figures provided through our analysis is attributable to difference in source (our base figures are derived from census 2001, while the labour bureau figures although more recent, is based on sample survey)

- ▶ Organic products have a parallel market, which if captured in a strategic manner can generate employment opportunities. Skilled workforce will be required in promoting organic farming methods and developing forward linkages for marketing of these products

Floriculture

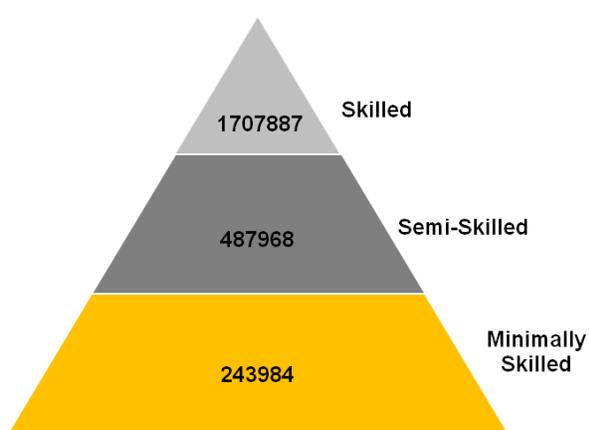
- ▶ Training required for cultivation of flowers in poly house and net houses.
- ▶ Farmers sell their flower produce to middlemen at very low rates due to lack of market knowledge. There is a scope for enhancing the marketing skills through trainings to farmers since they have limited marketing skills and market knowledge.

Cultivation of medicinal and aromatic plants

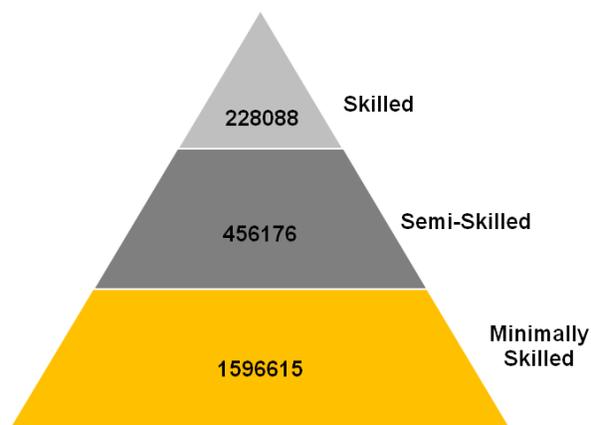
- ▶ Extraction and cultivation of medicinal plants requires specialized skills. Currently there is shortage of skilled manpower that have knowledge and awareness of its use and application.
- ▶ The Sigaddi growth centre in Pauri Garhwal District has 4 herbs processing units, two floriculture units and three pharma companies. Expansion of these industries will create demand for skilled person. Trained manpower will be required for bulb growing, nursery operation, chemical protection of plants, fruits and herbs, post-harvest storage and handling and use of preservatives.

Animal Husbandry

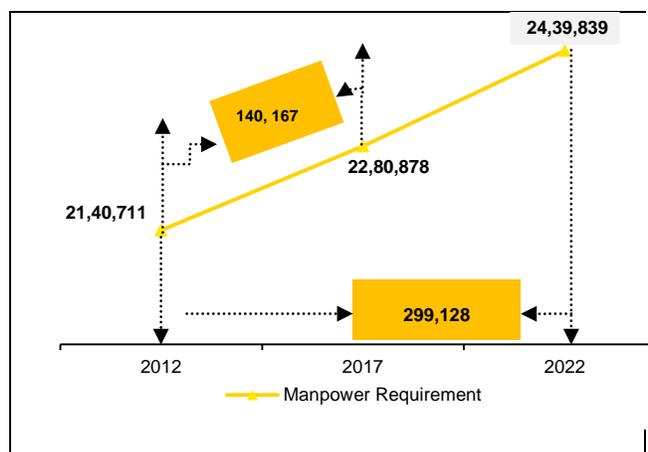
- ▶ There is shortage of trained qualified youth in the veterinary services such as Para-vets. Trained manpower would be required that have knowledge on animal reproduction, disease control and value addition in dairy products.
- ▶ Sheep rearers use traditional techniques of extracting raw wool which impedes the quality and quantity of the wool. There is a skill gap needed to be fulfilled by providing training on the modern techniques of wool shearing and processing.



Skill Pyramid for Agriculture in 2017



Skill Pyramid for Agriculture in 2022



While our forecasting model suggests a relatively high work force requirement in agriculture and allied sector, it is important to understand that the numbers may not necessarily imply productive engagement/employment of the work force. The development of the hills Districts are primarily linked with agriculture development since the Districts are constrained in development of large scale industries and infrastructure gaps that impacts development of the services sector also. Large scale demand for minimally skilled persons in agriculture is also indicative of the lack of alternative employment opportunities. As a result

many of the able-bodied men have migrated to other places in search of employment leaving behind the women to look after the farms. In spite of these challenges, it may also be argued that with right mix of skills- technical as well as soft skills, proper policy focus and diversification into other farm based and nonfarm based activities; agriculture will continue to create demand for skilled jobs albeit at a much slower pace than the requirements in the industrial and services sectors.

In addition to agriculture, manufacturing, tourism hospitality & trade, construction, transportation and warehousing and education sectors are likely to carve the growth chart for the State in next 5-10 years by creating more than 80 percent of the total human resource requirement in the State.

Table 21: Sector Share in Incremental human resource requirement

S.No	Sectors	2012-17	2012-22
1	Manufacturing	18.8%	19.8%
2	Tourism, travel, hospitality and trade	17.9%	18.9%
3	Agriculture	16.8%	14.5%
4	Education & Skill Development	12.4%	12.8%
5	Building, Construction and Real Estate	7.5%	6.9%
6	Transportation, logistics, warehousing, & packaging	6.3%	6.9%
7	Food processing	5.4%	5.8%
8	Healthcare	4.8%	4.9%
9	Auto & Auto Components	2.7%	2.9%
10	Real estate and Banking services	2.0%	1.8%
11	Public administration	1.2%	1.0%
12	Postal and communication	1.2%	1.0%

S.No	Sectors	2012-17	2012-22
13	Metal and Mining	1.0%	0.9%
14	Unorganized Sector	0.8%	0.7%
15	Banking, Financial Services and Insurance	0.8%	0.7%
16	Electricity, Gas and Water	0.5%	0.5%

Manufacturing sector

The manufacturing sector has witnessed a rapid growth in the State during the last decade due to favorable industrial and tax policy and setting up of the SIDCUL that has been playing a pioneering role in promoting industrial activities in the State. In comparison to other Indian States, Uttarakhand tops the chart by registering 30 percent annual growth in manufacturing amounting to 21 percent of the State GDP in 2009-10³⁴. As per our analysis manufacturing will remain a focused sector in terms of the requirement of skilled manpower in the next ten years. This is however based on the assumption that the current tax and other regulatory industrial packages will continue to be provided by the State Government.

As per our findings, the total human resource requirement for manufacturing sector in 2012 is approximately 0.28 million, which is expected to grow to 0.44 million in 2017 and 0.69 million in 2022. The share of manufacturing sector in total manpower requirement is 8 percent in 2012, gradually increasing to 10 percent and 12 percent in 2017 and 2022 respectively. The skill pyramid for manufacturing sector (for year 2022) shows 37 percent human resource requirement at the minimally and semi-skilled level and 26 percent at the top level. During next 10 years, 0.4 million incremental manpower requirement will be created in the State. This will include demand for 0.18 million skilled manpower, 0.26 million semi-skilled, and 0.25 million minimally skilled manpower. Major demand for skilled categories (excluding minimally skilled) is expected to be generated in Dehradun (11.8 percent), Haridwar (21.8 percent), and Udham Singh Nagar (22.6 percent). Some of the areas that require skill based training are mentioned below:

Automobile and auto parts³⁵

- ▶ There is shortage of skilled manpower in most of the industries. Skill like fitters, electricians, turners, motor mechanic would be in demand in future. Currently, the present lots of students passing out from ITIs and VTs have limited exposure in operating CNC functional machines.
- ▶ Skill development and upgradation in automobile repair is required. Currently, the students lack practical exposure and end up doing low paid job in garage and workshops.
- ▶ Industry representatives shared that there is a need to upgrade existing courses, course material, curriculum and structure of courses, with more focus on practical experience than theoretical knowledge.

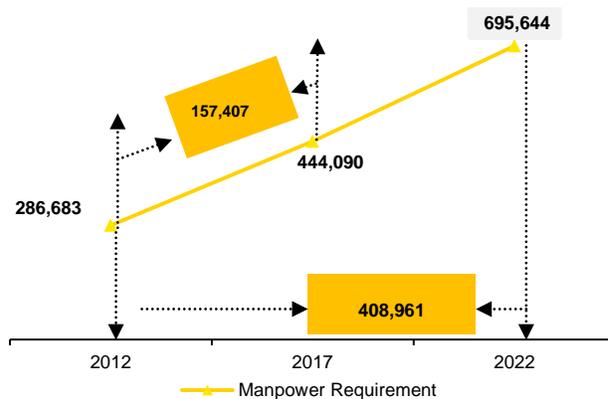
Manufacturing industry³⁶

³⁴ Source: <http://www.indicus.net/media/index.php/newspaper/1789-growing-pains>

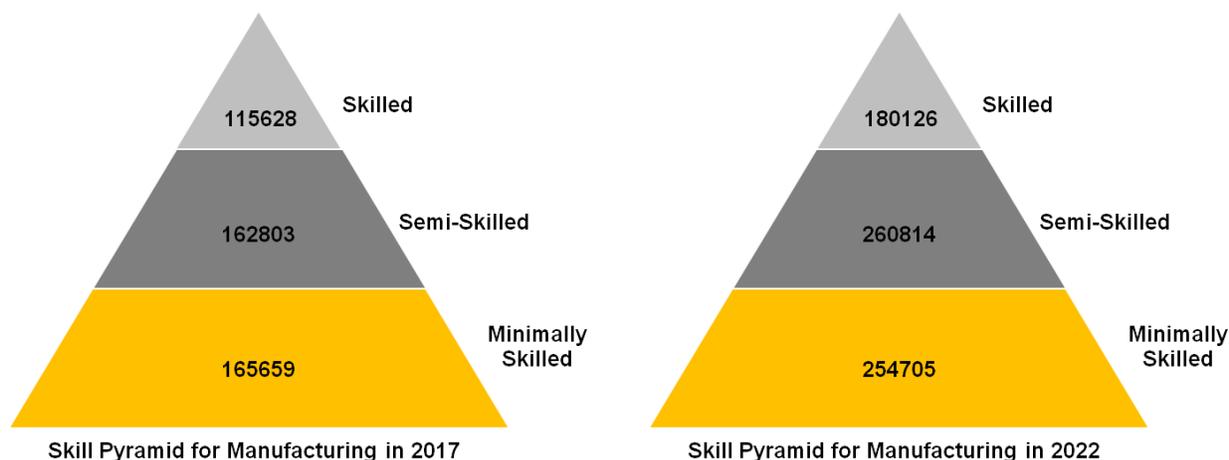
³⁵ Automobile and auto component industries include those involved in production, assembling and processing, and sale of automobiles and auto components.

- ▶ Qualitative skill gap exists for trained manpower in pulp and fruit processing industry. Training and skill development is required for operating machines and new equipment's.
- ▶ Require trained people to operate Jacard loom for handloom and hosiery industries.
- ▶ Skill gap exists for manpower for shearing and carding activities using machines. At present most of the operation is carried manually.

Heavy Engineering and Electrical Industry



³⁶ Manufacturing industries included Micro Small, and Medium Enterprises involved in processing and production. This includes industries involved in agro- food processing, handicraft, handloom, footwear, readymade garments, ceramics & plastic industries.



Tourism, Hospitality and retail

The tourism sector has been a major constituent of the service sector that already contributes almost half (49.6 percent) of the Gross State Domestic Product. Given the factor endowments, there is huge potential for growth in the tourism sector considering the demand from both the domestic and international markets in terms of content and standard of facilities and utilities. The State attracts tourists for pilgrimages, cultural tourism, nature tourism, adventure tourism, wildlife tourism, eco-tourism, and amusement and leisure tourism. The approach to tourism development in Uttarakhand has to be based on the strengths of this State. Since Uttarakhand is rich in natural beauty with a unique mountain environment as well as rich historical and cultural assets, diverse products have to be designed for various categories of people who travel to this State for different motives.

Ever since the formation of the new State in the beginning of the last decade, tourism, hospitality and trade sector has shown an upward trend in its contribution to the State GDP. As per our estimates, the total human resource requirement for tourism, hospitality and trade sector in 2012 is approximately 0.30 million, which is expected to grow to 0.45 million in 2017, and 0.69 million in 2022. Incremental manpower requirement for Tourism, Hospitality and Trade sector during next 10 years will be 0.39 million (growth of 18.9 percent or second highest). Sector's share in total human resource requirement is currently 7.9 percent and is expected to grow to 9.7 percent and 11.7 percent in 2017 and 2022 respectively. Dehradun, Haridwar and Nainital will generate majority of the demand whereas other hill Districts will also contribute significantly provided the State Government continues to support infrastructure development activities and maintain a sustained focus on growth of tourism and trade in these Districts. Some of the areas that require skill based training are mentioned below:

Adventure sports

- ▶ Need for skilled manpower as instructors for various types of adventure sports like rock climbing, river rafting, parasailing, and snow skiing. Currently they have to outsource skilled manpower from Himachal Pradesh.

Tour Guides

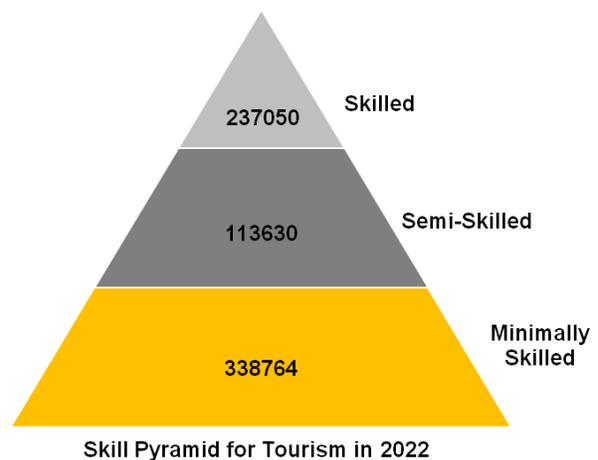
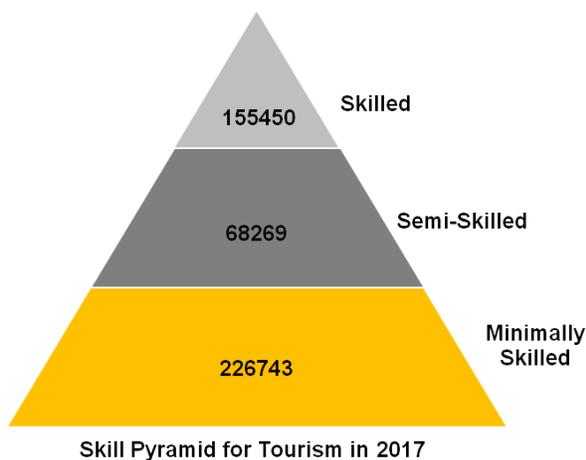
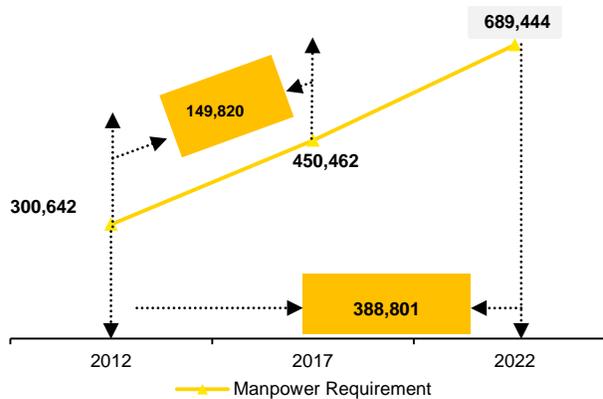
- ▶ Skill training for tour guides, hotel management and professional drivers is required. Development of guides coupled with classes in English and other regional languages would help the youth in communicating in tourists' vernacular.

Hotel and restaurants

- ▶ Requirement of trained waiters, cooks, hotel management staff, drivers, tourist guides, porters etc. Since the current workforce minimally skilled. Further there is a need to have courses on skills like hotel management, tourist guides etc. with a strong emphasis on developing soft skills.

Soft skills and personality development

- ▶ There are very limited avenues for English speaking and Personality Development. There is shortage of manpower can communicate effectively in English.



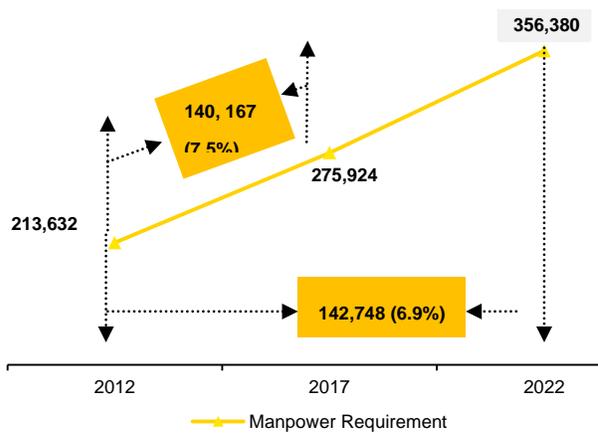
Building, Construction and Real Estate

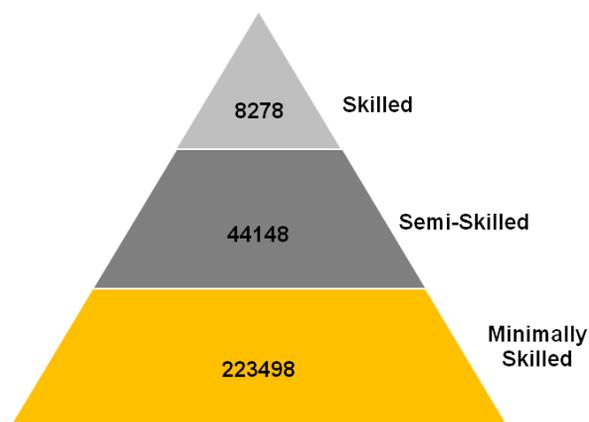
With rapid economic growth and development of physical infrastructure, construction sector would be an important area that would require skilled manpower. Growth in urban centers, and development of industrial infrastructure would require manpower of all skill categories. As per our estimates, the total human resource requirement for construction sector is approximately 0.21 million in 2012, which is expected to grow to 0.27 million, and 0.35 million in 2017, and 2022. The demand for human resource requirement in construction sector to the total population was 5.6 percent in 2012 and is expected to rise

to 5.9 percent and 6.1 percent in 2017 and 2022 respectively even if a more pessimistic growth trajectory is envisaged. Majority of the demand in the construction sector will be for minimally skilled persons (81 percent) followed by semiskilled category (16 percent) indicating greater requirements for professionals like Mason, Carpenter, Black smith, Plumber, Electrician, Painter, Driver, Hardware workers and minimally skilled laborers. Dehradun, Haridwar, Nainital, Tehri Garhwal and Udham Singh Nagar will constitute almost 71 percent of the human resource requirement in the construction sector in 2022. Construction sector constitutes development of roads, improving rail connectivity & air connectivity, and development of urban infrastructure. The manpower requirement would be in the construction of highways, approachable roads, and developing infrastructure for manufacturing industries in addition to housing amenities.

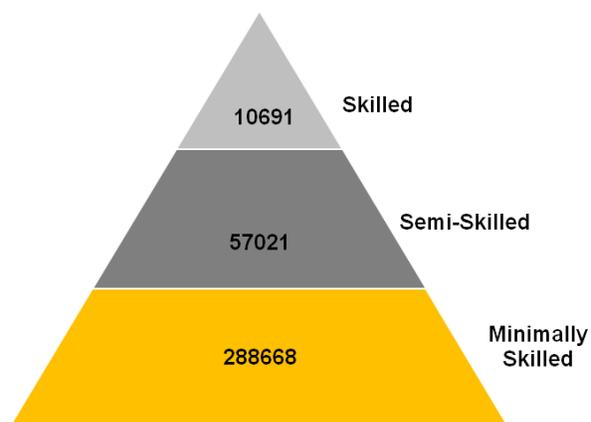
Industrial infrastructure, real estate, and infrastructure

- ▶ With growth in urban centers, IT parks, and development of industries in SIDCUL area, there would be requirement of engineers, Technicians and Foremen, plumbers, electricians, carpenter, masons painter, and drivers. Skill gap needs to be fulfilled by providing training on these skills through existing ITI and VT centers. Industry players should be involved in designing the course on the above trades.





Skill Pyramid for Construction in 2017

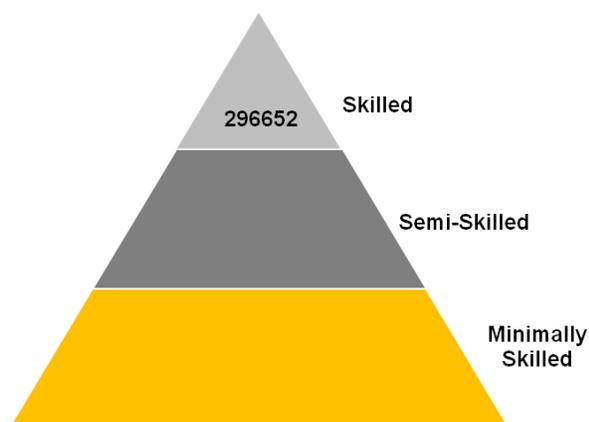


Skill Pyramid for Construction in 2022

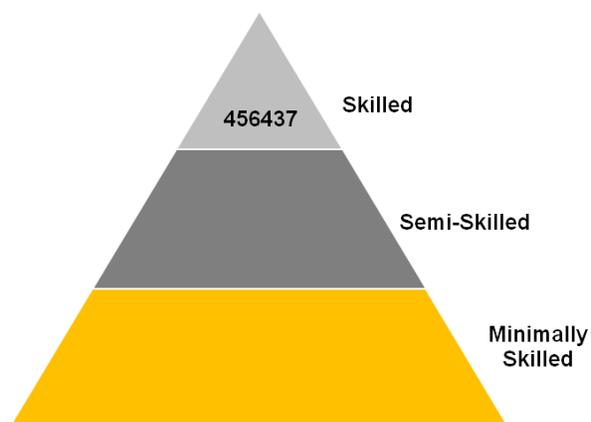
Education Sector

Uttarakhand is home to some of the India's best institutes of higher learning including the GB Pant University of Agriculture and Technology, Pantnagar, IIT, Roorkee, Forest Research Institute, Dehradun, Uttarakhand Technical University etc. The State is also known for its private boarding schools and other institutions of excellence. The coverage of education infrastructure and overall literacy level is comparable to some of the better performing States of India. The presence of high literacy levels as well as quality educational institutes makes Uttarakhand suitable for the location of sunrise industries such as biotechnology and IT. Given the factor endowments and assuming that the growth in education and vocational/technical training will be sustained in next 5-10 years, our analysis suggests that the State will require roughly 0.46 million manpower (all under the skilled categories) in the year 2022 or an incremental demand of 0.26 million in next 10 years. The demand for manpower under education sector will include Principals (Doctorate / Post Graduation with more than 15 years of experience), Head of Departments (Doctorate / Post Graduates / Graduates / Diploma holders with relevant experience of more than 10 years), teachers, professors, lecturers, training officers, placement officers and administrative staffs (Doctorate / Post Graduates / Graduates/ Diploma holders with relevant experience for 0-5 years).

With the enactment of Right to Education there will be significant increase in demand for teachers in schools and therefore colleges for teacher training. In addition there will be a demand for faculty especially in institutes for skill development.



Skill Pyramid for Education in 2017



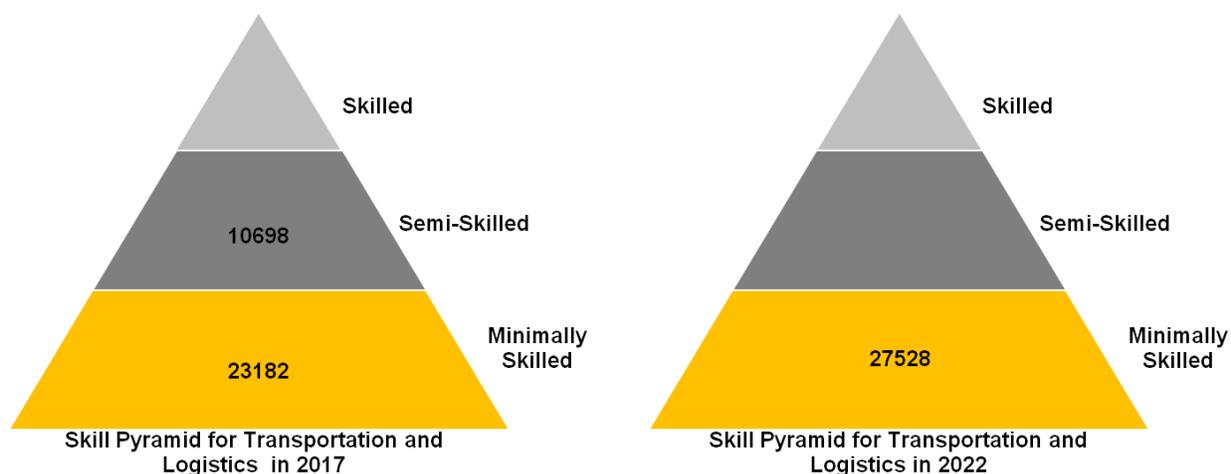
Skill Pyramid for Education in 2022

Transportation and Logistics sector

Growth in Manufacturing & industrial sectors and prospects of further growth and development of tourism sector will have a favorable impact on the transport and logistics sector. The State Government has taken some proactive steps in strengthening the logistics and transportation sector in the State by initiating setting up of two logistics hubs at Pant Nagar and Haridwar. This will enable freight traffic to switch from the road to the rail network and help industrialists save time and money. The Government-owned SIDCUL has formed a joint venture with Container Corporation of India Ltd ('CONCOR'), a public sector enterprise, to develop the two logistics hubs. The logistics-cum-transport hubs will have warehouses, truck parking facilities, dormitories and 24-hour canteens and restaurants, fuel stations, service centres, office complexes for service providers and hotels.

The demand for manpower in the transportation and logistics sector will increase by more than 3 times from the current level of 77,000 to 0.21 million in 2022. Most of the demand will be for minimally skilled categories (unorganized laborers, loaders, cart pullers etc. and semi-skilled categories.

- ▶ In the transportation sector there is shortage of drivers, bus and truck mechanic. Skill related training coupled with short term course should be provided.
- ▶ In the logistics sector there is shortage of trained manpower in moving, supplying, and storing commercial goods. In the semi-skilled category there is shortage of transport supervisors, logistics and distribution supervisor, and warehouse foreman. Courses on the above trade can help in providing skilled manpower in future.
- ▶ There is shortage of trained people that can perform packaging operation. Customized training on packaging different types of raw material would be required to plug the skill gap.



Haridwar, Dehradun, Udham Singh Nagar, Nainital and Pauri Garhwal are the top five Districts that will create maximum requirements for skilled human resources in year 2022. The District and sector wise human resource requirements in year 2022 is provided in table below

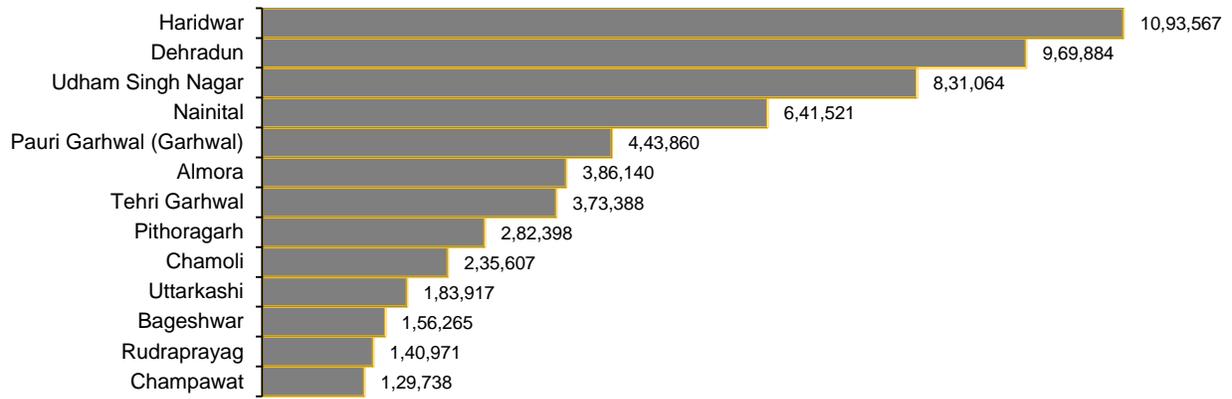


Table 22: HR requirements (demand) for each Districts and sectors - 2022

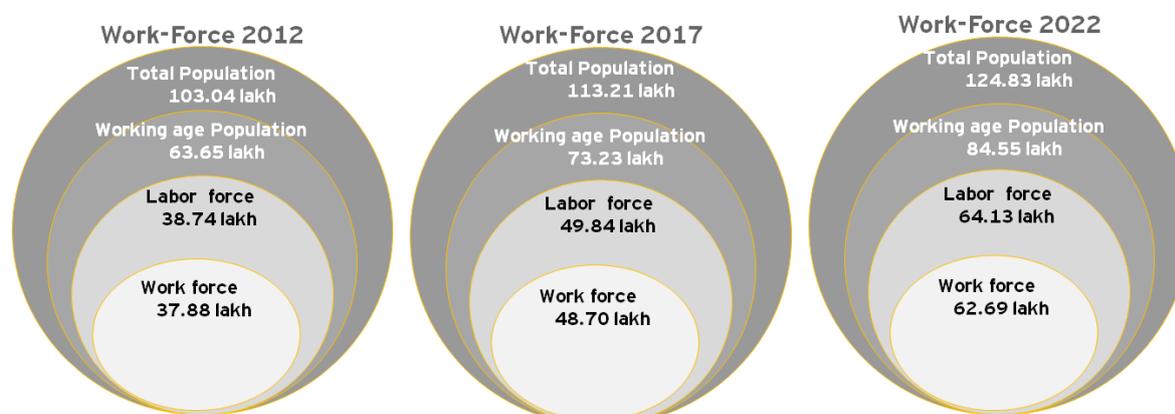
Sector	Uttarkashi	Chamoli	Rudraprayag	T. Garhwal	Dehradun	P Garhwal	Pithoragarh	Bageshwar	Almora	Champawat	Nainital	Haridwar	Udham Singh Nagar
Agriculture	118,474	137,502	89,664	217,778	153,659	276,557	147,649	108,047	240,989	74,658	240,353	335,722	298,787
Manufacturing	7,338	10,542	4,832	16,981	114,391	18,808	17,916	8,630	10,757	5,364	54,203	238,229	187,651
Tourism, travel, hospitality and trade	6,940	11,344	8,155	30,495	196,849	39,059	23,401	7,116	20,709	9,079	92,008	164,137	80,152
Education & Skill Development	17,066	24,416	12,347	31,803	91,242	41,852	31,332	9,848	32,865	6,673	45,944	71,405	39,644
Building, construction & Real Estate Services	8,301	14,750	8,520	35,359	82,246	20,214	16,922	8,054	19,315	6,669	32,151	63,663	40,216
Transportation, Logistics, warehousing & packaging	3,765	7,680	4,158	13,438	37,157	7,025	8,657	4,678	8,467	9,414	38,161	37,906	34,481
Food processing	5,081	5,190	4,625	1,553	7,188	3,136	15,279	961	23,023	8,728	39,739	33,420	43,619
Healthcare	3,363	2,650	2,344	4,933	89,586	6,222	4,023	975	4,142	1,420	13,044	30,638	14,371
Public administration	6,265	6,461	1,846	6,699	40,883	9,771	5,993	2,959	8,864	2,221	19,060	14,671	20,970
Real estate and Banking services	1,584	1,430	988	2,487	26,539	2,911	2,693	743	3,537	887	6,007	44,158	14,976

Sector	Uttarkashi	Chamoli	Rudraprayag	T. Garhwal	Dehradun	P Garhwal	Pithoragarh	Bageshwar	Almora	Champawat	Nainital	Haridwar	Udham Singh Nagar
Auto & Auto Components	587	900	386	524	39,871	1,947	594	929	921	704	10,833	14,755	22,589
Unorganised sector	1,482	3,826	1,070	2,429	22,160	3,016	1,228	457	3,762	1,057	4,684	16,385	7,761
Postal and communication	500	1,225	507	2,818	23,539	5,544	1,745	762	3,654	1,146	4,723	10,051	12,714
Banking, Financial Services & Insurance	1,444	1,592	884	1,828	12,575	4,394	1,616	662	2,775	550	8,832	13,203	9,154
Metal and Mining	97	496	219	662	22,401	263	994	928	679	426	28,079	1,463	840
Electricity, Gas & Water	1,630	5,603	425	3,602	9,597	3,141	2,357	515	1,682	744	3,702	3,760	3,139

3.2 Human resource supply

Human resource supply is estimated as a function of total labor force and its composition as per skill categories based on level of education attainment. As of 2012, approximately 3.87 million people are part of the labor force. In next 10 years approximately 0.25 million people will join the labor force every year. Total labor force in 2022 is expected to increase by 2.5 million and reach around 6.41 million.

Work Force profile of Uttarakhand



Estimated Work Force			
Year	2012	2017	2022
Total Population	10,304,421	11,321,334	12,483,222
Working Age Population	6,365,110	7,323,918	8,455,056
Available Labour Force	3,874,703	4,984,229	6,413,144
Projected Work Force	3,788,457	4,870,409	6,269,986
Incremental Manpower Supply (2012-2022)	25.38 lakh		

District wise labor force supply for the State of Uttarakhand in the years 2012, 2017 and 2022 is provided in the Table 23 below:

Table 23: District wise labor force supply

District	2012	2017	2022
Dehradun	655,396	874,042	1,163,589
Haridwar	725,798	865,528	1,043,798
Udham Singh Nagar	632,030	827,070	1,100,017
Nainital	366,367	471,775	602,001
Garhwal	266,658	356,035	457,068
Almora	240,769	321,100	418,429
Tehri Garhwal	235,949	305,018	398,438
Pithoragarh	186,915	245,749	323,530

District	2012	2017	2022
Chamoli	149,930	193,711	250,089
Uttarkashi	126,498	163,475	209,843
Bageshwar	99,347	126,194	159,286
Champawat	98,254	119,833	146,186
Rudraprayag	90,792	114,699	140,872
Total labour force	3,874,703	4,984,229	6,413,144

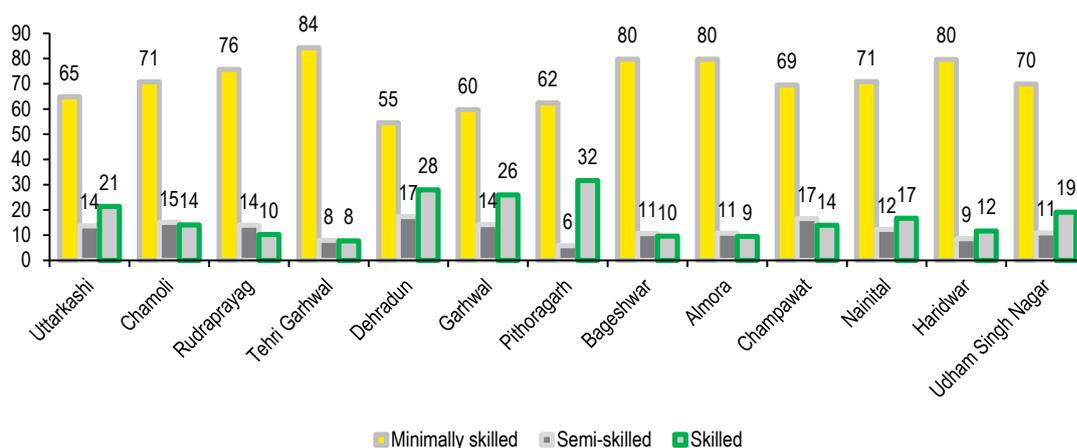
Almost 68 percent of the labor force will come from the top five Districts namely Dehradun, Haridwar, Uddham Singh Nagar, Nainital and Pauri Garhwal. Dehradun will remain the top District in terms of share of total labor force in 2012 and 2017, and 2022 (16 percent, 17 percent, and 18 percent respectively) followed by Haridwar. The corresponding share of Uddham Singh Nagar is however expected to increase over the years, from 16 percent in 2012 to 17 percent in 2022.

Table 24: Incremental labor supply (District and skill wise)

District	2012-17			2017-22			2012-22		
	Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
Uttarkashi	24,107	5,093	7,776	29,865	6,379	10,124	53,973	11,472	17,900
Chamoli	31,153	6,406	6,223	39,760	8,702	7,915	70,914	15,108	14,138
Rudraprayag	18,482	3,068	2,357	19,408	3,946	2,819	37,890	7,014	5,176
Tehri Garhwal	57,705	5,830	5,534	79,191	7,165	7,064	136,896	12,995	12,598
Dehradun	121,913	36,608	60,125	155,596	51,517	82,435	277,509	88,125	142,559
Garhwal	55,350	12,235	21,792	58,301	14,949	27,782	113,651	27,185	49,574
Pithoragarh	37,439	3,725	17,670	47,783	4,335	25,662	85,222	8,060	43,332
Bageshwar	21,501	2,809	2,536	26,270	3,585	3,237	47,771	6,395	5,774
Almora	64,314	8,482	7,535	77,218	10,779	9,332	141,532	19,261	16,866
Champawat	14,889	3,648	3,041	18,398	4,302	3,653	33,287	7,951	6,694
Nainital	76,090	12,122	17,195	90,996	17,036	22,194	167,086	29,158	39,389
Haridwar	111,202	12,173	16,354	141,925	15,557	20,788	253,128	27,730	37,142
Udham Singh Nagar	134,387	22,555	38,098	192,412	28,786	51,748	326,800	51,341	89,846
Total	768,535	134,756	206,236	977,123	177,039	274,752	1,745,658	311,794	480,988

Based on our estimates the number of minimally skilled labor force is expected to be around (2012 – 2022) 1.75 million (68 percent) of the total labor force, the number of semiskilled persons are expected to be around 0.31 million (12 percent), and skilled manpower around 0.48 million (18 percent).

District and skill category wise analysis of the incremental labor force data (2012-22) indicates a much skewed pattern for minimally skilled category. As per our estimates, almost 28 percent each of the skilled labor force will come from top two Districts of Pauri Garhwal, and Pithoragarh. Comparatively, the figures for skilled manpower supply are slightly less skewed with top 5 Districts (Pauri Garhwal, Pithorogarth, Uttarkashi, Dehradun, and Nainital). Supply of semi-skilled and minimally skilled manpower is more or less proportionate for all the Districts except for the Districts of Dehradun, Champawat, Chamoli, and Haridwar.



3.3 Estimating the gaps in Human resource demand and supply

As per our estimates, in next 10 years incremental human resource requirement will be 2.06 million while the incremental human resource supply shall be 2.54 million indicating a surplus supply of 0.48 million over the period 2012-22.

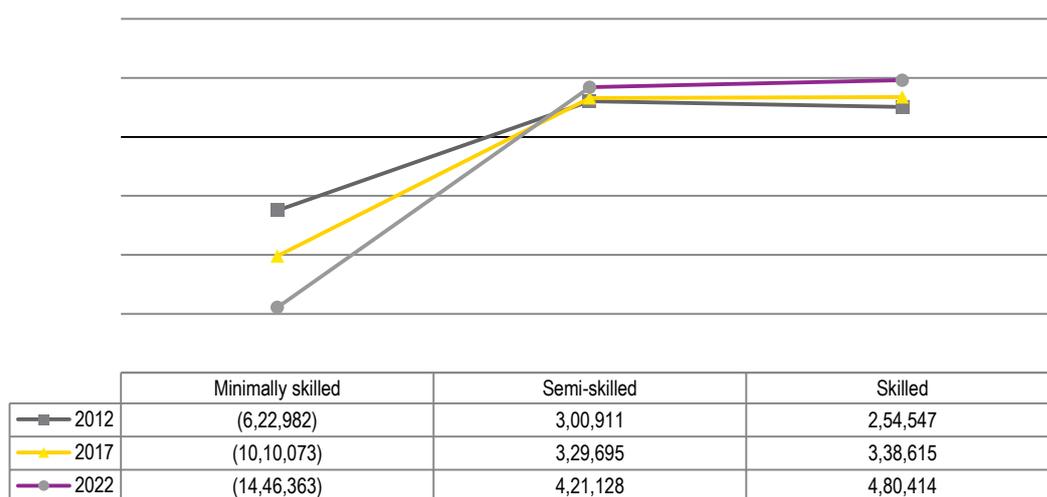
As of 2012, the State has a surplus labor force (labor force available is more than the demand created in the State). This trend is expected to continue in 2017 and 2022 indicating that people will have to migrate and look for jobs outside the State. The surplus in supply is caused due to higher proportion of minimally skilled persons in the labor force. Although the proportion of minimally skilled persons in total labor force supply is expected to reduce from 73 percent in 2012; 72 percent in 2017 and 71 percent in 2022, it will still remain significantly higher than the demand (58 percent in 2012, 56 percent in 2017 and 53 percent in 2022).

The demand for semi-skilled and skilled manpower in 2012, 2017 and 2022 is approximately 1.6, 2.06 and 2.75 million respectively; corresponding values for labor supply will be however 1.05, 1.39 and 1.85 million respectively indicating a skill gap of 0.64, 0.67 and 0.9 million in years 2012, 2017 and 2022. The demand supply mismatch for the three reference years is further illustrated in table 25 below:

Table 25: Mismatch between demand and supply (2012 – 2022)

Year	2012		2017		2022	
Skill Category	Demand	Supply	Demand	Supply	Demand	Supply
Minimally skilled	21,97,451	2,820,433	25,78,895	3,588,968	31,19,728	4,566,091
Semi-skilled	8,11,832	510,921	9,75,372	645,677	12,43,844	822,715
Skilled	7,97,896	543,349	10,88,200	749,585	15,04,751	1,024,337
Total	38,07,179	3,874,703	46,42,466	4,984,229	58,68,322	6,413,144

Skill Gap Scenario for 2012, 2017, and 2022



During next 10 years (2012-22) 2.06 million incremental jobs will be created while 2.53 million additional persons will be added to the labor force. The breakup of incremental human resource requirement by skill category and corresponding figures for incremental labor force supply is provided in Table 26 below:

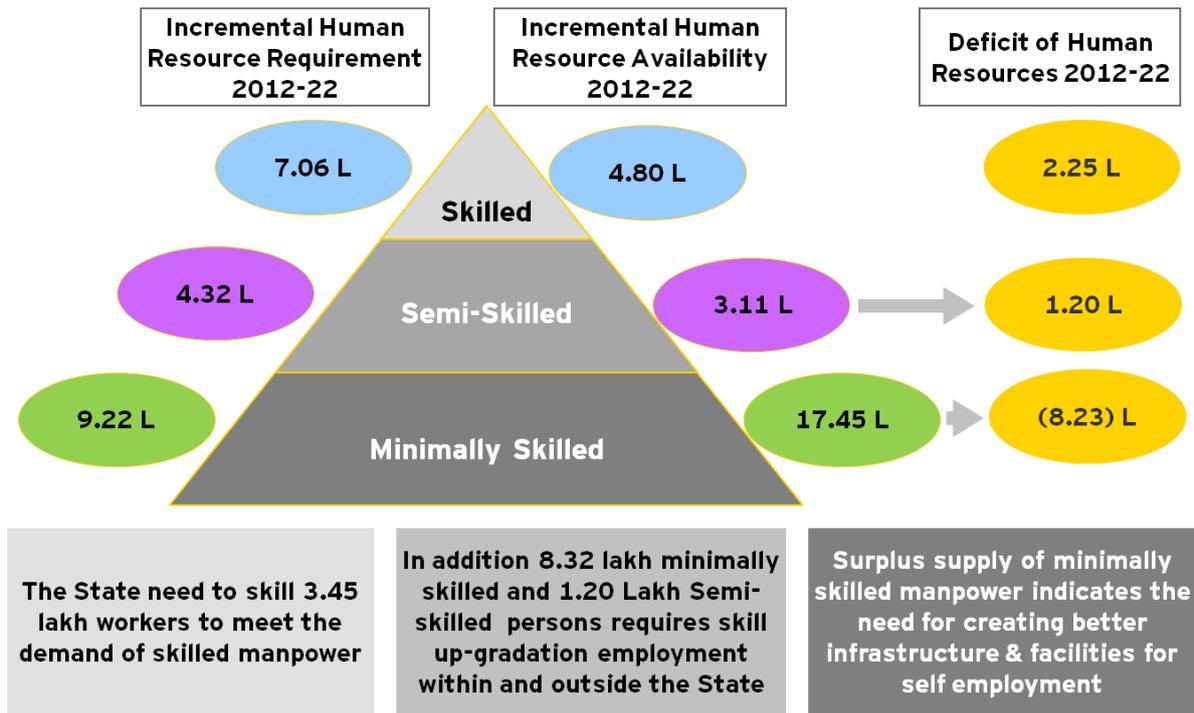
Table 26: Incremental human resource requirement (skill category wise)

Skill Category	2012-17			2017-22			2012-22		
	Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
Incremental Demand	3,81,444	1,63,540	2,90,304	5,40,833	2,68,472	4,16,551	9,22,277	4,32,012	7,06,855
Incremental Supply	7,68,535	1,34,756	2,06,236	9,77,123	1,77,039	2,74,752	1,745,658	3,11,794	4,80,988
Skill Gap (Demand-Supply)	-3,87,091	28,784	84,068	-4,36,290	91,434	1,41,799	-4,36,290	91,434	1,41,799

The estimates for incremental skill-gap indicates that the State will be able to create more number of

semiskilled (graduate and vocational training) and skilled manpower than the local demand, but there will be a significant gap of labor force having technical training (skilled manpower). It may be however noted that low level of skill gap for semiskilled and skilled categories are mainly due to better training coverage in few selected Districts (Dehradun, Nainital, Haridwar and Pithoragarh) and does not necessarily provides an overview for the State as a whole.

Summary of Skill Gap in Uttarakhand



4. Stakeholders perspective : Available opportunities and issues to be addressed

During the course of this study extensive interactions were held with different stakeholders in all the Districts. Their perceptions based on their experience and observations are important to note. This section of the report collates their views. The responses received have been analysed for the three sectors i.e. primary, secondary and tertiary. A District wise analysis has also been done to get desegregated view of available opportunities in each District.

Primary Sector

Most of the land in the State is covered with forest; there is scope of diversifying agriculture pattern, which can create employment in horticulture, floriculture, organic produce, and animal husbandry. Based on the discussion with District level officials, it was found that there is shortage of skilled manpower and inadequate infrastructure that hinders the growth and scalability of agriculture diversification. The areas which were identified which could be considered for skill development:

- ▶ The climate of Uttarakhand spans across different agro-climatic zones making it conducive for growing flowers. As an alternative to traditional farming there is great interest among the local youth to pursue floriculture. They need field based demonstration on flower cultivation which will help them pursue it at a scale and derive economic benefits.
- ▶ Although the Krishi Vigyan Kendras provide regular training and extension services, these are not enough due to insufficient numbers of agriculture scientists. By improving the present infrastructure and providing training to trainers can help in bridging the technological gap on new methods of agriculture farming and extension services.
- ▶ It is important to develop the capacities of women, who are primarily involved in agriculture and have an important role to play in the economy especially in the hilly regions. They will be able to increase agricultural productivity if given training. Some areas which may be considered for training are irrigation practice, fertilizer intake, seed selection etc.
- ▶ Training on organic farming has enormous scope in the entire hill Districts. For example in Rudrapur District there is high demand for organic produce but the supply is less. Spreading awareness among the farmers and providing them with training on farming techniques will generate interest and attract the agrarian population towards commercialization of organic produce. Skill development was required in organic farming methods, sorting, grading and processing of food products.
- ▶ Since there is availability of large quantities of seasonal fruits and vegetables training maybe given in areas like fruit pulp processing and production of vegetables in poly houses. Inadequate post-harvest technology (processing, grading, processing, and packaging) provides enough opportunity to develop appropriate infrastructure and organize customized training programmers in collaboration with ITIs.
- ▶ There is plenty of opportunity to set up orchard farming in the State, but the farmers do not have enough capacity to scale up cultivation. They may be provided technical training on soil preparation, selection of agri-inputs, crop rotation, and harvesting technique. In addition, they also require skills in marketing and developing linkages for better returns.
- ▶ Dairy operation including animal husbandry operations can be scaled up in the State provided there is adequate infrastructural and investment support. There is shortage of skilled manpower that can perform dairy operations in an integrated manner. At present there is shortage of milch animals, and milk produced is consumed at a subsistence level. There is scope to provide training to farmers on breed improvement, fodder management, and taking care of the health of animals.

- ▶ Uttarakhand Tea Development Board has been working on tea cultivation and processing (inorganic and organic tea) on more than 700 hectares³⁷ of land in the hilly Districts of Uttarakhand. There can be an increase in the tea plantation by making use of fallow and cultivable vacant land. As per the vision of Uttarakhand Tea Development Board it proposes to bring 9000 hectares of land under tea plantation. This will require skilling people in the area of tea cultivation and processing.
- ▶ There are certain other State level corporations /federations with similar potential for expansion These include:
 - **Tarai Development Corporation:** The main objective of Tarai Development Corporation is to make available improved quality seeds, to help farmers improve their productivity and also improve their economic status;
 - **Uttarakhand State Organic Certification Agency:** The agency provides affordable organic inspection and certification service in the State;
 - **Uttarakhand Co-operative Dairy Federation Ltd:** Uttarakhand Co-operative Dairy Federation Ltd. (UCDF Ltd.) is the apex federation of District milk cooperative unions in the State of Uttarakhand established for the successful implementation of the dairy programme in the State, for the socio-economic upliftment of the poor remote areas by providing them a milk market at reasonable price;

Some challenges faced by the sector from the perspective of the stakeholders are as follows:

- ▶ Non existence of forward and backward linkages for herbal and aromatic plants.
- ▶ Lack of marketing opportunities and facilities like mandis and 'saras kendras' limits the farmers from large scale production.
- ▶ Lack of proper infrastructure such as commercially sized coops or quality feed, fodder depot for poultry and dairy farming.
- ▶ Marketing and selling of fruits and vegetables is unorganized and generally involves middlemen.
- ▶ Unavailability of cold storage facility creates hindrance in promotion of forward linkages.
- ▶ Limited value addition to fruits, vegetables and spices post-harvest, resulting in lesser revenues for the farmers.
- ▶ Lack of superior quality breeds and inadequate facility of fodder production and distribution.
- ▶ Unavailability of timely vaccines and skilled staff capable of managing dairy development.

Secondary Sector

The growing secondary sector is finding it challenging to source skilled human resource. The industries flourishing in the SIDCUL area require skilled manpower to cater to their business process. At present, the demand for skilled electrician, fitters, welders, motor mechanist, and machinist is not being fulfilled by the existing ITIs and other technical institutes. As an example in Sigaddi growth center, the local industries are finding it very challenging to find skilled and minimally skilled labor. In order to promote employment opportunities for the people of Uttarakhand, the Government has introduced a condition that the companies setting base in Siggadi need to recruit 70 percent of its workforce from the State. The IT companies are struggling to find candidates who have secured first division in class 10, Diploma or polytechnic. Some potential areas where skill development is required are mentioned below:

Automobile and engineering

Automobile industries have major presence in the State and employ most of the skilled manpower from existing vocational training centers and ITIs. Industry representatives shared that the current work-force are trained but not skilled enough to handle new machinery. They stressed the need to

³⁷ <http://utdb.uk.gov.in/pages/display/59-tea-estates-gardens-->

align the current courses with the demand of industries and train people on Computer Numerical Control (CNC) machines. At present there is shortage of skilled people that can operate these machines. New training modules need to be designed for electricians, mechanics, welders, fitters and plumbers. In addition to this, the student intake capacity of those ITIs should be enhanced, which have been upgraded under programmes like Vocational Training Improvement Programme (VTIP) and Public Private Partnership (PPP). This may be done by increasing the hostel facilities and creating awareness among youth of the hills to opt for the courses and benefit from the opportunities offered.

Agro - food processing

Given the major scope for food and vegetable processing, there is a need for training on food processor induction skill set, machine operator skills and food production supervisor skills. Lack of skilled manpower and infrastructural support makes it difficult to scale up production. There is scope to train people in collaboration with public and private technical institutes. Food processing industries from other parts of the country can assist the District level industrial centers and vocational institutes in training people. Existing ITIs and training centers should offer specific skills related to food processing.

Handloom and wool processing industries

Khadi and handloom industries face challenges in promotion of khadi products due to old design which are being produced using old machines. Training may be given on 'jacquard looms' that are compatible with the latest design trends. At present there is shortage of trained workforce to operate these machines. Other aspects that require training includes marketing skills for khadi products. As an example Almora District has presence of River View Khadi and Handloom Factory that can be strengthened by providing infrastructural and training support from Village Industries Commission of India. Major challenges in the promotion of this sector were felt due to redundant technologies in production and little innovation in designs. It was shared that the factory still relied on 'khaddi' machines whereas new improved technologies like 'jacquard looms' were in the market.

Wool industry has not been developed in an integrated manner in Uttarakhand. Industry representatives feel that there is gap in skilled manpower for processing raw wool to final product. Presently, the sheep are reared locally without using any carding and cleaning machines. There is ample opportunity to provide training on mechanized shearing, cleaning and spinning. At present there is shortage of skilled manpower to carry to carry the above process. Training in these areas could be introduced through different streams - existing skill development programmes, NGO programmes. Associated skills related to marketing, entrepreneurial development maybe given by setting up community colleges for which support is being given by the Central Government also.

Some barriers in development of the secondary sector are as follows:

- ▶ Low awareness levels and lack of skill in food processing technology.
- ▶ There is a shortage of a common facility center for wool processing and cleaning.
- ▶ Tools used in the Handicraft industry are outdated; production is primarily through traditional technology.
- ▶ People involved in handicraft lack formal skills, ideas for innovation and market linkages thereby limiting the reach of their products.
- ▶ Current workforce lack skill in operating new machines operated by the industries.

Tertiary Sector

Tourism and Hospitality management

While Tourism sector offers tremendous employment opportunities, it is yet to achieve its full potential, which is why it does not offer year round employment to the local population. Among several measures required to promote the sector, the most significant one is infrastructure development.

Tourist zones in the State need to be properly connected through roads, rails, and airports; ensure availability of electricity and internet connectivity. The variety of tourism options (religious, adventure, cultural) are unique to this State which should be publicized.

There is insufficient availability of trained work-force in the hospitality sector. The State has shortage of trained cooks, waiters, front office staff, tourist guides to cater to the requirements of domestic as well as international tourists for which training facilities are needed. The existing educational and technical institutes lack trained faculty. Courses on tourism and hotel management can be introduced in the existing polytechnic colleges to retain high school pass outs within the Districts.

Adventure Sports like river rafting, parasailing, snow skiing, rock climbing and bungee jumping could be developed on a much higher scale to tap the interest of the youth aside of their traditional inclinations. The Department of Tourism has proposed gliding points in Chandak, Munakot and Dwaj. Training may be provided for adventure sports instructors, tour guides, and trained drivers. Skill based training opportunities also exists for training wildlife guides and nature interpreters. Nehru Institute of Mountaineering (NIIM) is the only institute in the State that offers training on adventure sports. The tourism board strongly feels the shortage of skilled manpower as instructors for various adventure sports. Presently, either instructors are sourced from Himachal Pradesh or they have to hire students from NIIM. Given the demand for adventure sports, there is requirement for setting institutes like NIIM that can provide training on a plethora of outdoor sports activities.

Business Process Outsourcing (BPOs)/Knowledge Process Outsourcing (KPOs)

There is scope of providing training for service industries like BPO, KPO, insurance, and retail in the hilly Districts of Uttarakhand. At present the demand for skilled manpower for these industries is sourced from other States. Existing colleges, vocational training centers and ITIs can offer a short term courses to train people on these services.

Employment of ex-service men

A number of people from the State join forces. Since the retirement age of the service men is less a large number of them can be usefully employed. The team found an ex-service man imparting training in an ITI. The Principal of the ITI shared that since they have practical experience also, they become very good trainers. Since there is a shortage of faculty, they can be usefully employed to meet the demand.

Some challenges faced by people engaged with this sector are as follows:

1. Poor condition of the trekking paths, insufficient shelter points, and lack of trained nature and trek guides affects tourism industry in the State.
2. Problem of migration to industrial belts such as Haridwar, Uddham Singh Nagar, and Dehradun.
3. Shortage of English teachers and soft skill service providers in the hilly Districts.

Perspective of the Youth

Youth were important respondents in the study. The team made additional efforts to meet with youth groups in all the Districts. However, their perceptions are very important, therefore warrant a separate mention also. Some common perceptions shared by the youth groups are mentioned below.

1. While the data suggests that majority of the population is engaged in the primary sector, a discussion with the youth groups reflected that they were not very enthused to continue with agriculture and allied areas. They appeared to be more keen on technology based skills. This trend is noticeable and in the view of some adults, although literacy levels are improving, traditional knowledge is getting eroded since the youth is not very interested in pursuing it.
2. Their inclination is more towards pursuing service oriented courses. They are keen to acquire soft skills – especially English speaking - that will help them with their preparation for competitive examinations and also jobs. A number of students expressed that the courses offered in their respective colleges need to become applied courses so that these will help them get jobs.

3. The only area which enthused the youth was tourism sector where a number of suggestions were given by them such as initiating courses on adventure tourism, eco-tourism, wildlife guides, hospitality. They find that these courses are not being offered across all Districts although there is a lot of demand and growth potential for the tourism sector.
4. Students studying in ITI s complained that they required newer machines where they can receive training and more importantly they needed industry exposure. Despite the VTIP and PPP schemes in the ITI s, it appears that there is still a lot of room for improvement in the quality of training these institutions impart.
5. A number of students in the hilly Districts shared that coaching centres for computer education not available. Even if these are available, the training imparted is not of good quality. If they receive this training they can find local employment .
6. Girls shared they would be interested in receiving training for teaching and nursing professions. Their parents would also be more supportive of them if they pursue these occupations.

Youth aspirations – difference between industry demand and aspiration

Youth aspiration study vis-à-vis industry demand for skilled labor shows that there is mismatch between industry expectation and job ambition. The matrix below provides shows that majority of the youth aspire to join Manufacturing, Construction, Tourism, Health care, Automobiles, and Food Processing industries. Whereas Industry demand for manpower is more for Agriculture & Allied Services, Real Estate, and Health care.

High ↑ Incremental Manpower Potential	Agriculture & Allied Services	Manufacturing, Construction, Transport, and Warehousing	Tourism, Hospitality, Trade, IT/ITES
	Real estate , and Banking Services	Health care, Automobile, Auto Components	Food Processing, Education
	Social services	Handloom and Handicrafts	Public Administration
Low	Low Youth Aspiration across Sectors High		

District Mapping of High Youth Aspiration

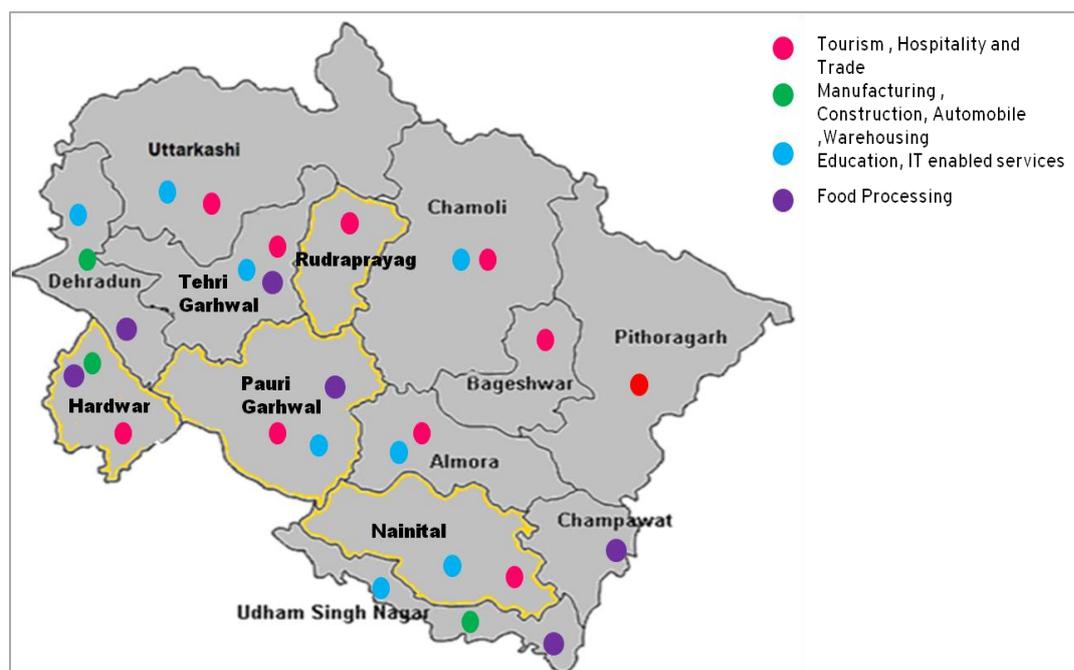
The map shows spatial representation of youth aspiration across all the Districts of Uttarakhand. Majority of the youth showed their preference for Tourism, Hospitality, and Trade followed by Education, IT enabled services, Food Processing, and Manufacturing sector. Sector mapping with youth aspiration is in conjunction with the demand for human resource requirement in the top sectors based on EY analysis. High youth aspiration District wise for top sectors is listed below:

Tourism, Hospitality and Trade: Uttarkashi, Rudraprayag, Tehri Garhwal, Haridwar, Pauri Garhwal, Chamoli, Bageshwar, Almora, Pithorogarh, Nainital

Manufacturing Construction, Automobile & Warehousing: Dehradun, Haridwar, Uddham Singh Nagar

Food Processing: Haridwar, Udham Singh Nagar, Dehradun, Pauri Garhwal, and Champawat

Education IT enabled services: Udham Singh Nagar, Nainital, Pauri Garhwal, Almorara, Pauri Garhwal, Dehradun, Tehri Garhwal, Utarkashi, Chamoli



The report provides detailed information and analysis of each of the Districts. These have been aggregated to get an overview of what is required to be done across different Districts and identify common areas for intervention. It goes beyond skill development and takes into account issues that need to be addressed to develop a strong eco system for realizing the potential. Some of these have been provided in the Table 27 below. As may be seen most of the responses pertain to the primary sector and tourism:

Table 27: District wise stakeholder’s perspective

Name of the District	Growth Sectors	Support required
Bageshwar	Farming of herbal medicinal and aromatic plants and organic farming	Production and diversification in high value products such as herbal, aromatic and medicinal plants; promotion through training, educational workshops, trade fairs of organic farming and its advantages and benefits; Linkages with retailers; Creation of mandis/clusters; Performance based subsidies; Impart knowledge and training on HYV or green revolution agricultural products; Creation of storage and transportation networks.
	Poultry Farming, Dairy farming and Animal husbandry	Promotion of natural pasture development (Bugials) and fodder tree plantation with an additional benefit of soil and water retention capacities (e.g. oak, khirak, albiza, bheeemal, bamboos, timla, aseem etc.) as a permanent solution to solve green fodder problems; the Government should encourage fodder development by leasing the panchayat wastelands to the milk producer’s cooperative societies/farmers; Creation of fodder lands and veterinarian services; Awareness regarding clean milk production and proper maintenance of cross bred animal needs to be created

Name of the District	Growth Sectors	Support required
		by organizing special camps and other initiatives; Private entrepreneurs should be encouraged/incentivized to set up/initiate processing and marketing of indigenous milk and milk products, veterinary clinics among other related industries.
	Rural handicrafts (including the production of mats, baskets, flower pots, fancy bags to leverage on the District's abundant supply of raw material available for these activities)	Training must be provided to local youth in order to skill them to produce utility as well as decorative items, which in turn would attract demand from tourists.
	Tourism	Promote nature/eco-tourism via niche tourist activities in the District under the Explore Uttarakhand brand by initiating focused marketing strategies, improvement in the local infrastructure, inviting known hospitality service providers (hotels, travel agencies, established eco-tourism operators) to operate in the District; Improvements in road connectivity, training of guides, staff in both hospitality as well as eco-tourism will further improve tourism in the District.
Chamoli	Tourism and hospitality Sector, as well as adventure sports	Creation of quality hotels and regularization of accommodation facilities; Promotion of adventure sports such as para gliding in Gauchara and other locations across Uttarakhand will help promote tourism in the District.
	Floriculture and horticulture (apple, citrus fruit, walnut, peach, off-season vegetables and spices.	Focus needs to be shifted on post-harvest mechanization that will help in value addition to the produce; Creation of mandis; Developing an efficient supply chain can also help improve revenues to the farmers; Farmers can be given skills training to ensure the above and also on skills related to horticulture and floriculture.
	Dairy farm development, potential for production of milk based products like milk, paneer and butter	Focus on training the youth in the veterinary services will help bridge the gap of skilled staff; Government should encourage private veterinary clinics and consultants for reproduction, disease control and value addition in dairy products; There is a need to promote awareness through organizing training camps regarding the proper maintenance of cattle.
	Handicrafts and Handloom products	Creating market for these products; organize regular workshops to upgrade techniques, technology and production; Upgrade craftsmen's skills and product designing ability, set up an Institute for Design which will ensure creation of market oriented products, product diversification and participation of craftsmen in exhibitions in India and abroad as well as sustain the craft for future generations.
	Forestry and Waste Land Development	Wastelands could be converted into fodder tree plantations (e.g. Khirak, Oak, Albizia, bamboos, Timla and Bheemal etc) and hence solve the green fodder problem in hills, growth of trees like fir,

Name of the District	Growth Sectors	Support required
		deodar, kail pine, chir and oaks need to be promoted as they provide a variety of herbs, timber, furniture and other items like Ringal items and paper.
Champawat	Wildlife tourism	Training for wildlife guides and nature interpreters; professional courses on hotel management could be initiated at the University level; Resources need to be mobilized for infrastructural up-gradation in terms of road, connectivity and electricity.
	Horticulture	Distribution channels must be created so as to ensure a market, creation of processing and packaging units
	Animal Husbandry (Scope for goat , sheep and swine rearing is promising)	Infrastructure facilities need to be improved; Government owned waste- lands could be leased to the cooperative societies for fodder cultivation.
	Agro-processing units (preserving and processing of fruits as well as aromatic and medicinal plants)	Processing centre's must be set up that utilize grade C quality produce of apple and tomato for making jam, juice, chutney or ketchup respectively in addition to other condiments; Training in organic food processing and value additions (such as grading and packaging) must be organized for farmers; bottlenecks related to transportation and cold storage facilities must be removed and channels must be created to exploit the export potential for organic produce.
Pithoragarh	Tourism and Hospitality sector (Scope for developing water sports such as kayaking or river rafting, para gliding and hand gliding at gliding points like Chandak, Munakot and Dwaj)	Circuit development of three excursions (Chandak, Thal kedar, Gangolighat) by the State Government and development of nearby infrastructure (in terms of connectivity and transportation) would give a boost to the nearby villages of these areas. Development of guides coupled with classes in English and other regional languages would help the youth in communicating with the tourists.
	Horticulture (cultivation of fruit orchids and vegetables and processing and packaging units)	The District has one of the largest wastelands among all the Districts of Uttarakhand. The Government needs to look at the options for leasing these waste lands to private entrepreneurs for orchid development. The capacity of the existing nurseries must be utilized to the full extent possible. A District level initiative in promoting fruit preservation and fruit processing units in the region will help. Further, a Fruit & Vegetable Association needs to be established for dissemination information at the local level about the technical know-how and new cultivation techniques.
	Animal Husbandry (Poultry, sheep and fisheries have future growth potential)	Infrastructure facilities need to be improved; Government owned waste- lands could be leased to the cooperative societies for fodder cultivation.
	Milk related products	The quality of such milk collection routes and milk cooperatives must be improved. Proactive approach on marketing by diversification into milk related products will be beneficial.

Name of the District	Growth Sectors	Support required
	Mining and Mineral based Industries (the District has abundant reserves of copper, limestone, dolomite, soapstone, magnesite.)	Initiatives must be taken in public private partnership mode to optimize the scale of operations
Rudraprayag	Tourism and Hospitality sector (Scope for adventure sports such as River Rafting and Bungee Jumping)	Scope for skill training for tour guides, hotel management and professional drivers.
	Organic Farming	Productivity can be increased by use of modern agricultural equipment; Awareness among the farmers Group on up-gradation of equipment will go a long way in increasing the productivity and reducing the man power required; Training on organic farming must be organized for the local youth and women. Branding of organic produce must be done in order to create an international brand and promote marketing of such products;
	Floriculture, horticulture and fruit processing (medicinal and aromatic plants, sericulture and horticulture and forest based products such as Ringal (Dwarfed Bamboo))	Create conditions to extract and process these plants for commercial purposes on an extensive scale; the farmers should be provided with the planting seeds at marginal rates and proper training should be provided to the herb collector for safe harvesting of endangered and rare species. Setting up of processing centers is also a necessity. Imparting training to the youths with technical and scientific know-how related to agriculture is an urgent need. An Agriculture Training center in the District must be set up to create awareness among the youth and farmers about sustainable agricultural practices. Creating a platform for the interaction between the farmers and researchers on a regular basis will keep the scientists aware of the ground realities and look for practical solution of farmers' problems. There is a need of fruit processing and post-harvest technology training centres.
	Animal Husbandry (potential in poultry farming, piggery and sheep rearing)	There is a scope to establish milk processing units and poultry farms. Youth and farmers can be trained on managing such establishments, supply chain and marketing of products.
	Textile units	District administrative should take initiatives to promote the growth of textile and woolen units through primary contract with such reputed companies.
Nainital	Hospitality and Tourism-immense scenic and cultural attractions - inflow of national and international tourists	Emphasis should be on training on soft skills of the youth to ensure quality workforce in the tourism and hospitality sector; Training on food craft should also be imparted, if not a 3 year diploma course, at least a 1 year specialized course can be introduced on the subject; International standard training in hospitality and tourism management is required at all levels i.e. hotels, tour operators etc.

Name of the District	Growth Sectors	Support required
	Professional Services	Focus on courses such as English Speaking, Personality Development, Computer/Internet skills, Training/coaching centre's for competitive examinations such as Engineering, UPSC, Law, Medical will help create job opportunities for the youth within and outside the District.
Almora	Horticulture- Lot of scope in flower plantation, cash crops, bee keeping and fruits/ vegetable plantation	Training on off season vegetable production can be done to ensure round the year production. Food processing training can be provided to unemployed youth to reduce migration, while providing avenues for employment and income.
	Agriculture- high scope of organic cultivation- especially of popular local products like 'Madna', 'Lal Dhan', 'Gahat', 'Kala Bhat', 'Broccoli'. Additionally three blocks in the District are very well known for spices	Skill development of SHGs in areas like business development, organic farming, value additions, collective farming, marketing and packaging skills
	Khadi and Handloom- the District is well known for its Khadi and Handloom products	Designing skills for 'khadi' machines Jackard technology for weavers Marketing skills for management Entrepreneurship development for small artisan clusters- market linkages and product enhancement
	Tourism- not tapped- potential to tap cultural heritage and bio-diversity	Promotion of tourism required at an institutional level in an all-round way.
	Forest products: 53,000 hectare area under forest	Medicinal plant plantation- processing, grading and marketing; Wood and Bamboo products development skills; Marketing of minor forest products like seeds and flowers
	Soft Skills, Computer skills and other trainings – limited opportunities	English Speaking, Computer Training and Personality Development, Nursing, Banking, UPSC; Fashion designing and Hotel Management.
Pauri Garhwal	Horticulture	Commercial production practices and methods, machine operators for packaging and branding, Marketing, Logistics management
	Herbiculture	Commercial production practices and methods, machine operators for packaging and branding, Marketing personnel's, Logistics management
	Food Processing	Machine Operator, Packaging and Branding, Packaging, Market

Name of the District	Growth Sectors	Support required
		Linkages, Logistics management
Udham Singh Nagar	Automobile	CNC Machine Operators, Turners, Electricians, Painters, Welders, Mechanics.
	Agri Allied Industry/Food processing	Machinist, packaging, branding and other supervisory functions.
	Herbiculture	Commercial production practices and methods, machine operators for packaging and branding, Marketing personnel's, Logistics management
	IT Industry	Hardware and Software training.
Uttarkashi	Wool Rearing: The District boasts of the highest number of livestock in the State; wool rearing has huge growth potential.	Skill development in the mechanized production of wool especially shearing, carding, and cleaning activities; For resource based industries training on wood carving, design, and marketing the final products.
	Horticulture: Apples	The farmers and youth can be trained on setting up, managing apple orchards and marketing their produce to bigger retailers or wholesalers in the metropolitans. Training on value addition through agro-food processing to produce apple cider, jams, juices etc. can be done.
	Adventure sports, ecotourism; religious tourism to Yamunotri and Gangotri.	Skill development in the areas of sports and adventure tourism - rock climbing, parasailing, and snow skiing; scope to develop soft skill to those involved in hospitality sector- travel agencies, front office staff, waiters, restaurant and hoteliers. The Nehru Institute of Mountaineering is the only training centre in the entire State which also has limited capacity. The Government can think of opening similar institutes in other Districts
Tehri Garhwal	Horticulture and Floriculture: spices and condiments; organic farming as organic products have parallel market; floriculture - District is route to religious tourism and provides potential for growth in floriculture business.	Training on horticulture and use of HYV seeds, farm inputs, use of modern farm equipment's and techniques for organic farming can be introduced in the District to increase the scope and scale of horticulture. Training on Bee keeping and poultry farming can also be introduced.
	Wool and hosiery processing	There is scope to provide training on spinning activity for wool processing to help generate gainful employment.
	Food and agro-processing industry: (fruit pulp sauce,	Training on value addition and management of food processing can be provided to the youth.

Name of the District	Growth Sectors	Support required
	ketchup, pickles, puree, grains & cereals);	
	Hospitality and Tourism	Training on soft skills to intermediate and college going students
	Automobile repair service station; electronic and general household repair service centers; tourism and hotel industry (tourist guide, front office boys, waiters, cook/chefs)	Skill development and upgradation in automobile repair and household electronic service should be conducted across the District.
Dehradun	Cash based crop- orange, pear, and vegetables; Floriculture - Gladiolus, Indian red roses, and Lily	Skills development required in carrying floriculture and horticulture farming. Training required in the areas of integrated farming and building market linkages.
	Pharmaceutical; electronic assembling units; food processing; packaging; handicraft; ayurvedic and cosmetics.	Require training on specific trade related activities- fitter, electricians, mechanic on latest machines and technology used by the industries.
	Demand of electrician, fitters, welders, mechanic by industries; plenty of opportunities in religious and nature tourism.	Insurance agents, retail business, hospitality, and banking. Skilled development work can be carried by offering short term course from ITIs; provide exposure to ITI students on latest machines used by the industries.
Haridwar	Agriculture and Dairy : 52.06 percent of the area is covered with sugarcane; Value addition down the value chain of sugarcane has growth potential;	Training required on commercial processing of sugarcane, and different types of value addition that can be made out of sugarcane.
	Animal Husbandry and Commercial Dairy: Haridwar has recorded 191403 cows, 33 AI facilities, 253 milk societies,	For animal husbandry there is huge requirement of veterinary doctor and scientist in KVG. Training is required on fodder management, shade installation, AI, and upkeep of health and hygiene of animals.
	Industry: The District has SIDCUL industrial area hub. Big companies like ITC, Havells, Hero Honda, Cello etc. are based out this area.	Training on latest CNC operated machines is essential in the District along with focus on provide industrial exposure and hands on experience to ITI students on the know-how and functioning of latest technology being used by the industry.

5. Recommendations and Action Plan

The analysis presented in the preceding sections identifies some areas where skills can be imparted. Secondary data analysis shows that the top 6 sectors that are likely to require skilled people in order of priority are manufacturing; tourism, hospitality and Trade; Agriculture and allied services, Education, Construction and Transportation and warehousing. In addition, primary research has further identified requirements of people which help to identify areas for skill development more specifically.

Before discussing the recommendations the following realities about the State need to be taken into account:

- The literacy levels of the population are high but non availability of livelihood options are compelling people to migrate to other Districts/States/countries.
- Majority of its population (75 percent) is still dependent on agriculture but due to small and scattered landholdings productivity of agriculture is not high. Traditional agriculture does not seem to be the lead sector in the coming years.
- As a result of migration from the hilly areas, women play a significant role in engaging in agriculture. Therefore the gender aspect especially for developing the primary sector gains importance.
- Uttarakhand was the first State to declare itself an organic State. An Organic Board was also formed to promote organic farming. This a USP of the State which can be further strengthened.
- The local economy is mostly dependent on the plains and the neighboring States, which makes the people in hilly Districts less self-reliant.
- Despite, progress made the infrastructure is not very well developed. Since availability of good infrastructure provides an enabling environment, this aspect warrants greater attention.
- There is a perception that the existing training institutes, the ITI s in particular, lack mountainous specificities.
- There is abundance of aromatic and medicinal plants. About 175 species have been identified in the State which is indicative of its rich resource base which can be leveraged.

These are important aspects to be borne in mind while planning for skill development. The recommendations have been categorized for different stakeholders who would have the responsibility or mandate towards skill development.

- ▶ Government of Uttarakhand;
- ▶ Training providers;
- ▶ Industry and;
- ▶ NSDC

5.1 Government

5.1.1 Strengthening the Institutional Mechanism

In order to consolidate its existing State level activities and approach the issue of skill development in a consolidated and comprehensive manner, the Government has formed a society called Uttarakhand Skill Development Society ('USDS').

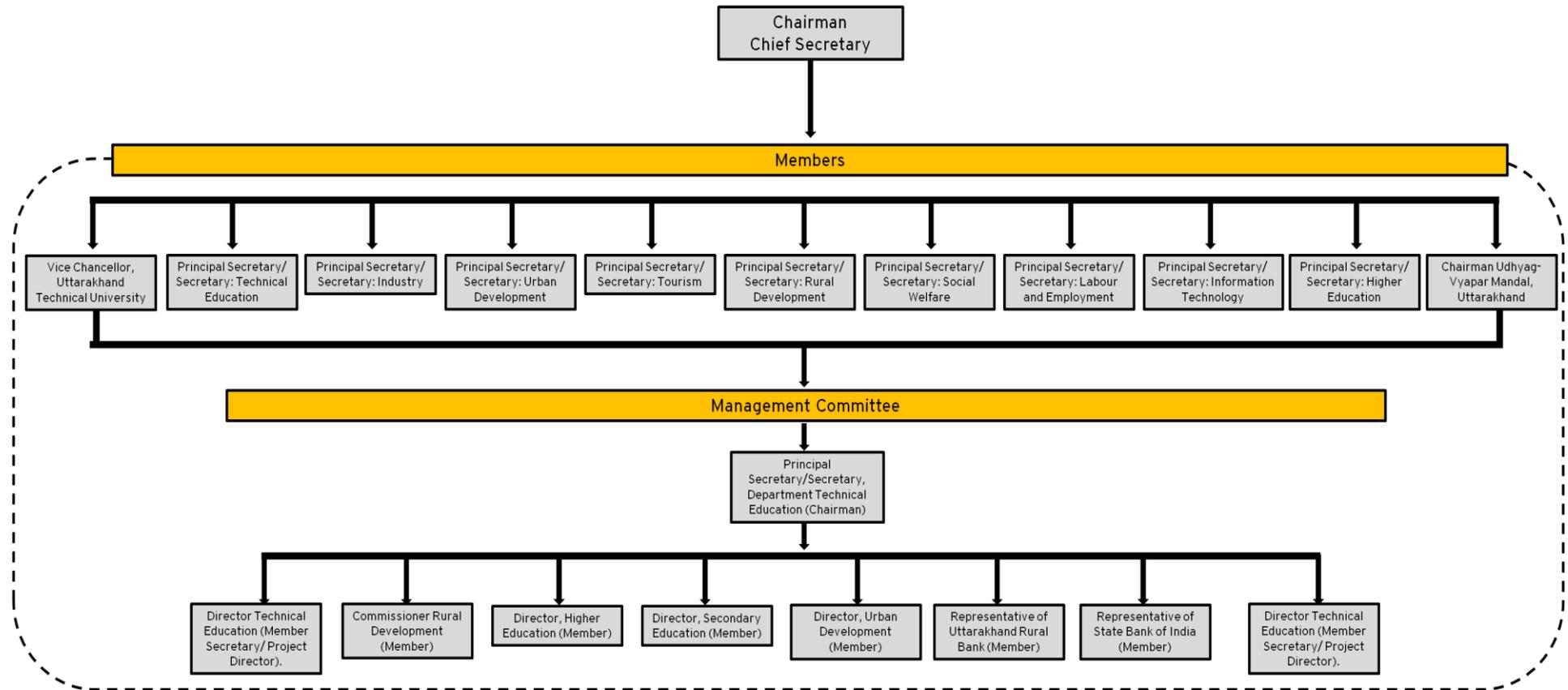
The Objectives of USDS are as follows:

- ▶ To promote development of skills as laid down under the charter of the National Skill Development Mission;
- ▶ To organise capacity building programmes for skill development programmes;

- ▶ To collaborate with the National Council on Skill Development (NCSD), National Skill Development Co-ordination Board (NSDCB), and National Skill Development Corporation (NSDC) with the objective of optimizing resources for rapid and sustained skill development among the people of the Uttarakhand State;
- ▶ To co-operate with other departments and educational institutions in the State and/or any part of the country having objects wholly or partly similar to those of the society by in such manner as may be conducive to their common object;
- ▶ Create and support infrastructure both physical and human for facilitating a pool of resource persons for skill development in the State;
- ▶ Priority shall be accorded to imparting skill development training and upgrading skills of Self Help Groups active in State;
- ▶ To establish Skill Development Cell (SDC) in State capital and Skill Development Training Centres (SDTCs) in various parts of the State;
- ▶ To conduct and support Research and Development in the Skill Development Sector to learn from innovative and emerging trends globally for improving livelihoods;
- ▶ To develop and support projects on Skill Development in traditional as well as sunrise sectors;
- ▶ To document and evaluate existing training / skill development and vocational training programmes and recommend phasing out of out-dated programmes and to introduce new trades;
- ▶ To evaluate skills of existing trainers and arrange for upgrading/ re skilling through Training of Trainers (TOT) programme;
- ▶ To organise and support special capacity building programmes for the physically and mentally challenged persons;
- ▶ To sponsor identified persons/ groups, including SHGs, for special capacity building programmes outside the State in India and abroad;
- ▶ To employ persons qualified to perform functions to enable the society to achieve its aims and objectives;
- ▶ To accord a high priority to skill development programmes for weaker section of State as well as women's economic development programs;
- ▶ To accord priority to skill development and capacity building in new and emerging sunrise sectors;
- ▶ To aim at improving livelihoods by enhancing earning capacities through skills development;
- ▶ To promote SHGs particularly Women-led SHGs;
- ▶ To arrange for dissemination of technical know-how in respect of the industries, trade and business as necessary;
- ▶ To frame the first rules and bye-laws of the Society with the approval of the State Government. The society may from time to time make new or additional rules or may amend or repeal the rules with the concurrence of the State Government;
- ▶ To take such action incidental, ancillary or conducive to the attainment of the object Stated above or any other similar object, as per requirement prescribed by the National Council on Skill Development and the Government of the Uttarakhand.

The functions outlined above are quite elaborate. An institutional mechanism has been created to operationalise the Society. The structure is as follows:

Institutional Structure of Uttarakhand Skill Development Society



It is quite advantageous that the institutional mechanism to promote skill development in a comprehensive manner is already in place. As next steps, the following suggestions maybe considered by the State Government.

1 The core functions of **USDS** may include the following:

- It should be developed as a one stop shop for skill development from where all related information related to schemes, training providers can be accessed. It will also have a Labour Management Information System (LMIS) which will provide more specific information related to availability of skill sets in different Districts.
- Develop a five year perspective in developing eco system for skill development based on existing policies, capacity for skill development and identified gap areas. Follow it up with annual plans and allocate adequate human and financial resources.
- Strengthen partnership among NGOs, private agencies, education institutions, training providers and NSDC. Also define the expected role of these institutions in the overall implementation and monitoring of activities;
- Bring about convergence between USDS with other State Government Departments and Authorities working on livelihood and entrepreneurship development;
- Quality control of the training imparted by different stakeholders.

2 **Programme Design:** Skill development should be seen in conjunction with school education and livelihood promotion. Although the strategies required to strengthen these areas would be different but these are part of the same continuum, therefore need to work in close coordination with each other. The programme design should incorporate the following elements :

- Pre skill development stage : Awareness creation at the school level, camps for information dissemination and assessment for aptitude
- Create a panel of vocational training providers who can be engaged at a short notice whenever a need is identified.
- Strong linkage with livelihood programme – self-employment, employment and entrepreneurship.
- Employment Exchanges to be revamped so that these become a hub of interaction between job seekers and job providers; set up information kiosks providing real time information about availability of jobs, sources from where resources can be mobilized for self-employment or setting up an enterprise.
- Create institutional mechanism at the State as well as District level to roll out the skill development programme and strengthen the eco system at both levels.
- Make use of technology to increase the outreach especially to remote areas and where there is shortage of faculty.

3 **Oversight & monitoring mechanisms:**

- Identify the information needed at various levels within the society and accordingly design the Management Information System to capture and consolidate the information. The quality of available data has scope for improvement. It will help in evidence based planning.
- Create District Level Coordination Units (DLCU) to strengthen the field level ownership, implementation and monitoring and reporting. Suggested structure of DLCU along with indicative roles and responsibilities have been provided in the table below:

Structure	Roles and Responsibilities
<p>Headed by : District Collector</p> <p>Represented by (at each District):</p> <ul style="list-style-type: none"> • District Education Officer; • District Labour Officer; • All BDOs of District; <p>Supported by (at each District):</p> <p>2 Monitoring Officer 1 Career Counseling Officer 1 Marketing Officer 1 Community Mobilization Specialist</p>	<p>(i) monitor implementation of both, the secondary education and skill development components at the District and block levels,</p> <p>(ii) provide feedback to the DMs and solicit his/her help as required,</p> <p>(iii) coordinate with and provide regular updates to USDS</p> <p>(iv) facilitate career counseling and awareness building at the community and school levels for effective project implementation, (v) assist with the data collection for the monitoring and evaluation work.</p>

4 Research

Identify some key sectors/trades/issues that have a potential for creating opportunities or pose challenge in implementing the skill development agenda in a comprehensive manner. Some of these challenges/opportunities identified during our study have been provided below:

- Migration is a major issue in the State, however no major research has ever taken place to measure the impact of migration and how skill development courses should be designed to ensure minimum drop out due to migration;
- Handicraft and handloom industry is fragmented across the entire hill Districts. A State wide study on the skilling requirement of value chain for major handloom, and handicraft product should be conducted to understand the existing conditions, and necessary skilling activities that can be imparted.

5 USDS should study the implementation and monitoring techniques adopted/implemented by other States, so that the learning's of those States could be customized and replicated within Uttarakhand. Some of these States are Rajasthan, Madhya Pradesh and Odisha which have already rolled out these institutions.

6 As a roll out strategy USDS may take up any three Districts on a pilot basis and prepare a detailed comprehensive plan skill development plan and an operational plan for executing the skill development plan.

5.1.2 Set up of multi-purpose centers for skill development

One common observation made by a number of respondents was that the training programmes do not have hilly specificities making them dependent on the plains and does not boost their economy. In order to address this issue the State Government may consider setting up of multi-purpose centers in the following areas:

Table 28: Location for setting up multi-purpose centers

District	Multi-purpose Centre	Details
Rishikesh	Food Processing	Floriculture, Aromatic plants, horticulture are areas which have a potential for expanding because of easy availability of raw material. Training in semi and advanced food processing maybe imparted. Some suggested areas: • Post Harvest Technology of fruits and vegetable

		<ul style="list-style-type: none"> • Techniques of food preservation • Quality analysis of food products • Food packaging Labeling • Food laws and regulations • Sorting and dehydration of medicinal and aromatic herbs.
Almora	Handloom and Woolen	Women need support to enhance their existing skills in design development/diversification, use of modern looms, dyeing.
Uttarkashi	Tourism/Mountaineering	Capacity of the existing Nehru Institute for Mountaineering should be enhanced so that more youth can receive training in adventure tourism and other areas where the institute imparts training and it is very well received.

5.1.3 Giving a boost to the local economy in hilly region

Interactions with various stakeholders revealed that that people in the hilly region largely depend on the plains and other States for small requirements of daily living. Several such examples were given of local people having to purchase fodder for animals, confectionery items like bread, biscuits from the plains. Whenever the weather is bad connectivity the supply of goods is affected. It will go a long way if the existing schemes are used to provide training in areas like confectionery, hospitality to run *dhabas* hygienically, toiletries, packaging material etc. which help them in their daily lives.

In addition a comprehensive training should be offered to the youth for the primary sector. It was shared that imparting training in animal husbandry has not been too successful since the trained persons are not able to find employment or adequate returns when they are self-employed. Giving an integrated training to them in areas like para vets, poly house construction, nursery set up, irrigation management, rainwater harvesting will increase the employability of youth. This will also be a very good option for creating employment opportunities for women.

5.2 Training providers

Training providers can play a role by responding to request for training or taking a proactive role by identifying opportunities for imparting training. Many-a-times training providers find it difficult to source students usually because courses offered do not take into account their aptitude or lack of preparedness for the jobs offered subsequent to the training. The training providers need to have a better connect with the communities to understand what they want and at the same time gradually gives them exposure to new avenues. Some of these areas in which the training providers can intervene are as follows:

- ▶ Reach out to youth by way of melas/camps for career counseling and guidance to ensure they have adequate knowledge of the different trades available to him/her based on their education qualification, growth opportunities within and outside the State to ensure there is minimum training dropouts;
- ▶ Effectively capture and communicate the aspirations of youth groups to the Government so that need based skill development plans or area specific courses could be developed and implemented by the Government;
- ▶ Develop special up-skilling and behavioral training programs for the existing trainers of the ITIs and polytechnics. The ex-service men can be a very good resource to be tapped in the State as faculty at the ITI s and Skill Development Centres;
- ▶ While training centres with capacity for large student intake should be developed, keeping in mind the terrain of the State where large size villages are not very commonly found, opportunities should be created to increase the outreach of programmes to hamlets and small villages by

setting up mobile/temporary skill development centre at the block/village level to ensure that need based customized trainings could be organized for women and local youth.

- ▶ Liaison with Government to use their vacant buildings at the block/village level as skill development centers in public private partnership.

The USDC would be the overarching body to facilitate the training provision by the training providers to ensure that there is no duplication of efforts and quality if maintained. Some growth sectors, mapped against the Districts with possible areas for skill development are given in table 29. This may be helpful to guide the vocational training providers.

Training providers can focus on all three segments of vocational training.

Table 29: Focus sectors for training providers

Segment	Target Sectors for Skill Training	Districts
B2G	Agriculture and allied services, Food processing	Pauri Garhwal, Almora (aromatic plants), Haridwar, Chamoli
B2B	Construction, Transportation	Haridwar, Tehri Garhwal, Dehradun, Nainital
B2C	Manufacturing, Automobile	Haridwar and Dehradun

The B2G segment would relate to those areas where they would receive significant support from the Government. They would associate with the Government in implementing the existing schemes. Integrated farming is an area that needs to be explored due to the fact that being hilly areas, landholdings are small and it is also not possible to engage in dairy farming at a scale. However, a little bit of all these areas would give better returns to people. Therefore training in dairy farming, construction of poly houses, para vet/ para agri services would be useful for the farmers especially women. Cultivation of aromatic plants is an area that has significant growth potential.

Under the B2B segment, the training facilities need to be upgraded to meet the rise in demand for drivers as well as skilled persons required for the construction sector – plumbers, masons etc. This is relevant for the private companies which recruit for their respective industries and require skilled human resource.

A higher level of training would be required under the B2C segment for the automobile and manufacturing sectors. The content of the training, placements and upgradation of infrastructure are areas where vocational training providers can play a role. The PPP scheme for the ITI s is already in place. The private sector can associate with the same to make it more effective. A more detailed mapping of sector wise and district wise needs identified by the respondents is given at the end of this section in Table nos. 33 and 34 which would be a useful starting point.

5.3 Industry

The report has outlined a number of areas where the industry can intervene and set up their units. The key role that the industry can play is by associating with the existing training institutes, helping in upgrading the courses and providing opportunities for hands on training to the youth. Some suggested areas maybe:

- ▶ Offering opportunities for Apprenticeship. This is especially relevant for those areas where there is limited or no presence of industry.
- ▶ Engage and support the training providers in developing curriculum as per industry specific requirements/norms,

- ▶ Further improvement in quality of training in formal training institutes. Some suggested areas of intervention are active participation in SCVT, faculty development; articulation of industry requirements so that courses maybe designed to meet their requirements.
- ▶ Industry players should actively participate in setting up Sector Skill Councils to complement the existing vocational education system as per industry's requirements;
- ▶ Align the existing Corporate Social Responsibility activities with the State skill development mission
- ▶ Develop MIS to provide data related to employment opportunities and skill requirement

The study has identified 6 priority sectors (refer to table no 30) which are likely to have more growth than the rest.

Table 30: Priority sectors having potential for growth in future

Sector	Support from Industry
Manufacturing	<p>Play an active role as part of the State Committee for Vocational Training in deciding the curriculum and design of training programme</p> <p>Offer trainers to the ITI s and Polytechnics and create opportunities for visits to the manufacturing units to increase level of awareness of students about the latest technology</p> <p>Offer opportunities for apprenticeship to students at the ITI s and Polytechnics</p>
Tourism	Offer short term courses for the youth in different facets related to hospitality – tourist guide, housekeeping, cooks, running <i>dhabas</i> hygienically, and interpreters.
Agriculture and Allied services	Support the Government to design the curriculum for food processing and associated skills to be offered at the training centres
Education	With the new enactment of Right to Education and expansion of <i>Rashtriya Madhayamik Shiksha Abhiyan</i> , the requirement for teachers will grow. Since quality is an issue with the education sector there is a need for good quality teacher training programmes for which the private sector can enter into public private partnership
Construction	With expansion of the manufacturing sector, skilled people would be required to create infrastructure that would include, housing, urban infrastructure, roads etc. for which skilled people would be required. The industry could help in setting up a Training Centre where associated skills maybe imparted.
Transportation and Warehousing	<p>The terrain of the State is hilly and at times road travel is risky. Good quality drivers are required for driving passenger buses as well as heavy vehicles. The Sector Skill Council can help in laying down competency standards for training of drivers.</p> <p>Since manufacturing is likely to grow in the State skilled workers will be required for transportation of goods as well as for warehousing and logistics. Industry may support training programmes in these areas.</p>

Our analysis also shows that the top five Districts (refer to table no 31) that would have maximum human resource requirement are Haridwar, Dehradun, Udham Singh Nagar, Nainital and Pauri Garhwal. Therefore the industry can focus more on these 5 Districts and support the Government in strengthening training programmes in these Districts in the following specified areas. Although agriculture and allied services would create maximum demand but from the industry perspective, skill training would be required as follows:

Table 31: Top five Districts showing Human Resource Requirement

District	Human Resource Requirements
Haridwar	Manufacturing, Tourism, Education
Dehradun	Automobile, Transportation, Construction and Warehousing, Education
Udham Singh Nagar	Construction, Manufacturing, Food Processing, Education
Nainital	Transportation, Construction, Manufacturing, Tourism and Hospitality; Education
Pauri Garhwal	Tourism and Hospitality; Education

The industry can focus on the above mentioned Districts on priority and extend support in improving the infrastructure, content, classroom transaction and creating opportunities for apprenticeship for students

5.4 NSDC

NSDC will facilitate participation of some sector skill councils like Agriculture, Automobile, Education, and Food Processing to form State chapters of the SSCs. The SSCs will support in developing competency standards and monitor and support training programmes related to their respective sectors. NSDC will also support programmes for skill enhancement of already skilled people but working in an unorganized way such as the weaver community. It will also encourage training providers to impart training in some upcoming areas like processing of products derived from aromatic and herbal plants.

The following action plan is suggested for NSDC:

Table 32: Action Plan for NSDC

Particulars	Suggested Activities
Short Term	<ul style="list-style-type: none"> ▶ Facilitate linkage between existing Sector Skill Councils with some potential sectors like automobile, agriculture and tourism to make sector and State specific plans. ▶ The weavers in the State require training in design development and use of technology at all stages of weaving. NSDC may consider supporting local organizations like Kilmora, Panchahuli to enhance the skills of women. Alternatively it may also collaborate with design institutes like NID, NIFT and IICD to enhance the capacity of local weavers to learn associated skills like pricing, marketing, packaging etc. This may be initiated in Almora.
Long Term	<ul style="list-style-type: none"> ▶ Cluster development- There are about 25 clusters in Almora, Pauri Garhwal, Chamoli and Pithoragarh for aromatic plants. There is an Agriculture Expansion Zone (AEZ) for medicinal plants in Pithoragarh and Uttarkashi. These clusters may be developed by introducing appropriate courses related to the value chain of medicinal plants and forging linkages with the industries.

Table 33: Potential growth sectors in different Districts and skill Requirement

S. No	Growth Sectors	District (s)	Skill development and training
1	Agriculture (including organic farming, farming of herbal medicinal and aromatic plants and Herbiculture)	<ul style="list-style-type: none"> ▶ Bageshwar, ▶ Almora, ▶ Haridwar, ▶ Rudraprayag, ▶ Dehradun, ▶ Pauri Garhwal and ▶ Udham Singh Nagar 	<ul style="list-style-type: none"> ▶ Skill development of SHGs in areas like business development, organic farming, value additions, collective farming, marketing and packaging. ▶ Commercial processing of herbs. ▶ Use of modern agricultural equipment.
2	Floriculture, horticulture and cultivation of cash based crops (such as apple, citrus fruit, walnut, peach, off-season vegetables, forest based products such as Ringal and spices)	<ul style="list-style-type: none"> ▶ Chamoli, ▶ Champawat, ▶ Pithoragarh, ▶ Rudraprayag, ▶ Almora, ▶ Pauri Garhwal, ▶ Utrakashi, ▶ Tehri Garhwal ▶ Dehradun 	<ul style="list-style-type: none"> ▶ Cultivation and process fruit orchards, flowers, and spices. ▶ Training on off season vegetables production should be provided to ensure round the year production and income. ▶ Safe harvesting of endangered and rare species ▶ Aromatic plants – cultivation and processing.
3	Poultry Farming, Dairy farming (potential for production of milk based products like milk, paneer and butter) and Animal husbandry	<ul style="list-style-type: none"> ▶ Bageshwar, ▶ Chamoli, ▶ Champawat, ▶ Pithoragrah, ▶ Rudraprayag and ▶ Haridwar 	<ul style="list-style-type: none"> ▶ Fodder management, shade installation, artificial insemination ▶ Poultry management .
4	Forestry and Waste Land Development	<ul style="list-style-type: none"> ▶ Chamoli and ▶ Almora 	<ul style="list-style-type: none"> ▶ Medicinal farming and processing. ▶ Development and management of nurseries. ▶ Wood carving, bamboo craft and <i>Ringal</i> work.
5	Wool (hosiery processing) and Textile units	<ul style="list-style-type: none"> ▶ Utrakashi, ▶ Tehri Garhwal and ▶ Rudraprayag 	<ul style="list-style-type: none"> ▶ Mechanized production of wool especially shearing, carding, and cleaning
6	Tourism and hospitality Sector, as well as adventure sports immense scenic and cultural attractions - inflow of national and international tourists/ wild tourism	<ul style="list-style-type: none"> ▶ Bageshwar, ▶ Chamoli, ▶ Champawat, ▶ Pithoragarh, ▶ Rudraprayag, ▶ Nainital, ▶ Almora and ▶ Tehri Garhwal 	<ul style="list-style-type: none"> ▶ Training of guides, staff in both hospitality as well as eco-tourism. ▶ Courses on basic mountaineering, rafting, rock climbing, paragliding, and snow skiing. ▶ Wildlife guides and nature interpreters.
7	Handicrafts and handloom products (including the production of mats, baskets, flower pots, fancy bags to leverage on the District's abundant supply of raw material available for these	<ul style="list-style-type: none"> ▶ Bageshwar, ▶ Chamoli and ▶ Almora 	<ul style="list-style-type: none"> ▶ Regular training programmes on use of techniques, technology for craftsmen ▶ Courses on designing skills for <i>khadi</i> machines and Jacquard technology for weavers.

	activities)		
8	Automobile	<ul style="list-style-type: none"> ▶ Udham Singh Nagar and ▶ Tehri Garhwal 	<ul style="list-style-type: none"> ▶ Training for CNC Machine Operators, Turners, Electricians, Painters, Welders, Mechanics. ▶ Skill development and up gradation in automobile repair and household electronic service.
9	Pharmaceutical; electronic assembling units; food processing; packaging; handicraft; ayurvedic and cosmetics.	<ul style="list-style-type: none"> ▶ Dehradun 	<ul style="list-style-type: none"> ▶ Training on specific trade related activities- fitter, electricians, mechanic on latest machines and technology used by the industries.

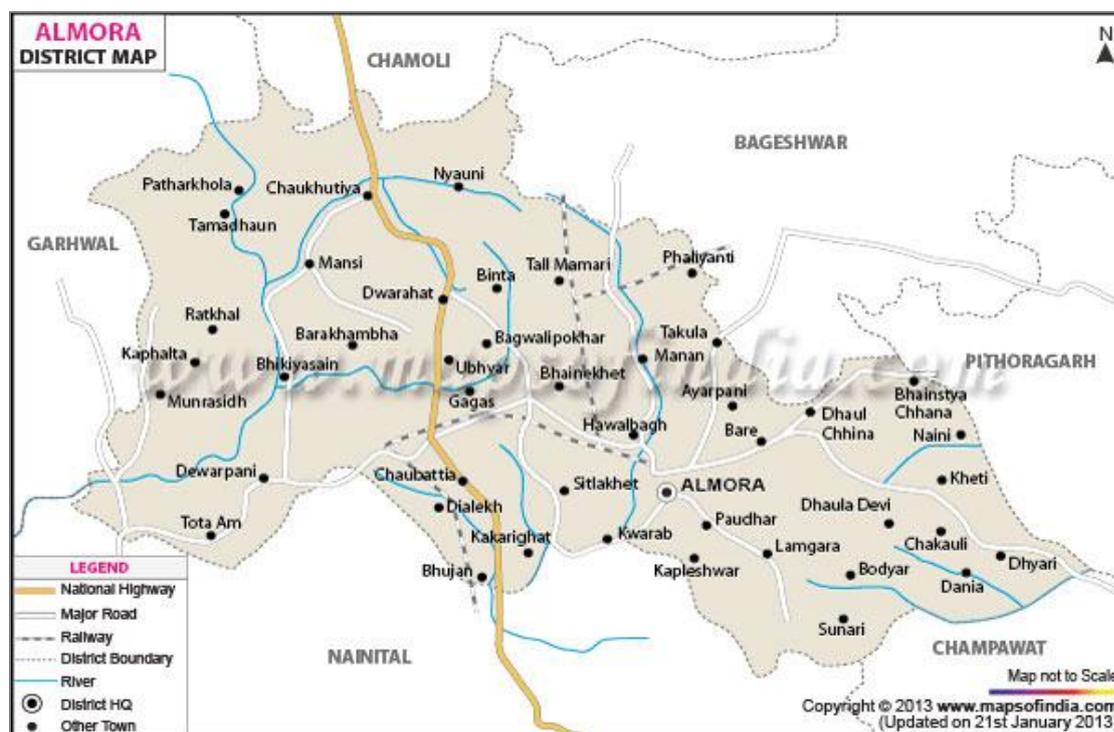
Table 34 : District wise Growth Areas

Name of the District	Growth Areas
Bageshwar	<ul style="list-style-type: none"> ▶ Herbal medicinal and aromatic plants, organic farming. ▶ Poultry Farming, Dairy farming, and Animal husbandry. ▶ Rural handicrafts ▶ Tourism
Chamoli	<ul style="list-style-type: none"> ▶ Adventure sports. ▶ Floriculture and horticulture. ▶ Dairy farm development. ▶ Handicrafts and Handloom products. ▶ Forestry and Waste Land Development.
Champawat	<ul style="list-style-type: none"> ▶ Wildlife tourism ▶ Horticulture ▶ Animal Husbandry ▶ Agro-processing units.
Pithoragarh	<ul style="list-style-type: none"> ▶ Water sports - Kayaking or river rafting, Para gliding, and Hand gliding at gliding points - Chandak, Munakot and Dwaj. ▶ Horticulture - Fruit orchids. off season vegetables; processing and packaging units ▶ Animal Husbandry - Poultry, sheep, and fisheries. Milk products.
Rudraprayag	<ul style="list-style-type: none"> ▶ Tourism and Hospitality , river rafting, bungee jumping. ▶ Organic Farming. ▶ Floriculture, horticulture and fruit processing. ▶ Forest based product especially use of ringal (Dwarfed Bamboo) ▶ Animal Husbandry. ▶ Textile units.
Nainital	<ul style="list-style-type: none"> ▶ Hospitality and Tourism ▶ Professional Education Services

Name of the District	Growth Areas
Almora	<ul style="list-style-type: none"> ▶ Horticulture Floriculture, Bee keeping, fruit orchids, vegetable cultivation. ▶ Organic cultivation- 'Madna', 'Lal Dhan', 'Gahat', 'Kala Bhat', 'Broccoli'. ▶ Khadi and Handloom ▶ Tourism and hospitality sector. ▶ Forest products (53,000 hectare is under forest area). ▶ Soft Skills, computer courses.
Pauri Garhwal	<ul style="list-style-type: none"> ▶ Horticulture. ▶ Herbiculture. ▶ Food Processing.
Udham Singh Nagar	<ul style="list-style-type: none"> ▶ Automobile. ▶ Agri Allied Industry/Food processing. ▶ Herbiculture. ▶ IT Industry.
Uttarkashi	<ul style="list-style-type: none"> ▶ Wool Rearing (Highest number of livestock). ▶ Horticulture –apple orchids. ▶ Adventure sports, ecotourism. ▶ Religious tourism to Yamunotri and Gangotri.

6. District Level Skill Gap Assessment

6.1 Almora



Source: Maps of India

1. Introduction

The District of Almora is spread over an area of 3,090 Sq. Km which forms approximately 5.78 percent of the total geographical area of the State. The District of Almora is located in the southern part of Uttarakhand and is bordered by the districts of Chamoli and Bageshwar in the north, Pithoragarh in the east, Pauri Garhwal in the west and Champawat and Nainital in the south. Administratively, Almora is divided into 11 blocks and has a total of 2,289 villages. Topographically, the District is located on a ridge of the Kumaon hills of the Himalaya mountain range and has a mountainous terrain with a heavy forest cover.

Table 35: Administrative profile of Almora

Particulars	Almora	Uttarakhand	Source
Area (in Sq. Km)	3,090	53,483	http://www.Census2011.co.in/Census/state/districtlist/uttarakhand.html
Percentage share of State Geographical area	5.78%	100	N.A
Number of Community Development Blocks	11	95	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWP/DistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Number of Gram	1,288	7,256	National Rural Drinking Water Programme,

Particulars	Almora	Uttarakhand	Source
Panchayats			State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWP/DistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Total number of inhabited villages	2,289	16,793	http://www.Censusindia.gov.in/2011-prov-results/paper2/data_files/uttarakhand/8-adminunit-60-61.pdf

2. Demography

Almora is home to 6.15 percent of the total population of the State and with its 6.22 Lakh inhabitants, it is the sixth most populated District of the State. Almora has witnessed the lowest decadal growth rate in population in the entire State, decreasing by 1.73 percent (2011). Approximately, 89.98 percent of the population lives in rural areas. According to Census 2001, the socially backward classes such as Scheduled Caste ('SC') and Scheduled Tribes ('ST') represent 22.23 percent and 0.34 percent of the District population respectively.

According to Census 2001, the sex ratio in Almora was favorable at 1,145 females per 1,000 males. However, as per Census 2011 (provisional data) there has been a marginal drop in the sex ratio from 1,145 to 1,142, which is still much higher than the State's sex ratio of 963 and India's sex ratio of 940.

As per Census 2011 (provisional data), Almora has a total population of 621,927 of which males and females were 290,414 and 331,513 respectively. There has been a decrement of 1.37 percent in the total population compared to the population as per Census 2001 that stood at 294,984 for males and 37,882 for females. The Census 2011 (provisional data) suggests a population density of 198 in 2011 making Almora the fifth most densely populated District of Uttarakhand.

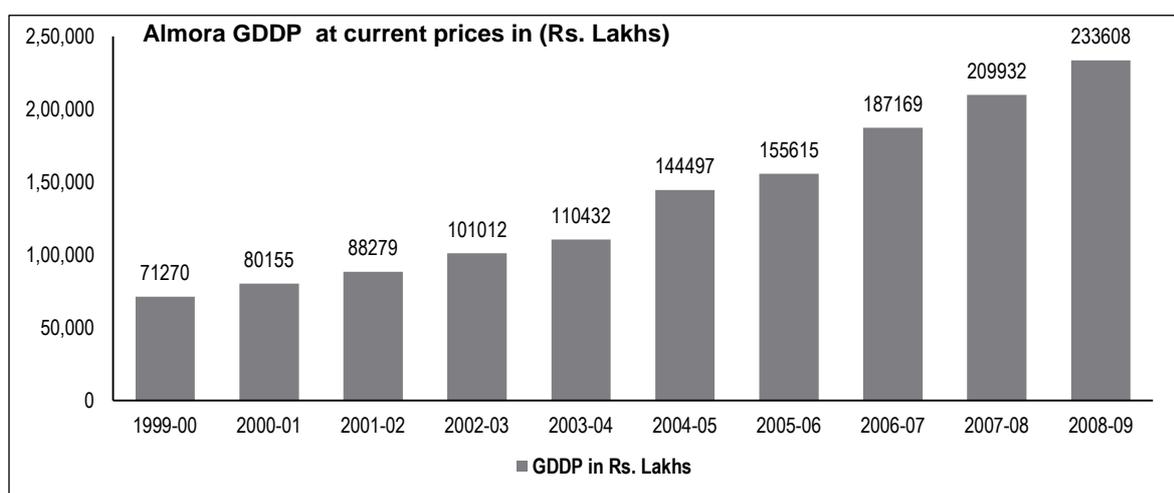
Table 36: Socio economic indicators for Almora

Population	Almora	Uttarakhand	Source
Total population (in Lakh)	6.22	101.17	Census 2011 (provisional data)
Total population (Male) (in Lakh)	2.90	51.54	Census 2011 (provisional data)
Total population (Female) (in Lakh)	3.32	49.63	Census 2011 (provisional data)
District share in State's population	6.15%	N.A	N.A
Density of population	198	189	Census 2011 (provisional data)
Decadal growth of population (2001-2011)	-1.73%	19.17%	Census 2011 (provisional data)
Percentage of urban population	10.02%	30.55%	Census 2011 (provisional data)
Scheduled Caste population percentage of State population	22.23%	17.90%	Census 2001
Schedule Tribe population percentage of State population	0.34%	3%	Census 2001

Population	Almora	Uttarakhand	Source
Sex ratio	1,142	963	Census 2011 (provisional data)

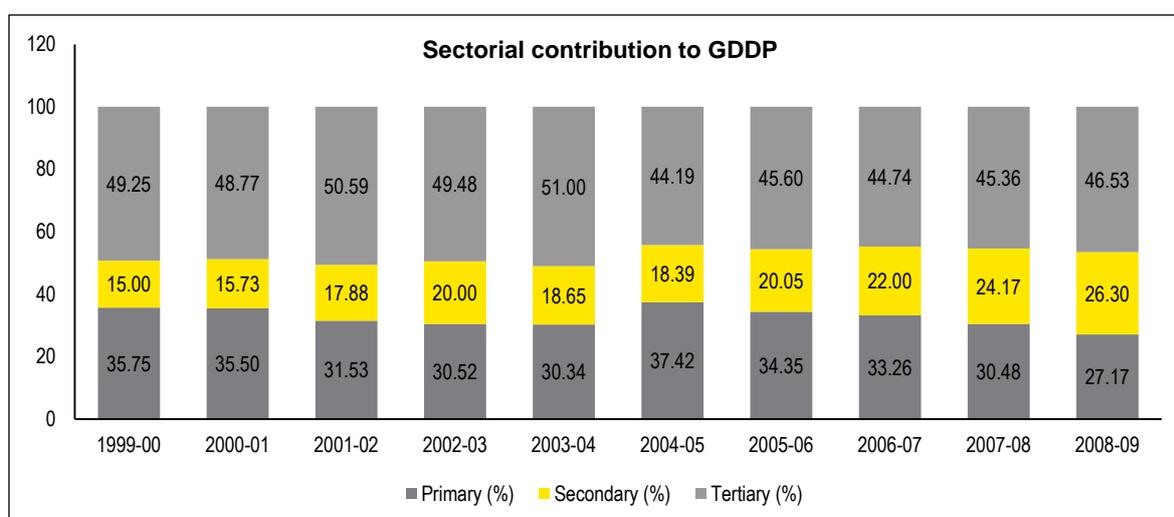
3. Economy

As per the data collected by the Directorate of Economics & Statistics (2008-09), Almora had a Gross District Domestic Product³⁸ of Rs. 233,608 Lakh which amounts to 5.82 percent of the total State GDP. The per capita income of Almora for 2008-09 was valued at Rs. 28,896, which is lower than the State per capita income of Rs. 36,520³⁹



Source: Planning Commission, Government of Uttarakhand

The contribution of various sectors to the GDDP in the year 2008-9 has been 27.17 percent by primary sector, 26.3 percent by the industry sector and 46.53 percent by the services sector respectively.



Source: Planning Commission, Government of Uttarakhand

³⁸ Statistical Diary, Government of Uttarakhand

³⁹ <http://planningcommission.nic.in/plans/stateplan/present/Uttarakhand.pdf>

Primary Sector

Agriculture is the primary source of livelihood for people in the District; however, as cultivable land is less, agriculture is majorly undertaken for sustenance. Currently, out of the total geographical land area of 3,139 square kilometers only 17.11 percent of land is cultivable land. The net sown area in the District is 79,540 hectares. In the upper slopes, grains like millets and *mandua* are mostly cultivated while in the lower slopes wheat is the primary crop with a gross cropped area of 40,367 hectares. Apart from wheat, other major crops include *mandua*, rice, pulses and millets with a total cultivated area of 37,204, 17,970, 6,270 and 17,312 hectares respectively. In addition, Almora has 993 hectares of land under cultivation for oilseeds.

The topography and weather of Almora were noted to be highly conducive for horticulture and allied activities as a large land area of the District is sloping. Tarikhet, Dwarhat, Chaukhutia, Sult, Syaldey and Bhikiasen blocks of the District, are particularly suitable for the cultivation of mangoes, lemons and bananas. Areas 1,200 meters above sea level are also highly suitable for growing winter fruits like apples, pears, plums, walnuts, apricots, almonds; seasonal vegetables and medicinal plants.

Secondary Sector

Almora is connected by road to important cities such as Delhi, Lucknow, and Nainital etc. through a good network of State Highway. The District however does not have railway connectivity. It also has easy access to water sources through rivers Koshi and Sayal.

However, given the decrease in agricultural productivity in the District and high migration of youth, a high potential was seen in the development of small and cottage industries sector. The main industrial activities in this District include wool-based products, flour mills, screen printing, copper products, ready-made garments, hosiery products and mat-making; among others.

Tertiary Sector

In the District of Almora, tourism facilities, allied activities and services have a great scope. Within the tertiary sector services like; hotels/ motels, roadside dhabas, mobile recharge services, cyber cafes, milk parlours, small road transport services (Bus/Taxis), motor garage, tyre retreading, small shops, tour guides and meditation centres etc. are present. Tourism is dependent on such service oriented sector that employs a large number of people. The District is known for religious tourism, eco-tourism and adventure tourism. However, there is a lack of fundamental services related to tourism such as quality restaurants, fast-food centres, motor workshops, and souvenir shops etc.

As a part of its endeavor to promote tourism in the State, the Government of Uttarakhand has initiated the Veer Chandra Singh Garhwal Self-Employment Scheme wherein unemployed youth are provided loans for tourism related service provision.

4. Workforce distribution

The total population of Almora in 2012 was 6.20 Lakhs which is expected to reduce to 6.15 Lakhs by 2017 and further reduce to 6.10 Lakhs by 2022. As per our research methodology, the incremental manpower supply will be about 1.77 Lakhs by 2022.

Table 37: Estimated workforce distribution in Almora

Year	2012	2017	2022
Total population	6,20,844	6,15,455	6,10,112
Working age population	3,85,272	4,09,405	4,35,049
Labour force	2,40,769	3,21,100	4,18,429

Work force	2,34,108	3,08,621	4,06,852
Incremental Manpower supply		80,331	177,659

As per the table 38 below, incremental demand for human resource in 2022 for top five sectors would be in Agriculture (0.21 Lakhs), Education and Skill Development (0.18 Lakhs), Food Processing (0.15 Lakhs), Tourism, travel, hospitality & trade (0.09 Lakhs), and Building, Construction & Real Estate Services (0.07 Lakhs). The demand for semi-skilled and skilled manpower by 2017 would be 0.05 Lakhs, and 0.13 Lakhs. Similar demand for semi-skilled and skilled manpower by 2022 is expected to be 0.07 Lakhs, and 0.19 Lakhs.

Table 38: Incremental Human Resource Demand in Almora

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimal ly skilled	Semi-skilled	Skilled
Agriculture	21,051	7,200	2,057	1,029	7,536	2,153	1,077
Food processing	15,037	4,459	-	1,115	7,571	-	1,893
Metal and Mining	-	-	-	-	-	-	-
Manufacturing	3,751	863	327	486	1,069	405	602
Electricity, Gas and Water	149	50	22	-	52	24	-
Building, Construction & Real Estate Services	7,731	2,733	540	101	3,529	697	131
Auto & Auto Components	438	59	78	46	82	108	63
Tourism, travel, hospitality & trade	9964	1500	1053	1276	2209	1901	2024
Transportation, logistics, warehousing & packaging	5,828	1,441	647	-	2,581	1,160	-
Postal and communication	1,627	-	188	507	-	252	681
Banking, Financial Services & Insurance	966	-	117	315	-	144	390
Real estate and Banking services	931	348	69	13	406	80	15
Public administration	1,224	125	399	65	134	430	70

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimal ly skilled	Semi-skilled	Skilled
Education & Skill Development	18,981	-	-	7,477	-	-	11,504
Healthcare	1,645	-	(200)	919	-	331	595
Other community services	814	115	153	115	129	173	129
Others	-	-	-	-	-	-	-
Total	90,136	18,892	5,449	13,463	25,299	7,858	19,174

During both the periods i.e. 2012 -17 and 2017 - 2022, there would be an excess supply of minimally and semi-skilled manpower, which is expected to migrate to the neighboring Districts/States for employment. Based on our stakeholder interaction, some possible areas of skill gap have been provided below:

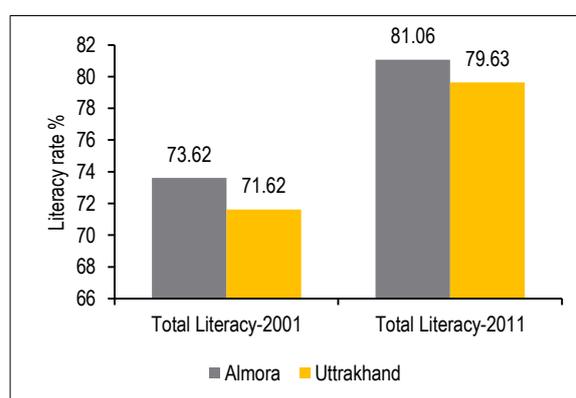
- ▶ Agriculture: Development and management of orchards; use of high-yielding variety seeds; use of vermicomposting, correct of use of pesticides;
- ▶ Food Processing: Lack of training in fruit processing; post-harvest storage techniques; marketing and branding skills; food packaging;
- ▶ Tourism, travel, hospitality & trade: Inadequate training on hotel and hospitality management; tour operators; spoken English communication;

Table 39: Incremental Demand-Supply Gap in Almora

Skill Category	2012-17	2017-22
Minimally skilled	(45,422)	(51,919)
Semi-skilled	(3,033)	(2,921)
Skilled	5,928	9,843
Total	(42,527)	(44,996)

5. State of Education

Average literacy rate of Almora as per Census 2011 (provisional data) is 81.06 percent compared to 73.64 percent as per Census 2001 which is an increase of over 10.07 percent. Gender wise male and female literacy is 93.57 percent and 70.44 percent respectively. For 2001 Census, same figures stood at 89.20 percent and 60.56 percent showing an increase in literacy



Literacy Rates for Almora District

levels for all the groups in Almora, especially girls, over the last 10 years. In terms of absolute numbers, total literates in Almora District were 440,918 of which males and females were 233,748 and 207,170 respectively as per 2011 Census (provisional data).

Table 40: School Education Infrastructure in Almora

Type	Primary		Upper Primary	
	Number	Students	Number	Students
Government	1,456	53,591	410	33,235
Private	243	16,516	85	7,083
Total	1,699	70,107	495	40,318

Table 41: Industrial Training infrastructure in Almora

Type of Institute	Number of Institutes	Enrolment
Industrial Training Institutes	16	704
Polytechnic	6	542
Total	22	1,246

There are 2,220 schools in Almora District (1,827 schools in the rural area & 393 schools in the urban area). The number of children enrolled in primary school (class I-class V) was 68,629 and in upper primary school (class VI- class VIII) was 44,183. There are nine Government Colleges, four Government Polytechnic Colleges in the District and four Government ITIs for Vocational Training Programs in Almora.

6. Youth Aspirations

The assessment team also held discussions with youth groups to understand their aspirations and preferred sectors of employment, wage expectations and willingness to migrate. Our key discussion points have been summarized below:

- ▶ The youth are not inclined towards working in the primary sector;
- ▶ They migrate to other Districts and States to get better jobs and salaries;
- ▶ It was noted that higher education avenues and professional training opportunities are limited in Almora viz-a-viz youth aspirations;
- ▶ Youth expressed a need for more accessible and affordable training especially in nursing, preparatory coaching for banking, and Civil Services;
- ▶ In terms of soft skills, youth were of the opinion that they were at a disadvantage because of poor English speaking and computer skills. It was shared that although English speaking and computer training opportunities are available in Almora town, they are very expensive;
- ▶ The students at the Government Girls Inter College shared that Fashion Designing should be included as one of the courses for women.

7. Development Potential and stakeholder perspective

Horticulture

Since Uttarakhand has been given the status of 'Organic State', horticultural activities are receiving attention. The District Horticulture Officer and the Chief Development Officer ('CDO') shared that the District had further scope in flower plantation, cultivation of cash crops, bee keeping and

fruits/vegetable plantation. While the department is working on the promotion of these potential opportunities, challenges were felt in the protection of horticultural produce. Trainings imparted by the Krishi Vigyan Kendras and Pant University have not been very successful because of insufficient number of trainers and disinterest among the youth.

Destruction of plantations by wild animals including monkeys and pigs was reportedly very common. Due to the loss caused, people were hesitant in investing in such plantations. It was envisaged that the horticulture sector could gain momentum if trainings and thrust is given to off-season vegetable production. For this, training in poly-house production of vegetables is necessary. Also, value addition through food processing is considered crucial. Currently there are no food processing units in the District. Trainings for food processing and packaging along with those in growing/protecting horticulture crops is requisite for tapping the benefits from this sector. For an increase in horticultural productivity, trainings in scientific management of orchards are also needed⁴⁰.

Agriculture

Across the District of Almora, almost 72 percent of the population largely depends on agriculture for their livelihood⁴¹. The main agricultural produce in the District is rice, wheat, maize, millets, lentils and soya bean. Improvement in irrigation facilities, use of modern technology, improvement of water conservation and irrigation infrastructure, use of high-yielding variety seeds, use of vermicomposting, correct use of pesticides and lastly a commercial approach to agriculture; was noted to be imperative for improving the agricultural productivity in the District.

The District had high scope for organic cultivation- especially of popular local products like 'Madna', 'Lal Dhan', 'Gahat', 'Kala Bhat', and 'Broccoli'. Three blocks in the District were renowned for spices. The officers felt that the District could benefit greatly through investment in these organic products especially given the recent popularity of organic food and the promotion of Uttarakhand state as organically producing State. The Department of Agriculture places emphasis on bio-composting for organic cultivation and currently 1,810 hectares of land was under such cultivation. The Department has plans to expand this to 4,000 additional hectares.

Migration of the youth is high in the District which is a deterrent in introducing new cultivation technologies in agriculture. Also, farmers have small and scattered land holdings where it is difficult to achieve economies of scale. Though the department has formed farmer Self Help Groups ('SHGs'), they are scattered given the mountainous terrain of the District. This is an impediment in collectivizing the SHGs for business development and training purposes. The officers were of the opinion that despite its potential, the agriculture sector was unable to achieve its due in economic contribution to the District revenue, due to lack of marketing opportunities. Reportedly, there were no platforms like organized 'mandis' for sale of produce. In terms of infrastructure, there was seen a need to develop mandis and 'Saras Kendra' like facilities in the District.

The department organizes almost 100 trainings annually with fifty people each, at the village level for farmers. Nevertheless, these trainings were primarily on growth techniques and soil conservation; and motivation and extension. A need was felt to train local farmers and farmer SHGs in skills like business development, organic farming, collective farming, marketing and packaging skills.

Forest products

The District has almost 53,000 hectare area under forests. As of now, the people of the District depend on forests mainly for fire wood, fodder, medicinal plants and timber. The Department of Forests is looking at afforestation of cultivable barren land in Ringal, Bamboo, and Bhimal etc. The

⁴⁰ [http://zpd.org.in/sites/default/files/Districtprofile\(2-2-10\).pdf](http://zpd.org.in/sites/default/files/Districtprofile(2-2-10).pdf)

⁴¹ NABARD, Uttarakhand Regional Office, "Potential Linked Credit Plan for XII Five Year Plan (2012-13 to 2016-17) With Specific Reference to 2013-14".

Chief Forest Officer shared that such abundant natural resource have great commercial potential for medicinal plant plantations and production of wood and bamboo based artifacts and products.

To tap forest resources, it was opined that training in processing, grading and marketing of medicinal plants is requisite for the people of Almora. Through such value additions, it is envisaged that a higher value may be received for medicinal plants which are being marketed raw as of now. Also, given the high volumes of wood and bamboo in the region, skills of making wood and bamboo artifacts and products will be beneficial for the people specially since Almora is a tourist hotspot and sale of such locally produced products has a great prospect. Lastly, marketing of minor forest products like seeds and flowers was seen to have potential scope. Marketing and packaging skills of women's groups was shared to be imperative in this regard.

Industry

The District Industries Department is focusing on developing artisan clusters across the District, especially in the handicraft, food processing, candle and incense stick making, and knit-wear making skills. Through its Entrepreneurship Development Programme, the department provides trainings to youth from time to time. However, it is noted that there is a significant gap particularly in terms of developing market linkages and product enhancement in the entrepreneurship development for small artisan clusters. Also, it was shared that most artisan clusters are scattered across the region which is another hindrance to the Programme but the Department is working with the view of organising these clusters for better capacity building, product enhancement and developing marketing linkages for these clusters.

Khadi and Handloom

The District is well known for its Khadi and Handloom products. The District houses the River View Khadi and Handloom Factory of the Khadi & Village Industries Commission of India. Given the niche market for Khadi products, this factory had been showing growth in the past. However, over the years there have been challenges to keep up with the growth pattern.

Major challenges in the promotion of this sector were felt due to redundant technologies in production and little innovation in designs. It was shared that the factory still relied on 'Khadi' machines whereas new improved technologies like 'Jacquardlooms' were in the market. Further, it was shared that the department faces a lack of manpower since the Government was not announcing vacancies and many positions remained vacant. Also, it was reported that the factory faces a lack of marketing platforms. Khadi products were sold only through the shops owned by the Khadi Board which were few and far between.

In terms of training requirements, designing skills for 'Khadi' machines was seen as a priority need for the artisans. Also, both in terms of infrastructure and training, introduction of the Jacquard technology for weavers was noted to be imperative. Also with a view of popularity of the Khadi and Handloom products of the District, the students at the Government Girls Inter College and the Principal of the Government Polytechnic College in Almora shared that Fashion designing was a viable course that should be included in the Polytechnic Curriculum.

Lastly and importantly, for the promotion of Khadi products and sales promotion, training on marketing skills was emphasized on for management of the factory and others in the State.

Tourism

Despite being the urban centre for many neighboring tourist destinations, the potential of Almora's rich cultural heritage and bio-diversity has not been sufficiently tapped. The reason for this is the seasonal nature of tourism in its current form. Given the harsh weather conditions and susceptibility to landslides and earthquakes, tourism was primarily limited to the summer months. However, it was shared that with due investment in tourism promotion and infrastructure development, great value could be achieved through this sector. There are hotels and resorts in the District, however the

standards of hospitality can be scaled up to attract more tourists and generate better revenue. Students at the local Intermediate College shared that there is no opportunity in the District for training in Hotel and Hospitality Management

While it was shared that promotion of tourism is required from an institutional level, it was also noted that to complement such promotion, local level skills in hospitality, English speaking human resources, and tour operations etc. would be highly beneficial.

Based on our interaction with various stakeholders, some key areas which provide skill development opportunity have been provided in the table below:

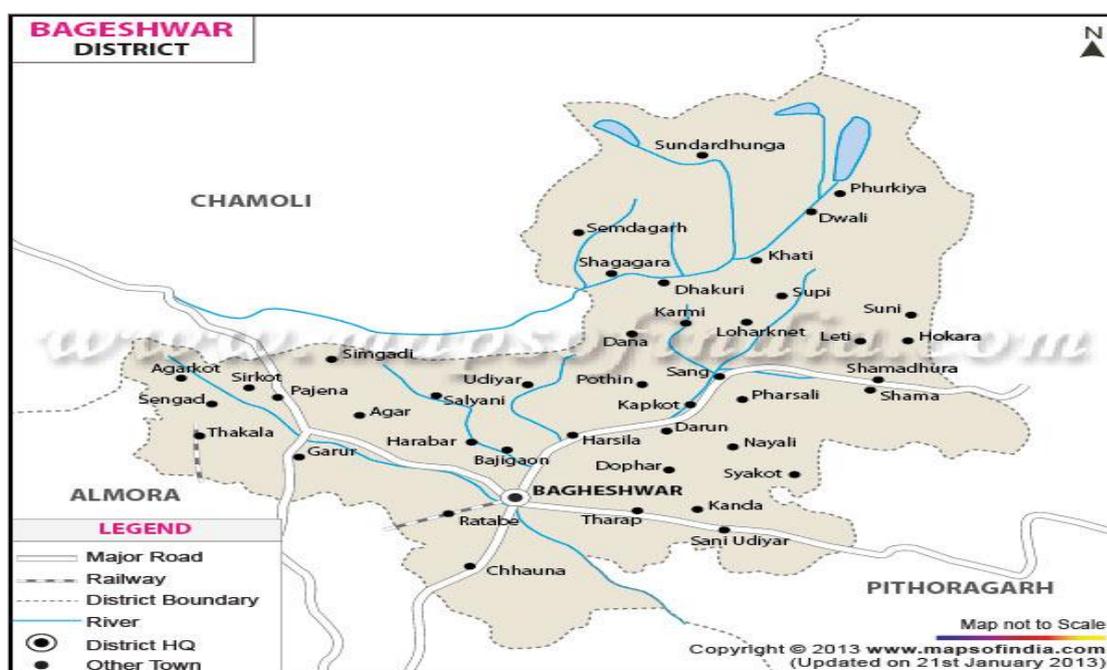
Table 42: Sectors and skill requirement

Sectors	Skill Requirement
Primary	<p>Horticulture: Off season vegetable production training, Food processing</p> <p>Agriculture: Organic farming/Organic commodity growth; Training on value additions and collective farming; Marketing and packaging skills</p> <p>Forest Products: Medicinal plant plantation- processing, grading and marketing; Wood and Bamboo products development skills; Marketing of minor forest products like seeds and flowers</p>
Secondary	<p>Khadi and Handloom: Designing skills for 'Khadi' machines; jacquard technology for weavers; Marketing skills for management</p>
Tertiary	<p>Tourism: Promotion of tourism required from an institutional level; Hospitality for allied tourism businesses like tour and travel operators, bed and breakfast businesses etc.; Hotel Management</p> <p>Professional Services: As higher education avenues and professional training opportunities are limited, Nursing, Banking,</p> <p>Soft Skills: English Speaking, Computer Training and Personality Development</p>

8. Recommendations:

<p>Government</p>	<ul style="list-style-type: none"> ▶ Government to promote quality training courses on promotion of soft skills, spoken English, fashion designing and computers; ▶ Promote herb farming training in the District, given the abundance of raw material and the habitat that can support this industry ▶ Strengthen marketing linkages for processed food, handicraft and handloom and link up with design institutes to provide regular design and training inputs to the artisans; ▶ Provide for the up gradation of the courses, techniques and machinery at the ITI s; ▶ Strengthen industry ties to encourage PPP's in skill development;
<p>NSDC</p>	<ul style="list-style-type: none"> ▶ Support integrated course in tourism at the institutes and colleges that provide training in ticketing, front office management, guides, interpreters, travel planners, running camps; ▶ Support programmes on the re-skilling and up gradation of local artisans and through refresher courses on various new techniques that can help them deliver quality timber products that can be sold in the domestic and foreign markets.
<p>Industry</p>	<ul style="list-style-type: none"> ▶ Promote and facilitate the skilling of artisans for the woodwork industry; ▶ Industries can collaborate with the training providers to develop course structure and curriculum. This space has already been provided to them at the ITI s through the VTP and PPP programmes.
<p>Vocational Training Providers</p>	<ul style="list-style-type: none"> ▶ Training on offseason farming practices, cash crops and organic farming can be provided to the farmers to help generate more income in the year; ▶ Training can also be provided on value addition of the organic commodities and marketing and packaging of locally produced products; ▶ Training courses on designing skills for 'khadi' machines and Jacquard technology for weavers can be introduced with a strong focus on the essentials of marketing and supply chain management; ▶ It is essential to incorporate a component of soft skill training like communication skills, personality development etc. in all courses; ▶ Provide avenues for mass training on communication skills, computers which would enable the unemployed population to be eligible for better job opportunities with better starting salaries.

6.2 Bageshwar



Source: Maps of India

1. Introduction

Bageshwar is a District in northern Uttarakhand. Spread over 2,310 sq. km, the District occupies almost 4.32 percent of the total area of the State. Bageshwar is bordered by Pithoragarh in the east; Chamoli in the west and the Himalayas in the north. The District has a dense forest cover, spread over 47.68 percent of the total District area. The District is divided into three blocks and is home to 947 villages.

Table 43: Administrative profile of Bageshwar

Particulars	Bageshwar	Uttarakhand	Source
Area (in Sq. Km)	2,310	53,483	http://www.census2011.co.in/census/state/districtlist/uttarakhand.html
Percentage share of State Geographical area	4.32%	100	N.A
Number of Community Development Blocks	3	95	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWPDistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Number of Gram Panchayats	377	7,256	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWPDistrictMain.aspx?IState=035&StName=UTTARAKHAND)

Particulars	Bageshwar	Uttarakhand	Source
Total number of inhabited villages	947	16,793	http://www.censusindia.gov.in/2011-prov-results/paper2/data_files/uttrakhand/8-adminunit-60-61.pdf

2. Demography

Bageshwar has a population of 2.59 Lakh and is the eleventh most populated District of Uttarakhand. It is home to 2.56 percent of the total population of the State. It has had a decadal growth rate of 5.13 percent in population. According to Census 2001, the socially backward classes such as SC and ST represent 25.87 percent and 0.78 percent of the population respectively.

According to Census 2011 (provisional data), the sex ratio in the District is 1,093 females per 1,000 males. There is a marginal decrease since the last Census carried out in 2001, wherein the District had 1,106 females per 1,000 males.

The District has a population of 2.59 Lakh of which males and females were 1.24 Lakh and 1.35 Lakh respectively. The Census 2011 (provisional data) presents a population density of 116 in 2011 making Bageshwar the tenth most densely populated District of Uttarakhand.

Table 44: Socio economic indicators of Bageshwar

Population	Bageshwar	Uttarakhand	Source
Total population (in Lakh)	2.59	101.17	Census 2011 (provisional data)
Total population (Male) (in Lakh)	1.24	51.54	Census 2011 (provisional data)
Total population (Female) (in Lakh)	1.35	49.63	Census 2011 (provisional data)
District share in State's population	2.57%	N.A	N.A
Density of population	116	189	Census 2011 (provisional data)
Decadal growth of population (2001-2011)	5.13%	19.17%	Census 2011 (provisional data)
Percentage of urban population	3.50%	30.55%	Census 2011 (provisional data)
Scheduled Caste population percentage of State population	25.90%	17.90%	Census 2001
Schedule Tribe population percentage of State population	0.76%	3%	Census 2001
Sex ratio	1,093	963	Census 2011 (provisional data)

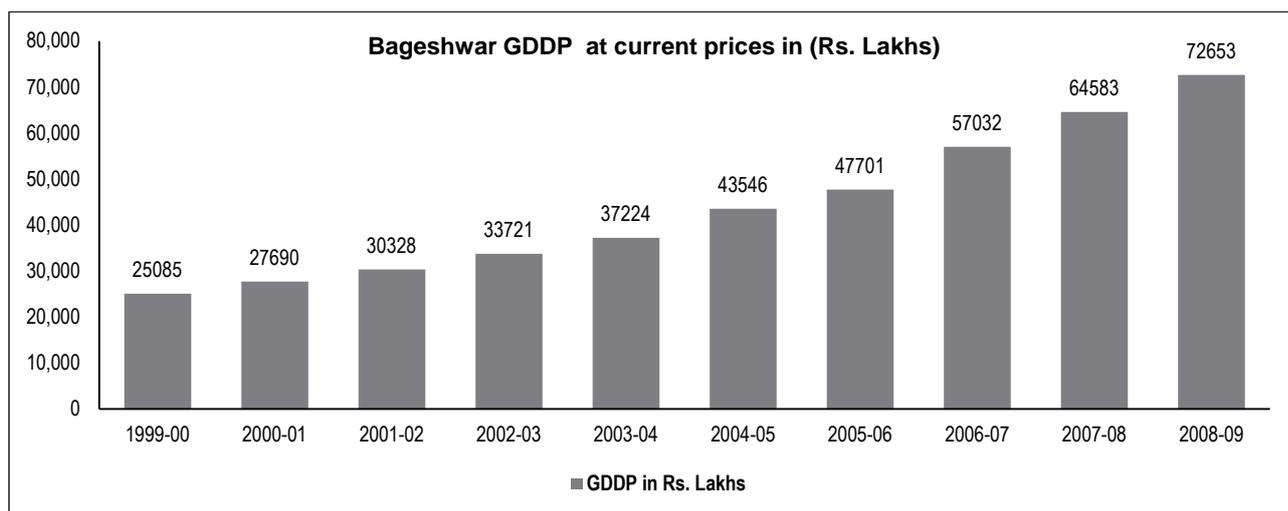
Source: Census 2011 (provisional data)

3. Economy

As per the data collected by the Directorate of Economics & Statistics (2008-09), Bageshwar had a Gross District Domestic Product⁴² of Rs. 72,653 Lakh which amounts to 1.81 percent of the total State GDDP. The per capita income of Bageshwar for 2008-09 was valued at Rs. 22,709, which is

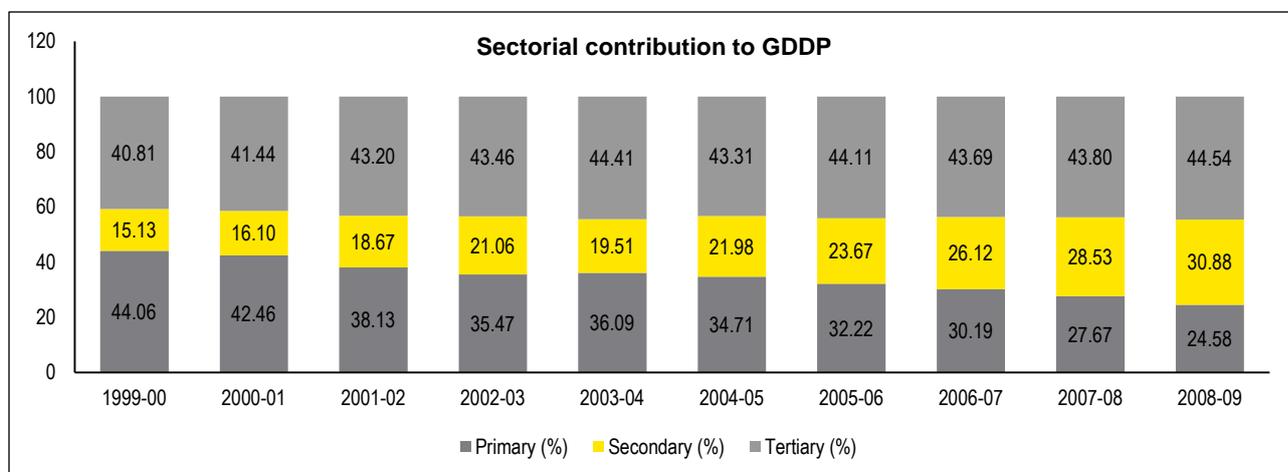
⁴² Statistical Diary, Government of Uttarakhand

significantly lower than the State per capita income of Rs. 36,520⁴³.



Source: Planning Commission, Government of Uttarakhand

The contribution of various sectors to the GDDP has been 24.58 percent by primary sector, 30.88 percent by the industry sector and 44.54 percent by the services sector respectively.



Source: Planning Commission, Government of Uttarakhand

Interaction with NABARD officials revealed the key activities with the following potential for each development block.

Table 45: Key recommendations from NABARD

Block	Important Activity
Bageshwar	Shops, Stone powder and related industries like talcum powder, Copper based industries, woolen based industries like Shawl, Pankhi etc., Resin based industries like Biroja oil, Varnish, Rogan, small oil industries, biscuit, bakery, chocolate, automobile repairing, tire retreading, readymade garments, dairy and poultry farming, hotel/motel, electronics/general repairing, stone crush, cement jail, flower vase etc.
Garude	Biscuit/bakery/ chocolate, wooden/steel furniture, poultry and dairy farming, automobile repair, tea

⁴³ <http://planningcommission.nic.in/plans/stateplan/present/Uttarakhand.pdf>

Block	Important Activity
	processing, fragrances and medicine oil, eco-tourism, hotel/motel, restaurant, transport, resin based industries like Biroja oil, varnish, rogan, and readymade garments.
Kapkota	Shops, stone powder and related industries like talcum powder, copper based industries, woolen based industries like shawl, pankhi etc., Regaal work like tokari, doormat, kandi, parsh, medicine plant processing, biscuit/bakery/ chocolate, wooden/steel furniture, poultry and dairy farming, eco-tourism etc.

Primary Sector

Bageshwar is not considered a highly agrarian District, especially due to the fact that farmers only produce at subsistence level and that agriculture is impeded by the presence of a large number of wild animals venturing into the District. Only 3.035 percent of the total workforce is engaged in agricultural activities.

As per recent data⁴⁴ provided by the District Agriculture Officer ('DAO'), only 16.76 percent of the total geographical area is cultivable. Production is mainly of wheat and rice which is the major crops constituting 14.01 ton/hectare and 14.22 ton/hectare respectively.

Majority of the cultivable land is held by small farmers with scattered land holdings and there is existence of terrace farming due to a hilly geographical terrain. In terms of productivity, the other main crops are Potato, Ginger, Rajma and Pulses. Use of fertilizers is at its bare minimum in the District.

The District also houses a number of tribal's who live in relatively remote areas and are generally involved in production of mats, baskets, flower pots, fancy bags and other low skill jobs. The area has an abundant supply of raw materials for these activities such as Ringal (Dwarf Bamboo) and Oak trees.

Secondary Sector

Due to its hilly terrain, the District fails to cater to large industries, which usually require large flat lands. As per the data provided by the District Industries Center ('DIC') for 2012-13, currently there are 1,067 small industries with investment of approximately Rs. 16.10 crore and approximately 2,005 workers have been employed, details of which have been provided in the table 46 below:

Table 46: Types of Industry currently operating in the District

S.No.	Types of industries	No. of Units
1.	Food & Beverages	265
2.	Ready-made garments & tailoring	157
3.	Wooden products	15
4.	Paper products	1
5.	PCO media	34
6.	Chemical	12

⁴⁴ Data for the financial year 2012-13

7.	Mineral	12
8.	Basic metal	38
9.	Fabricated metal	72
10.	Furniture/Steel Manufacturing	24
11.	Automobile & repair	35
12.	House hold good repairing	219
13.	Telecommunication	32
14.	Other business activities	27
15.	Other services	124
	Total	1,067

Source: DIC Bageshwar

There is a mini industrial estate at Garur block of Bageshwar District. In this estate six sheds have been developed, each with a 70.24 sq. meter area, however four of these sheds are currently vacant.

Tertiary Sector

The location of Bageshwar District is at the confluence of three rivers, the Saryu, Gomti and Bhagirathi. Thus this area is regarded as a holy land, associated with the God Sadashiva who is known to be the redeemer of sins, therefore religious tourism is popular in this region. Apart from the religious tourism, the District also attracts some tourists for the scenic beauty the district provides. As per the Tourist Board, 27 new hotels have been established since the year 2005.

Growth in the tourism sector has been slow over the years. The District is in dire need of investment in infrastructure and maintenance so that the District can not only host more people but also maintain the scenic beauty.

4. Workforce distribution

The total population of Bageshwar in 2012 was 2.61 Lakhs which is expected to decrease to 2.67 Lakhs by 2017 and 2.74 Lakhs by 2022. As per our research methodology, the incremental manpower supply will be about 0.59 Lakhs by 2022

Table 47: Estimated workforce distribution in Bageshwar

Year	2012	2017	2022
Total population	2,61,143	2,67,756	2,74,537
Working age population	1,61,699	1,75,777	1,91,079
Labour force	9,93,47	1,26,194	1,59,286
Work force	9,70,25	1,22,856	1,55,564
Incremental Manpower supply		26,847	59,940

As per the table 48 below, incremental demand for human resource in 2022 in the top five sector would be for Agriculture (0.09 Lakhs), Education and Skill Development (0.056 Lakhs), Tourism, travel, hospitality & trade (0.034 Lakhs), Transportation, logistics, warehousing & packaging (0.032), and Building, Construction & Real Estate Services (0.032 Lakhs). The total demand for skilled semi-skilled and skilled manpower by 2017 would be 0.024 Lakhs, and 0.040 Lakhs. Similar demand for semi-skilled and skilled manpower by 2022 would be 0.033 Lakhs, and 0.056 Lakhs.

Table 48: Incremental Human Resource Demand in Bageshwar

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
Agriculture	9,625	3,290	940	470	3,447	985	492
Food processing	636	187	-	47	322	-	80
Metal and Mining	132	33	12	18	35	13	20
Manufacturing	2,840	659	249	371	804	304	453
Electricity, Gas and Water	45	15	7	-	16	7	-
Building, Construction & Real Estate Services	3,222	1,139	225	42	1,471	291	54
Auto & Auto Components	615	73	96	57	126	166	97
Tourism, travel, hospitality & trade	3423	514	362	438	758	655	695
Transportation, logistics, warehousing & packaging	3,275	800	359	-	1,460	656	-
Postal and communication	233	-	29	77	-	34	93
Banking, Financial Services & Insurance	56	-	7	20	-	8	21
Real estate and Banking services	195	73	14	3	85	17	3
Public administration	410	42	134	22	45	144	24
Education & Skill Development	5,688	-	-	2,241	-	-	3,447
Healthcare	387	-	(47)	216	-	78	140
Other community services	99	14	19	14	16	21	16
Others	-	-	-	-	-	-	-

Total	30,882	6,839	2,407	4,036	8,585	3,379	5,636
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During both the periods i.e. 2012 -17 and 2017 - 2022, there would be an excess supply of manpower in all the skill categories. Most of it will be in minimally skill category. Surplus labour is expected to migrate to neighboring Districts and States for employment. Based on our stakeholder interaction, some possible areas of skill gap have been provided below:

- ▶ Education and Skill Development: Education infrastructure in hotel management, retail trade, banking and financial services, BPO's and KPOs courses/modules;
- ▶ Agriculture: Awareness on High Yielding Variety Seeds; Cultivation of aromatic and medicinal plants; floriculture; fruit processing; inadequate knowledge on modern farm equipment's; use of Bio-Fertilizers;
- ▶ Tourism, travel, hospitality & trade: Adventure tourist guides; nature interpreters; staff in hospitality and tourism management;

Table 49: Incremental Demand-Supply Gap in Bageshwar

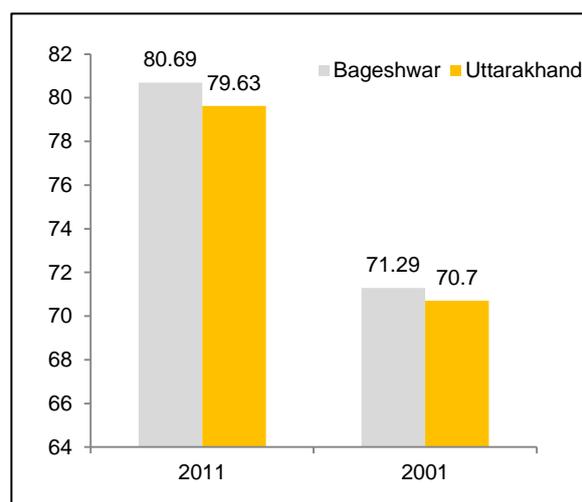
Skill Category	2012-17	2017-22
Minimally skilled	(14,662)	(17,685)
Semi-skilled	(402)	(206)
Skilled	1,499	2,399
Total	(13,565)	(15,493)

5. State of education

The average literacy rate of the District is marginally better than the State's average. The literacy rate of the District according to the Census 2011 (provisional data) is 80.69 percent as compared to 71.29 percent in 2001. Further the gender wise literacy break up reveals male and female literacy at 93.20 percent and 69.59 percent respectively.

There has been a gradual but constant improvement in basic education of the District. As per the provisional District Elementary Education Report Card for the year 2010-2011, 93 percent of the students were able to complete primary education and graduate to upper primary levels. At the primary level, there are a total of 685 schools in the District but only 99 of these offer studies till 12th grade.

Majority of the schools are Government funded and enrollment rate over the last few years has grown. However, only a few schools offer students instruction in English. Enrollment of students belonging to the ST and OBC categories was the lowest for the State.



Literacy Rates for Bageshwar District

Currently there are three Government colleges and one post-graduate college in the District. The post-graduate college offers courses in Arts, Sciences and Commerce. The college also provides Diplomas in Fish Products Technology, Nursery Technology and Orchid Management.

Table 50: School infrastructure in Bageshwar

Type	Primary		Upper Primary	
	Number	Students	Number	Students
Government	612	21,574	187	13,210
Private	92	8,911	33	3,671
Total	704	30,485	220	16,881

There were 3,127 students enrolled in the four colleges in the District as of 2011-12. The most popular choice of studies remains Arts, followed by Commerce and Science in that order. Within Arts, highest enrollment was for Hindi literature, as per Directorate of Higher Education.

Table 51: Industrial Training infrastructure in Bageshwar

Type of Institute	Number of Institutes	Enrolment
Industrial Training Institutes	4	66
Polytechnic	2	153
Total	6	219

Table 52: Student Strength of Government colleges in Bageshwar for the year 2011-12

College name	Status	Year of Establishment	Girls Enrolled	Boys Enrolled	Total
Government Post Graduate College, Bageshwar	Post Graduate	1974	1,545	1,216	2,761
Government Degree College, Kapkot	Graduate	2005	137	58	195
Government Degree College, Kanda	Graduate	2006	50	13	63
Government Degree college, Garur	Graduate	2009	71	37	108
Total			1,803	1,324	3,127

6. Youth Aspiration

The assessment team held discussions with youth groups to understand their aspirations and preferred sectors of employment, wage expectations and willingness to migrate. Our key discussion points have been summarized below:

- ▶ The youth of the District, shared that they are not aware of career counseling and assistance available to them through the Government;
- ▶ Majority of the youth are interested in traditional employment opportunities such as the armed forces or Government jobs;
- ▶ Many, who were aware of newer avenues, were not satisfied with the current VTPs, ITIs and training institutions. They cited issues regarding high fees, poor placements, lack of adequate infrastructure and proper faculty and the type and number of courses offered in these institutions;
- ▶ As per the data from the District Statistical Office, 9.65 percent of population has migrated to other states for employment and other reasons. Evidently, skill requirements with respect to vocational skills need to be enhanced in the District in keeping with the growing industrial demands in the State.

7. Development potential and stakeholder perception

Agriculture/Horticulture

It was shared that migration of men-folk from Bageshwar was high. As a whole, agricultural production in the District can be characterized by low productivity, shortage of inputs and lack of marketing, which is the reason why the District is primarily involved in subsistence production which is not commercially driven. Bageshwar also lacks quality mandis. This hampers the sale of agricultural production, thereby limiting farmers to only sell within the community or harvest for their own purposes.

However, the District has a wide range of flora and fauna that can be harnessed into the primary sector, but the lack of knowledge, skill and training, impedes this potential. Herbal, medicinal and aromatic plants, which can be easily grown in these parts, are not being explored.

The District's potential in horticulture can be tapped through awareness and capacity building on promotion of high-value herbal, medicinal and aromatic plants and produce, through trade fairs, workshops, training programs and educational seminars on the benefits of producing these higher value agricultural products. It is also imperative to build the farmers' capacities to create linkages with retailers in both herbal plants and normal vegetable and agricultural produce.

From an infrastructure point of view, it is important to develop mandis that are competitive and at par with national standards. This can be done through the cluster approach, wherein mandis can be given to certain clusters for their operation and maintenance. Also, development and awareness on extension services, financial services, upgraded production processes and packaging is required.

Tourism

While Bageshwar does attract some tourists, it is primarily only in the religious tourism category. Tourism, mostly domestic, is extremely seasonal and with more popular destinations like Rishikesh and Haridwar, attracts far fewer people than the District has the potential for.

With more effective branding of popular tourist sites (especially in terms of nature/eco-tourism), a more coherent marketing strategy and better hospitality and general infrastructure, the District can become a popular tourist destination. There have been a number of plans that have been initiated by the Government of Uttarakhand for the development tourism in the region. These projects supported by organizations like United Nations Development Program ('UNDP') or World Trade Organization ('WTO') has started only recently, and will take some time to show results.

There is a need for improvement of infrastructure and concepts like wildlife tourism, eco-tourism, adventure tourism, cultural tourism and nature tourism need to be promoted. From a skill development perspective, professional training of staff and entrepreneurs in hospitality and tourism management is required to cater to both domestic and international tourists.

Based on our interaction with various stakeholders, some key areas which provide skill development opportunity have been provided in the table below:

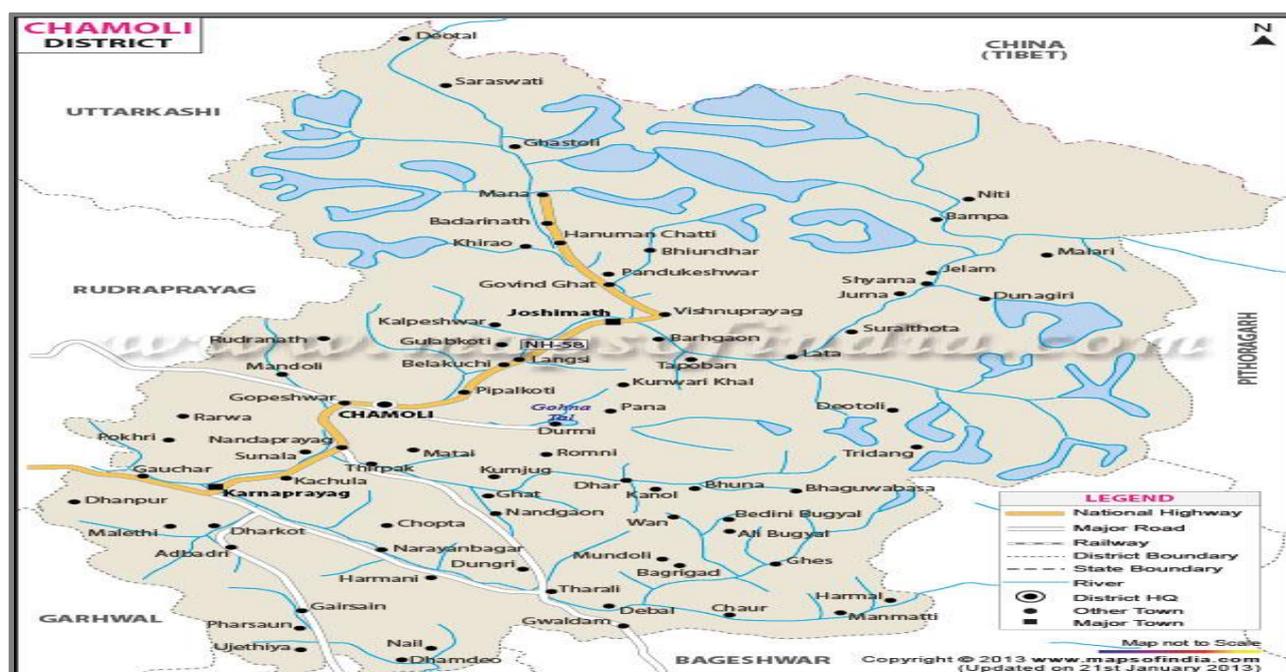
Table 53: Sectors and skill requirement

Sector	Skill Requirements
Primary	Production and diversification in high value products like herbal, aromatic and medicinal plants, promotion through training, educational workshops, trade fairs of organic farming and its advantages and benefits, linkages with retailers, creation of mandis/clusters, performance based subsidies, impart knowledge and training on high yielding varieties or green revolution agricultural products. Creation of fodder lands, veterinarian services, storage and transportation networks.
Tertiary	Potential areas for development are hotel, resorts, repair services for automobiles, adventure sports, establishment of ropeways, denting painting of motor vehicles, body making of automobiles, and tire retreading works.

8. Recommendations

Government	<ul style="list-style-type: none"> ▶ Focus on introducing schemes to promote handicrafts, medicinal herb nurseries and herb processing plants. ▶ Encourage fodder development and provide training on fodder variety, and agronomic practices by leasing the panchayat wastelands to the milk producer's cooperative societies/farmers.
NSDC	<ul style="list-style-type: none"> ▶ Support programme to impart skills related to the processing of aromatic plants.
Industry	<ul style="list-style-type: none"> ▶ Improved involvement of Industry associations from within and outside the District should be encouraged to generate employment and provide placement opportunities for skilled individuals. ▶ Industries can collaborate with the exiting training providers to develop course structure and curriculum. ▶ Given the abundance of natural herbs the pharma industry can train farmers, unemployed youth and women on the processing and packaging activities. ▶ Provide opportunities for on the job training to the youth receiving training.
Vocational Training Providers	<ul style="list-style-type: none"> ▶ Provide avenues for mass training on communication skills, computers which would enable the unemployed population to be eligible for better job opportunities. ▶ VTC in the District should introduce short term training programmes on handicrafts, hotel management related skills including culinary, housekeeping, waiter, bartending etc., ▶ It is essential to incorporate a component of soft skill training like communication skills, personality development etc. in all courses. ▶ Focus to be shifted to practical experience, rather than theoretical knowledge, by increasing the scope and relevance for "On the Job" training.

6.3 Chamoli



Source: Maps of India

1. Introduction

The District of Chamoli is spread over an area of 7,692 Sq Km which forms approximately 14.38 percent of the total geographical area of the State. Located in northern Uttarakhand, Chamoli is bordered by the Districts of Pithoragarh and Bageshwar in the East, Almora in the South, Uttarkashi and Rudrapurayag in the West and Pauri Garhwal in the South-West. It has a common border with China in the North. Its northern border has 3 passes; viz. Mana Pass, Niti Pass and Marhi La Pass. The District has a mountainous terrain with heavy forest cover (59.42 percent of the total area of the District). There are 9 blocks and 1,246 villages in Chamoli.

Table 54: Administrative profile of Chamoli

Particulars	Chamoli	Uttarakhand	Source
Area (in Sq Km)	7,692	53,483	http://www.census2011.co.in/census/state/districtlist/uttarakhand.html
Percentage share of State Geographical area	14.38%	100	N.A
Number of Community Development Blocks	9	95	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWP/DistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Number of Gram Panchayats	562	7,256	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWP/DistrictMain.aspx?IState=035&StName=UTTARAKHAND)

Particulars	Chamoli	Uttarakhand	Source
Total number of inhabited villages	1,246	16,793	http://www.censusindia.gov.in/2011-prov-results/paper2/data_files/uttrakhand/8-adminunit-60-61.pdf

2. Demography

Chamoli is home to 3.86 percent of the total population of the State. With its 3.91 Lakh inhabitants it is the ninth most populated District of the State. It has had a decadal growth rate in population of 5.6 percent. According to Census 2001, the socially disadvantaged groups such as SC and ST represented 18.24 percent and 4.09 percent of the population respectively.

As per Census 2011 (provisional data), Chamoli shows a healthy sex ratio of 1,021 females per 1,000 males, which is much higher than the State's sex ratio of 963 females per 1,000 males. The Census 2011 (provisional data) shows a population density of 49 per sq. km which makes it the second least densely populated District of Uttarakhand.

Table 55: Socio economic indicators of Chamoli

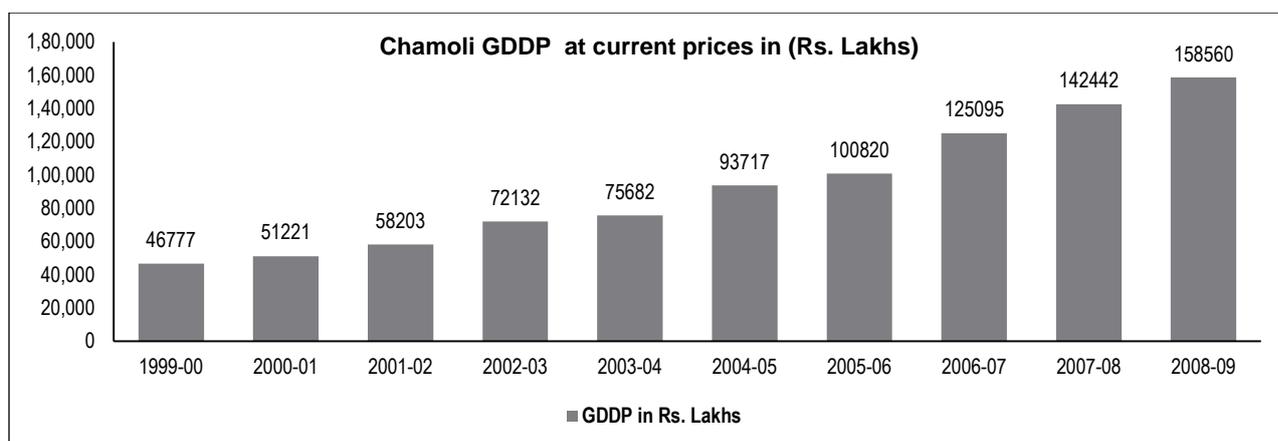
Population	Chamoli	Uttarakhand	Source
Total population (in Lakh)	3.91	101.17	Census 2011 (provisional data)
Total population (Male) (in Lakh)	1.94	51.54	Census 2011 (provisional data)
Total population (Female) (in Lakh)	1.97	49.63	Census 2011 (provisional data)
District share in State's population	3.87%	N.A	N.A
Density of population	49	189	Census 2011 (provisional data)
Decadal growth of population (2001-2011)	5.6%	19.17%	Census 2011 (provisional data)
Percentage of urban population	15.11%	30.55%	Census 2011 (provisional data)
Scheduled Caste population percentage of State population	18.2%	17.90%	Census 2001
Schedule Tribe population percentage of State population	4.09%	3%	Census 2001
Sex ratio	1,021	963	Census 2011 (provisional data)

3. Economy

As per the data collected by the Directorate of Economics & Statistics (2008-09), Chamoli had a Gross District Domestic Product⁴⁵ of Rs. 158,560 Lakhs which amounts to 3.95 percent of the total State DDP. The per capita income of Chamoli for 2008-09 was valued at Rs. 32,038, which is lower than the State per capita income of Rs. 36,520⁴⁶.

⁴⁵ Statistical Diary, Government of Uttarakhand

⁴⁶ <http://planningcommission.nic.in/plans/stateplan/present/Uttarakhand.pdf>



Source: Planning Commission, Government of Uttarakhand

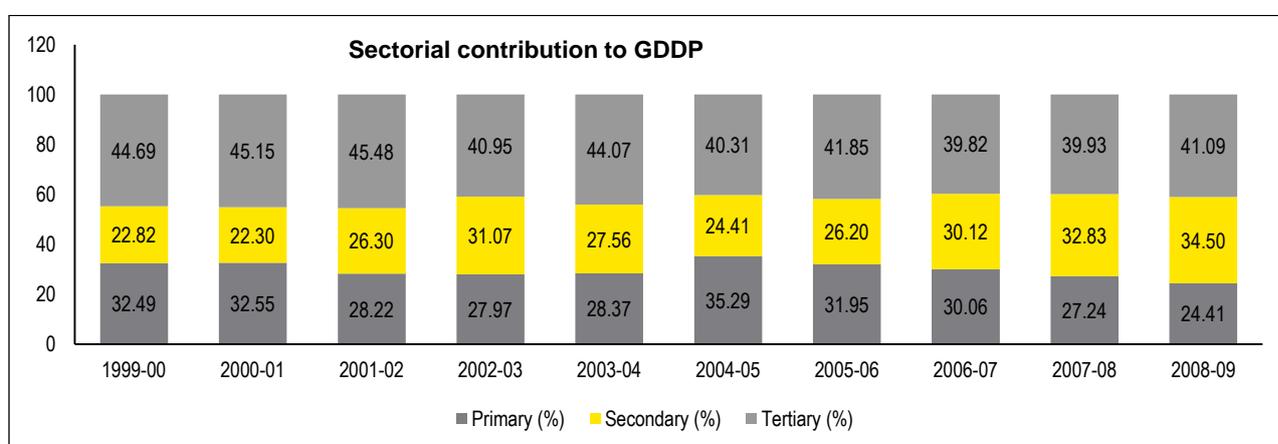
Primary Sector

Chamoli is primarily an agrarian District with 31.31 percent share of primary labour to total workforce. Though about 60 percent of the population depends on agriculture for its economic growth, 90 percent of the farmers are marginal with average land holdings of less than 2 acres. The productivity in the hill region is less in comparison to the plains. The productivity of the cereals is 13.05 quintals/hectare in the District, while it 28.40 quintals/hectare in the Districts of plain areas of the State.

As per recent data provided by DAO ('District Agriculture Officer'), the area sown with different crops during the year 2011-12 shows that Paddy & *Mandua* (Ragi) are major crops in Kharif season and Wheat & Barley are major crops in the Rabi season. Main Cash crops of the District are *Rajma*, *Ramdana*, Soya bean. Apart from this, the climatic conditions of the District are suitable for Apple, Citrus, Peach and Walnut crops. Off-season vegetable cultivation is the most remunerative short term farm-based activity.

Secondary Sector

Medium and large enterprises are not present in Chamoli District (DSTO & DIC Officials). In MSME's, a substantial proportion of the units are involved in food products, flourmills, fabrication and automobile repairing. The sectoral contribution of various sectors to the economy in Chamoli can be seen as below:



Source: Planning Commission, Government of Uttarakhand

Notably, the contribution of various sectors to the GDDP has been 24.41 percent by the primary sector, 34.5 percent by the industry sector and 41.09 percent by the services sector respectively.

Apart from this, Handicraft and Handloom are the two key sectors, which provide employment to a

large tribal population of this District especially the *Bhotia and Tamta* community. Copper ware and woodcraft decorative items are prepared by these communities. Keeping in view the potential of the sector in the export market the State Government has set up training cum production centers to encourage crafts among tribal and other communities.

Tertiary Sector

As discussed earlier, Chamoli is the second largest District of Uttarakhand. It is popular for its hill stations, picturesque spots and religious centers. The Valley of Flowers is one of the most prominent among all of them. In order to protect the ecological diversity of this area, the trail up to Dibrugheta in the National Park was opened to a maximum of 500 tourists per year in a program for eco-tourism regulated by the Forest Department with active support from local communities. Camping sites have been developed in several places and the villagers offer home stays, which are becoming increasingly popular amongst visitors. Further facilities for cycling, camping, mountaineering and cultural tourism are also planned. Joshimath, where there are hotels, is about 170 km north of the railway station at Rishikesh, and 220 km from Jolly Grant airport at Dehradun.

Table 56: Tourist spots and pilgrimage centers in Chamoli

Name of the Place	Nearby Town	Trekking Route	Category
Badrinath	Badrinath	Connected by Highway	Pilgrimage
Kedarnath	Gourikund	14 km	Pilgrimage
Tungnath	Ukimath	22 km	Pilgrimage
Hemkund Sahib	Govind Gath	21 km	Pilgrimage
Vedni Bugyal	Bean Village	15 km	Adventure & Pilgrimage
Roopkund	Karnprayag	61km	Adventure
Valley of Flowers	Govind Gath	19 km	Trekking route
Auli Bugyal	Joshimath	5 km	Trekking & Winter Sports
Gvvaldham	Gvvaldham	Connected by highway	Hill Station

4. Workforce distribution

The total population of Chamoli in 2012 was 3.93 Lakhs which is expected to increase to 4.04 Lakhs by 2017 and 4.15 Lakhs by 2022. As per our research methodology, the incremental manpower supply will be about 1.01 Lakhs by 2022.

Table 57: Estimated workforce distribution in Chamoli

Year	2012	2017	2022
Total population	3,93,252	4,04,121	4,15,290
Working age population	2,43,160	2,63,076	2,84,624
Labour force	1,49,930	1,93,711	2,50,089
Work force	1,46,622	1,89,366	2,44,572

Incremental Manpower supply		43,782	100,159
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As per the table 58 below, incremental demand for human resource by 2022 for top five sector would be in Education and Skill Development (0.14 Lakhs), Agriculture (0.12 Lakhs), Building, Construction & Real Estate Services (0.059 Lakhs), Tourism, travel, hospitality & trade (0.054 Lakhs); Transportation, logistics, warehousing & packaging (0.053). The total demand for semi-skilled and skilled manpower by 2017 would be 0.037 Lakhs, and 0.086 Lakhs. Similar demand for semi-skilled and skilled manpower by 2022 would be 0.054 Lakhs, and 0.12 Lakhs.

Table 58: Incremental Human Resource Demand in Chamoli

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
Agriculture and allied services	12,353	4,222	1,206	603	4,425	1,264	632
Food processing	3,397	1,006	-	252	1,711	-	428
Metal and Mining	70	17	7	10	19	7	11
Manufacturing	3,360	783	296	441	948	359	534
Electricity, Gas and Water	1,246	403	181	-	457	205	-
Construction & Real Estate Services	5,906	2,088	412	77	2,696	533	100
Automobile / auto-components	589	70	93	54	120	158	93
Tourism, travel, hospitality & trade	5466	821	574	698	1208	1037	1106
Transportation and warehousing	5,374	1,313	590	-	2,395	1,076	-
Postal and communication	370	-	45	123	-	54	147
Finance	139	-	18	50	-	19	52
Real estate and Banking services	377	141	28	5	164	32	6
Public administration and Defense etc.	892	91	291	48	98	313	51
Education & Skill Development	14,109	-	-	5,557	-	-	8,553
Healthcare and Social services	1,052	-	(128)	588	-	212	380

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
Other community services	825	116	155	116	131	175	131
Others	-	-	-	-	-	-	-
Total	55,506	11,071	3,769	8,621	14,374	5,447	12,224

During both the periods i.e. 2012 -17 and 2017 - 2022, there would be an excess supply of minimally and semi-skilled manpower, which is expected to migrate to the neighboring Districts and States for employment. Based on our stakeholder interaction, some possible areas of skill gap have been provided below:

- ▶ Food Processing: Inadequate knowledge of post-harvest technology, processing, and marketing of agro produce;
- ▶ Agriculture: Lack of knowledge on growing seasonal flowers, off-season vegetables; lack of awareness on modern dairy farming practices;
- ▶ Tourism, travel, hospitality & trade: Nature interpreter/guide; souvenir makers; professional photographers; and porter-cum-tent fitters on the hiking trails; develop capacity of hotel management staff, and restaurants;

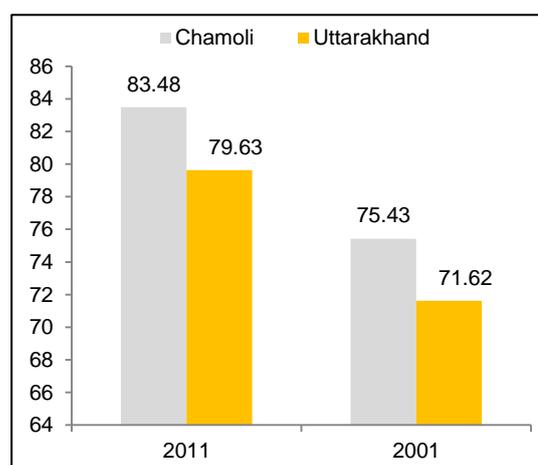
Table 59: Incremental Demand-Supply Gap in Chamoli

Skill Category	2012-17	2017-22
Minimally skilled	(20,082)	(25,387)
Semi-skilled	(2,636)	(3,255)
Skilled	2,398	4,309
Total	(20,320)	(24,333)

5. State of Education

Average literacy rate of Chamoli as per Census 2011 (provisional data) is 83.48 percent compared to 75.43 percent in 2001 which is an increase of over 10.56 percent. Gender wise, male and female literacy is 94.18 percent and 73.2 percent respectively. As per Census 2001, figures stood at 89.66 percent and 61.63 percent showing a proportionate increase in literacy level for all the groups in Chamoli over the last 10 years.

There has been a steady improvement in basic education scenario. As per the Provisional District Elementary Education Report Card for the year 2010-11, 98.6 percent of the students were able to complete



Literacy Rates for Bageshwar District

primary education and graduate to upper primary level. At primary level, there are 1,632 schools in this District but only 149 schools are till 12th standard. Numbers of children enrolled in primary school (class I-class V) were 43,318 and in upper primary school (class VI- class VIII) were 26,145. Majority of the schools are Government funded and enrollment over the years has seen a marginal upward trend at upper primary level. Only in few schools, the medium of instruction is English.

Table 60: School education infrastructure in Chamoli

Type	Primary		Upper Primary	
	Number	Students	Number	Students
Government	1021	35171	368	20928
Private	164	12609	40	2565
Total	1185	47780	408	23493

For higher education, there are six Government degree colleges and one post-graduate college in Chamoli. The post-graduate degree college offers courses in Arts, Science and Commerce streams. Total enrollment for the year 2011-12, was 5,180, with maximum enrollment in Arts followed by Commerce and then by Science. Data published on the Directorate of Higher education ('DHE') website shows that maximum enrolment is in Hindi and Sanskrit Literature followed by Political Science and other courses in Science (Chemistry, Physics and Biology).

Table 61: Industrial Training infrastructure in Chamoli

Type of Institute	Number of Institutes	Enrolment
Industrial Training Institutes	8	353
Polytechnic	2	173
Total	10	526

6. Youth Aspirations

The assessment team held discussions with youth groups to understand their aspirations and preferred sectors of employment, wage expectations and willingness to migrate. Our key discussion points have been summarised below:

- ▶ Suggestions were made to restructure and diversify the training programs;
- ▶ Training should be conducted in additional areas like hotel management and web-designing. It would be much easier to absorb the skilled and semi-skilled labors in these upcoming areas;
- ▶ The criteria of determination of success of training programmes organised should not just be seen in terms of the number of trainees and beneficiaries who had participated- but through follow ups and impact of such training.

7. Development Potential and stakeholder perspective

Tourism & Hospitality Sector

The terrain in some of these trekking routes is considered to be one of the toughest especially near the Valley of Flowers. The potential of this District exists in the tourism sector as there are diverse

natures of attractions, i.e. religious as well as for adventures.

Poor condition of the trekking paths, insufficient shelter points, lack of trained nature and trek guides, difficult terrain for Trekkers (the mule and trekkers path coincide and the trek generally remains littered) are some of the key reasons due to which the region still remains underdeveloped.

A District level initiative on development of quality hotels and regularization of accommodation facilities in terms of grading as per the facilities offered will help in standardizing the quality of hotels/lodges.

Apart from the direct benefits from building new infrastructure, indirect effects will also accrue to the economy as tourism has strong forward, backward and lateral linkages with other sectors of the economy. This could easily generate demands for snack/ tea shops, restaurants, photography, printing and publishing work (brochures, booklets, pamphlets), trek equipment (shoes, raincoats, sticks) etc.

All this will need training for nature interpreter/guide, souvenir makers, professional photographers and porter-cum-tent fitters on the hiking trails.

Agriculture, Horticulture and Floriculture

Most of the farm activities are done manually on the traditional lines with the help of animal driven implements. Use of heavy equipment's is not feasible due to terrace farming and scattered land holdings. Thus, focus needs to be shifted on post-harvest mechanization that will help in value addition of the produce. The storage capacity for the produce needs to be upgraded from present, 10 seed go downs/ fertilizer depots, 52 rural go downs and one Food Corporation of India go down.

Fruits, vegetable and spices are available in abundance here but there is negligible post-harvest value addition. Agro-processing activities are mainly for wheat grinding (flour mills) and fruit processing (jam, jelly, pickle, potato chips etc.). However, the marketing of fruits and vegetables is unorganized and all the produce is generally sold through middlemen. Thus, farmers generally don't get the fair price for their produce.

Development of opportunities by crop diversification in horticulture and floriculture would be highly beneficial. Apples, citrus, walnuts, peaches, off-season vegetables, spices, are some of the crops suitable for this kind of climate. The existing farmer's cooperatives need to have focused training on marketing of agro processed products.

Chamoli District produces costly flowers like lily, lotus, rose, sunflower, rhododendron, etc. The World heritage site "Valley of Flowers" is located in this District. These flowers have huge demand in cities like Dehradun, Delhi, and Srinagar (Uttarakhand), etc. The local farmers sell their flower produce to the middlemen at very low rates due to lack of market knowledge. There is a scope for enhancing the marketing skills through trainings to farmers since they have limited marketing skills and market knowledge.

Animal Husbandry

As already mentioned, majority of the people in this region are small and marginal farmers. Dairy animals were noted to provide additional income to them. Currently, dairy is derived primarily from cows and buffaloes. Like other Districts of Uttarakhand, the productivity in terms of milk is low in this District as well. However, there is a potential for use of smaller animals like sheep, pigs, etc.

Sheep rearers in Chamoli use traditional techniques of extracting raw wool from the sheep which impedes the quality and quantity of the wool. Therefore, since the wool does not meet the quality standards possible through mechanized shearing, the sheep rearers are not able to get the best prices for it. Consequently, there is a skill gap needed to be fulfilled by providing training on the modern techniques of wool shearing and processing.

Further training of qualified youth in the veterinary services as para-vets, will help in meeting shortage

of skilled staff in animal care. State officials should encourage private veterinary clinics and consultants for providing knowledge and training on animal reproduction, disease control and value addition in dairy products.

Handicrafts and Handlooms

A majority of the *Bhotia* community living in the District are involved in the woolen industry. The process of weaving, finishing and partially merchandising wool products is practiced by the female members of the households. They generally produce shawl, garments, blankets, rugs and carpets. The raw material for the wool is sheared from the sheep. They sell their produce to small retail shops locally but find it difficult to find bigger and more lucrative markets due to the lack of branding and/or focused marketing efforts. So even though all these hand-made products represent the rich heritage of Garhwal, a lot of its potential remains untapped due to lack of marketing skills.

In order to promote handicrafts, the Government recently identified six clusters in the State famous for handicrafts for ages. One of them is *Chinka cluster*, which is administered by the Chamoli District. Under this cluster, several facilities like yarn depots and common facility centres are available. Meetings are arranged between the exporters and artisans and several workshops are conducted for improving the productivity and capacity. But a lot of work needs to be done in ensuring an assured market for these products. The tools and equipment's are also based on very old and traditional techniques leading to higher cost of production; thereby causing difficulties in the sale of the final products.

Therefore, there emerges a need for trainings to upgrade the technology and production techniques. There is need for upgrading their skills, product diversifications, product designing, market oriented products, participation in exhibitions in India and abroad.

The designs which are used to make these products are outdated and the cost of making these traditional designs is also high. Setting up of an Institute of Design, which can work with these artisans will help in imparting technological skills to the artisans.

During our discussion with the officials at DIC, Chamoli regarding existing training programs (which are funded by the State and MSME, GoI) following concerns were shared:

- ▶ Sourcing of trainees is a major concern since it was reported that most trainings organized by the DIC were attended by the same participants.
- ▶ There hasn't been any evaluation of the programmes which are being conducted to follow up and ascertain the impact of the trainings.

Based on our interaction with various stakeholders, some key areas which provide skill development opportunity have been provided in the table below:

Table 62: Sector and skill requirement

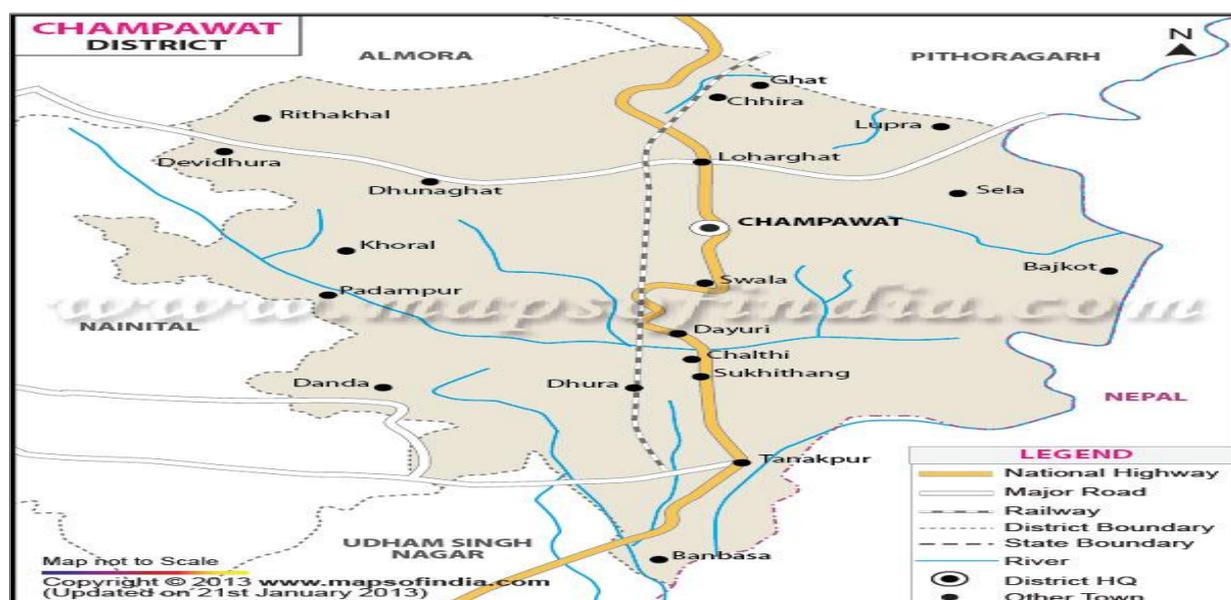
Sector	Skill Requirements
Primary	Crop diversification in horticulture and floriculture has a potential. Skills for food processing and marketing of organic farming products need to be honed. Sheep rearing with modern techniques is critical to leverage on existing Animal Husbandry activities within the District.
Secondary	Improvisation of designs and technology used in handloom products especially those produced by the Bhotia community. Branding and Marketing skills to be able to develop forward linkages.
Tertiary	Tourism has strong potential with a number of hill stations, picturesque spots and religious centres and the presence of Valley of Flowers in the District. Hotel Management Hospitality related skills will be beneficial in Customer

	Servicing, Tour Guiding, Adventure Sports, etc.
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8. Recommendations

Government	<ul style="list-style-type: none"> ▶ Skilling infrastructure in the identified six clusters for Handicrafts in District needs to be strengthened. Government should promote training on product diversification, product design, and skill upgradation of artisans and traditional handicraft workers ▶ Curriculum development of ITI courses on Horticulture, Floriculture to meet the demand for skilled manpower in the District,
NSDC	<ul style="list-style-type: none"> ▶ Support KVK to provide training in use of modern farm equipment's, technology, and farming practices. ▶ Extend support to VTP on training related to wool production, food processing technology, and post-harvest technology
Industry	<ul style="list-style-type: none"> ▶ Major hospitality firms in the State and the country should be encouraged to set up properties to help promote the District as a tourist destination. This provides opportunities for introducing various skilling programs for cooks, waiters, house-keeping and other hotel/ restaurant management roles.
Vocational Training Providers	<ul style="list-style-type: none"> ▶ Training on new methods, techniques, and mechanization in farming. Encouraging value addition to herb cultivation. ▶ Training on new methods, techniques, and mechanization in the hosiery and wool industry. ▶ It is essential to incorporate a component of soft skill training like communication skills, personality development etc. in all courses. ▶ Incorporate practical training as a substantial part of the existing curriculum of technical courses. ▶ Skilling and up gradation of existing skills related to automobile repair and household electronic service can be provided.

6.4 Champawat



Source: Maps of India

1. Introduction

The District of Champawat is spread over an area of 1,781 sq. km which forms approximately 3.33 percent of the total geographical area of the State. The District of Champawat is situated in northern - eastern area of Uttarakhand. The Ram Ganga River acts as a border between Champawat and Pithoragarh in north. While Jabgura and Pannar rivers in the south and west respectively act as a border between Champawat, Udham Singh Nagar and Almora Districts simultaneously. The mountains in southwestern region acts as a border between Champawat and Nainital Districts. In the east, Kali River acts as the international border between Nepal and India. Champawat has a mountainous terrain with a forest cover of 74.30 percent of the total area of the District. Administratively, Champawat is divided into 4 blocks and has a total of 717 villages.

Table 63: Administrative profile of Champawat

Particulars	Champawat	Uttarakhand	Source
Area (in Sq Km)	1,781	53,483	http://www.census2011.co.in/census/state/districtlist/uttarakhand.html
Percentage share of State Geographical area	3.33%	100	N.A
Number of Community Development Blocks	4	95	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWP/DistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Number of Gram Panchayats	286	7,256	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWP/DistrictMain.aspx?IState=035&StName=UTTARAKHAND)

Particulars	Champawat	Uttarakhand	Source
Total number of inhabited villages	717	16,793	http://www.censusindia.gov.in/2011-prov-results/paper2/data_files/uttarakhand/8-adminunit-60-61.pdf

2. Demography

Champawat is home to 2.56 percent of the total population of the State, with its 2.59 Lakh inhabitants, it is the least populated District of the State. Champawat has witnessed a decadal growth rate of 15.49 percent in population, since 2001. According to Census 2001, the socially backward classes such as SC and ST represent 17 percent and 0.29 percent of the District population respectively.

According to Census 2011 (provisional data) the sex ratio in Champawat is 981 females per 1,000 males, which is much higher than the state's sex ratio of 963 and India's sex ratio of 940. However, there has been a substantial decrease in the sex ratio from 1,021 to 981 in comparison to the Census 2001 data.

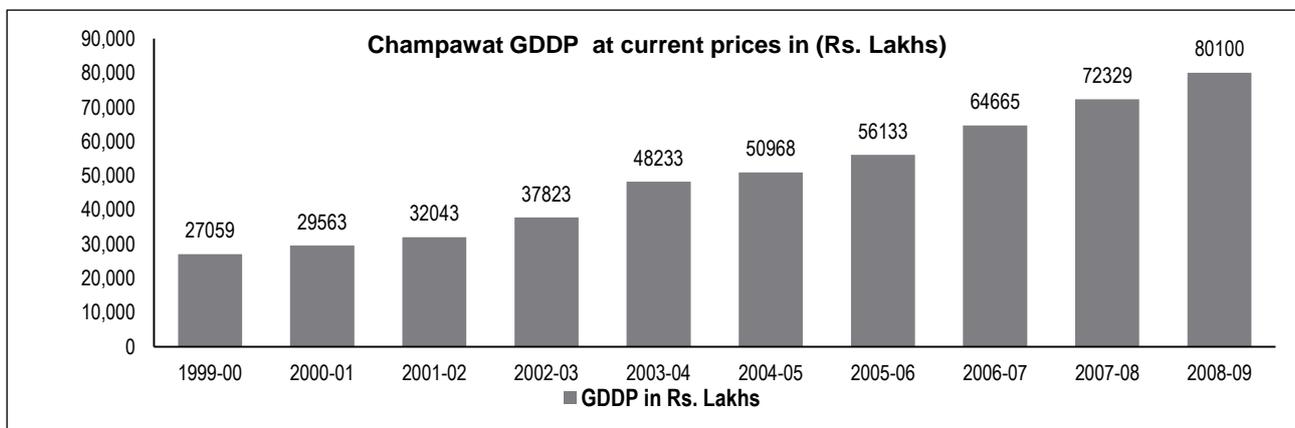
As per Census 2011 (provisional data), Champawat has a population of 2.59 Lakhs of which males and females were 1.31 Lakhs and 1.28 Lakhs respectively. As per Census 2011 (provisional data) the population density of Champawat is 147 making it the seventh most populated District of Uttarakhand.

Table 64: Socio economic indicators for Champawat

Population	Champawat	Uttarakhand	Source
Total population (in Lakh)	2.59	101.17	Census 2011 (provisional data)
Total population (Male) (in Lakh)	1.30	51.54	Census 2011 (provisional data)
Total population (Female) (in Lakh)	1.28	49.63	Census 2011 (provisional data)
District share in State's population	2.56%	N.A	N.A
Density of population	147	189	Census 2011 (provisional data)
Decadal growth of population (2001-2011)	15.49%	19.17%	Census 2011 (provisional data)
Percentage of urban population	14.29%	30.55%	Census 2011 (provisional data)
Scheduled Caste population percentage of State population	17%	17.90%	Census 2001
Schedule Tribe population percentage of State population	0.29%	3%	Census 2001
Sex ratio	981	963	Census 2011 (provisional data)

3. Economy

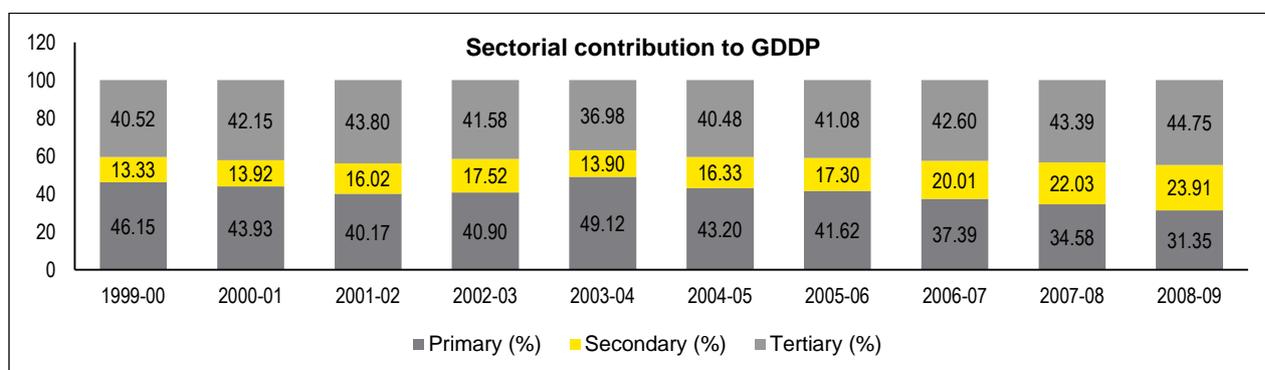
As per the data collected by the Directorate of Economics & Statistics (2008-09), Champawat had a Gross District Domestic Product⁴⁷ of Rs. 80,100 Lakh which amounts to 1.99 percent of the total State GDP. The per capita income of Champawat for 2008-09 was valued at Rs. 27,374, which is much lower than the State per capita income of Rs. 36,520⁴⁸.



Interaction with NABARD officials revealed some of the key economic and commercial activities in each of the development blocks of the District; these have been provided in the table below:

Block	Development Activities
Champawat	Rice mills/ flour mills, Metal & Plastic based units, Food/Agro Processing, Bakery, Cold Storage, hotel, Stone crushers, bottling plants, engineering units.
Lohaghat	Forest related activities, Cold storage, Food/Agro-processing, Bakery.
Baarakot	Pulses polishing, Medicinal plant processing, Hotel, stone crusher and bottling point
Paati	Tin, Pulses polishing, spice industry, bakery, cold storage, engineering

Sector wise contribution to the District Domestic Product is 31.35 percent, 23.91 percent and 44.75 percent of the Primary, Secondary and Tertiary sectors respectively.



⁴⁷ Statistical Diary, Government of Uttarakhand

⁴⁸ <http://planningcommission.nic.in/plans/stateplan/present/Uttarakhand.pdf>

Source: Planning Commission, Government of Uttarakhand

Primary Sector

Champawat has predominantly an agrarian economy. Majority of the farmers have their own land with almost 73 percent of the cultivable land being owned by small and marginal farmers. In Kharif season, main crops produced extensively in Champawat are Maize, *mandua* and pulses. *Udad* (kidney bean), *Gahat*, *Til* and Soya bean are the most produced pulses. In Rabi season, the main crops are Wheat, Barley, Peas and Lentil.

Mango and Litchi are the predominant agricultural outputs from the regions of Bawaasa and Tanakpur. This area is also well suited to produce fodder for livestock. Champawat has large areas of fallow land, mostly due to the lack of water, poverty and non-remunerative nature of farming.

As per data (2012-13) provided by District Agriculture officer ('DAO'), around 22,576 hectares are cultivable. Wheat and paddy are the major crops grown across Champawat with a productivity of 12.61 ton/hectare and 11.61 ton/hectare respectively.

The topography and weather of Champawat is suitable for growing fruits, vegetables and spices. Productivity of ginger and potato is highest in the District. Off-season vegetables like tomato provide better remunerative prices to the farmers.

Secondary Sector

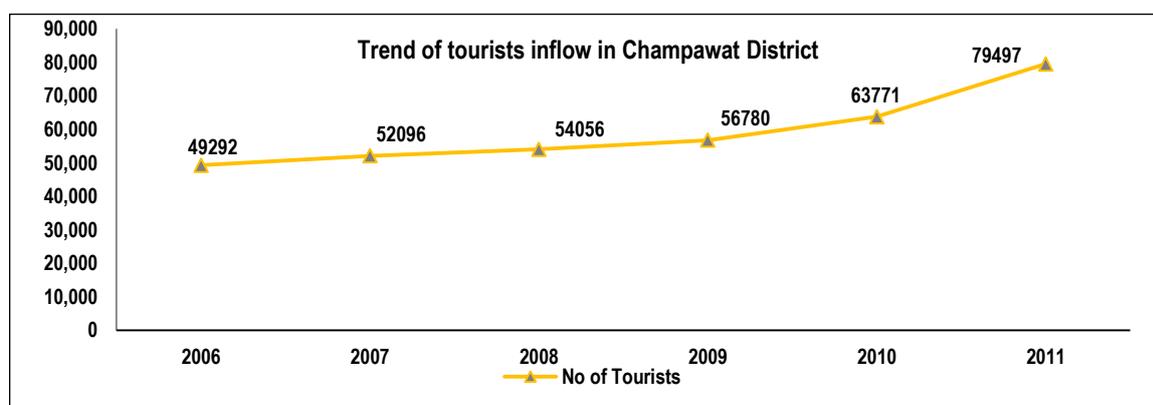
Medium and large enterprises are not present in Champawat (DSTO & DIC Officials) due to the geographical terrain which makes it difficult to set up medium or large scale enterprise here. A substantial proportion of MSME's are involved in to food processing, photography & related business activities. In the non-farming sector, there is scope for cottage industry and other micro units like garments, electronics repairing and leather etc.

In 2010-11, several programs for industrial development like Skill Development, Bench Marking system, Research and Development, Forward Linkages etc. were held through different institutions in which 307 entrepreneurs were trained. Out of the total trainees, 20 percent were able to successfully open their own business ventures.

At the end of financial year 2012, there were 655 *gram-udhyog* units and 585 Small Scale Industries ('SSI'). The main activities under these include electronics, flour mills, tanneries and tailoring.

Tertiary Sector

Champawat is famous for its natural beauty and historic temples. It has many well-known temples of high artistic value which along with its scenic beauty attracts thousands of domestic as well as international tourists. The inflow of tourists (domestic and international) has increased from 13.8 percent in 2006 to 22.3 percent in 2011. Tourism in Champawat includes visits to religious as well as historical places. Places of religious importance are *Reetha Sahib*, *Devidhura*, *Purnagari* Temple, *Mayawati* Ashram, and *Pancheshwar*. The District is also famous for leisure as well as nature tourism. Some of the important spots that attract tourists are - *Lohaghat* situated on the bank of river Lohawati; *Shyاملatal* hosts Swami Vivekananda Ashram; Mount Abbott provides breath taking view of Himalayan peaks.



Source: Tourism Department, Uttarakhand

4. Workforce Distribution

The total population of Champawat in 2012 was 2.63 Lakhs which is expected to increase to 2.82 Lakhs by 2017 and 3.03 Lakhs by 2022. As per our research methodology, the incremental manpower supply will be about 0.47 Lakhs by 2022.

Table 65: Estimated workforce distribution in Champawat

Year	2012	2017	2022
Total population	2,63,076	2,82,713	3,03,816
Working age population	1,63,205	1,87,718	2,15,914
Labour force	98,254	1,19,833	1,46,186
Work force	96,108	1,17,229	1,42,991
Incremental Manpower supply		21,578	47,931

As per the table 66 below, incremental demand for human resource by 2022 for top five sector would be in Transportation, logistics, warehousing & packaging (0.06 Lakhs), Food processing (0.05 Lakhs), Education & Skill Development (0.04 Lakhs), Tourism, travel, hospitality & trade (0.38 Lakhs) and Building, Construction & Real Estate Services (0.026 Lakhs). The total demand for skilled semi-skilled and skilled manpower by 2017 would be 0.037 Lakhs, and 0.086 Lakhs. Similar demand for semi-skilled and skilled manpower by 2022 would be 0.054 Lakhs, and 0.056 Lakhs.

Table 66: Incremental Human Resource Demand in Champawat

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimal ly skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
Agriculture	434	152	43	22	152	43	22
Food processing	5,683	1,688	-	422	2,858	-	715

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
Metal and Mining	-	-	-	-	-	-	-
Manufacturing	1,726	402	152	226	488	185	275
Electricity, Gas and Water	66	22	10	-	23	10	-
Building, Construction & Real Estate Services	2,672	944	187	35	1,220	241	45
Auto & Auto Components	458	55	73	43	93	123	72
Tourism, travel, hospitality & trade	3841	671	349	521	925	605	769
Transportation, logistics, warehousing & packaging	6,632	1,612	724	-	2,965	1,332	-
Postal and communication	343	-	42	114	-	50	136
Banking, Financial Services & Insurance	47	-	6	17	-	6	17
Real estate and Banking services	234	88	17	3	102	20	4
Public administration	309	31	101	17	34	109	18
Education & Skill Development	3,853	-	-	1,518	-	-	2,335
Healthcare	308	-	(89)	233	-	114	50
Other community services	229	32	43	32	36	49	36
Others	-	-	-	-	-	-	-
Total	26,836	5,697	1,658	3,203	8,897	2,888	4,494

During both the periods i.e. 2012 -17 and 2017 - 2022, there would be an excess supply of manpower in all the skill categories. Most of it will be in minimally skill category. Surplus labor is expected to migrate to neighboring Districts and State for employment. Based on our stakeholder interaction, some possible areas of skill gap have been provided below:

- ▶ Education and Skill Development: Requirement of hotel management course at University level;
- ▶ Food Processing: Lack of knowledge on fruit processing; conversion of farm produce to organic;
- ▶ Transportation, logistics, warehousing & packaging: Lack of trained supervisors, foreman for cold storage facilities; drivers for large multi-purpose vehicle;
- ▶ Tourism, travel, hospitality & trade: Require trained wild life guides; nature interpreters; micro and small entrepreneur lack capacity to scale up business.

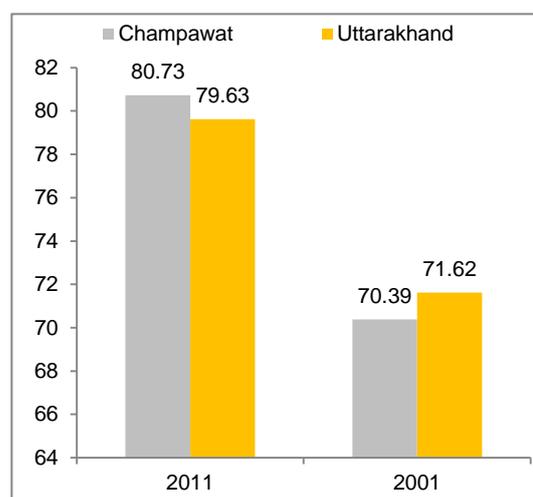
Table 67: Incremental Demand-Supply Gap in Champawat

Skill Category	2012-17	2017-22
Minimally skilled	(9,192)	(9,501)
Semi-skilled	(1,990)	(1,415)
Skilled	162	841
Total	(11,020)	(10,075)

5. State of education

The average literacy rate of Champawat as per Census 2011 (provisional data), is 80.73 percent vis-à-vis 70.39 percent reported in Census in 2001. Male and female literacy stand at 92.65 percent and 68.81 percent respectively (according to the 2001 Census, these figures were 87.27 percent and 54.18 percent respectively), showing an increase in literacy level by 6 percent for men and over 27 percent for women since 2001.

As per the provisional District Elementary Education Report Card for the year 2010-11, 98.2 percent of the students were able to complete primary education and graduate to upper primary level. At primary level, there are a total of 622 schools whereas there are only 78 schools at the higher Secondary level. Majority of the schools are Government funded and enrollment over the years has seen a marginal upward trend at the upper primary level.



Literacy Rates for Champawat District

Table 68: School education infrastructure in Champawat

Type	Primary		Upper Primary	
	Number	Students	Number	Students
Government	516	23512	198	13751

Private	102	9964	22	2329
Total	618	33476	220	16080

For higher education, there are two Government Degree colleges and one Post-graduate College in Champawat. The Post-graduate Degree College offers courses in Arts, Sciences and Commerce streams. For the year 2011-12, the total students enrolled in these colleges were 2,974. Apart from the basic academic courses, they are also offering professional vocational courses like Computer Hardware, Tourism Management and BBA.

Table 69: Student Strength of Government colleges in Champawat for the year 2011-12

College name	Status	Established In	Girls Enrolled	Boys Enrolled	Total
Government Post Graduate College, Lohaghat	Post Graduate	1979	806	739	1545
Government Degree College, Champawat	Graduate	1997	258	294	552
Government Degree College, Tanakpur	Graduate	2004	502	195	697
Total			1,556	1,228	2,974

Source: Directorate of Higher Education, Uttarakhand

On the technical front, Champawat has one polytechnic institute in Lohaghat which offers courses in Civil Engineering, Information Technology, Electronics Engineering, and Modern Office Management & Secretarial Practice. There are three ITIs in the District⁴⁹.

Table 70: Industrial Training infrastructure in Champawat

Type of Institute	Number of Institutes	Enrolment
Industrial Training Institutes	5	304
Polytechnic	1	185
Total	6	489

As per the recent data available at the employment office of the District (October 2012), 20,854 people have registered themselves under unemployment here. Out of the total registered unemployed, around 32.15 percent of females are actively looking for employment opportunities. Most of the registered youth are in the rural areas.

6. Youth Aspirations

⁴⁹ <http://dotuttarakhand.org/dotuttara/ddn/Portals/0/Users/003/03/3/email.pdf>

The assessment team also held discussions with youth groups to understand their aspirations and preferred sectors of employment, willingness to migrate, training etc. Our key discussion points have been summarised below:

- ▶ Youth foresee a lot of employment potential in industries related to tourism.
- ▶ Majority of the youth prefer to migrate to other plain areas of the District where the demand isn't completely seasonal.
- ▶ During our interaction with the youth, it was suggested that courses in the Government universities need to be restructured keeping in line with the demand-based employment opportunities in the District.

7. Development potential and stakeholder perspective

As per discussions with concerned stakeholders (Additional District Magistrate, District Industrial Center, District Rural Development Authority, and District Statistical Officer) in the District, following sectors have growth potential in Champawat:

Tourism & Hospitality Sector

As discussed earlier, Champawat is known for its scenic beauty. In the past decade, tourism as an industry has provided different avenues of employment. In the service sector, hotels, cyber cafes, motels, yoga meditation centers and tourist guides services have been promising.

Although there has been an increase in the number of hotels, motels and resorts over the last few years, the quality has remained sub-standard. This is due to the fact that as the industry is seasonal in nature, it hasn't been able to attract quality skilled labour. There is no institute or organization in Champawat providing any type of training on hotel management or related courses. Training related to hotel management can be provided to stop the seasonal migration. Professional courses on hotel management could be initiated at University level.

In Champawat, the focus has been on cultural tourism but there is also scope for wildlife tourism. Training for wildlife guides and nature interpreters' could be the key area to focus in the near future. Resources need to be mobilized for infrastructure up-gradation in terms of road, connectivity and electricity.

Horticulture

Around the valley region of Champawat, cultivation of tropical fruits like mango, litchi, lemon and banana is very economical. In the dense forest areas, there is availability of medicinal and aromatic plants but so far the investments are at a very small scale by some companies like Dabur and Hamdard. The local population can avail the benefits of the available natural resources if awareness is created on the identification and use of herbs and how value added products can get them better returns.

Agro-Seasonal Zone	Fruits cultivated in that zone
Low range (1000 meters and below)	Mango, litchi, wood apple , lemon and its kinds, papaya, grapes and banana
Medium range (Between 1000 and 2500) meters	Pear, plum, almonds, Peach, walnut and pomegranate
High range (2500 meters and above)	Apple, pear, cherry, almonds, chestnut and apricot

At present, there are six Government nurseries which provide seed and fertilizers to the farmers on a regular basis. Capacity utilization is inadequate and unavailability of cold storage facility creates hindrance in promotion of forward linkages (i.e. Agro-based industries).

Training and skill development in processing and packaging units for fruits like almonds, peaches, apples, etc. in Champawat will help in providing employment opportunities.

Animal Husbandry (Dairy)

Dairy, poultry farming and sheep rearing are the prominent animal husbandry activities in the District. However, local breeds of dairy animals aren't considered that productive. Thus, the focus has shifted to buffaloes and *sankar* breed of cows. Champawat is very rich in flora and fauna and a huge availability of the greenland gives scope for goat and sheep rearing. The training on skill development in the processing of good quality wool can fetch a good price for the locals.

Farm mechanization is close to negligible in this District. Therefore, the farmers are also dependent on dairy animals for agriculture related activities. Further, cow-dung is used for the production of bio-gas used as cooking gas. There is a bio-gas development and training Center in Dehradun but there are no such centres in this District. In Champawat, use of Bio-gas is not prevalent due to the fact that there is abundance of cooking wood. However, the potential of setting up bio gas plants is huge due to the availability of cow dung and the availability of farm waste. Setting up a District level training centre would be beneficial as there is a need to organize workshops for the rural people regarding the economic and environmental benefits by using renewable sources of energy.

There are climatic differences within the District itself as the Terai region is comparatively very hot as compared to the rest of the hilly regions of the District. Thus, a training for the Hotel entrepreneurs regarding the use of solar water heaters particularly in the Terai area could possibly help in skill development of the locals which can be extensively used as cost saving technique.

Agro- Processing Units

As already discussed, size of land holdings is small in the District and the produce is generally for subsistence and local markets. Thus, the scale of agro processing units is small and totally unorganized. There exists a huge potential in preserving and processing of fruits and aromatic and medicinal plants.

As per our interaction with the farmers (individuals and small groups), it was mentioned that most of the fruits and vegetables are graded manually in terms of color, shape and appearance. Grades are assigned as A, B and C (order from high quality to low quality). Grade A and B for apples and tomatoes are generally sold very quickly in the *mandi* but the grade C quality produce doesn't have many buyers. Some of the challenges faced are:

- ▶ No initiatives have been taken for the development of the processing units
- ▶ Sub-standard transportation and cold storage facilities
- ▶ Lack of training in the organic food processing units

With the above challenges faced following are the recommendations based on the potential available:

- ▶ Food processing centres could be set up for jams and juices for fruits and chatni & ketchup for tomatoes. The necessary skills should also be developed for the same.
- ▶ The usage of fertilizer in Champawat is one of the lowest among all Districts in the State. Organic produce generally gets better remunerative prices in the international market, so by improving on infrastructure bottlenecks and inculcating marketing and business development skills, export potential can be availed.
- ▶ A State level initiative coupled with strengthening of infrastructure and training in organic food processing is required to integrate the farmers through SHGs for generating extra surplus for international produce.

Other Services

Various Government schemes like Prime Minister's Employment Generation Program (PMEGP) and Padhan Mantri Gram Sadak Yojna (PMGSY) are being organized to promote entrepreneurship. The most prominent scheme is PMEGP, which has provided a new lease of life for Gram-udyog units. Additionally, development strategies and industrial policies of the local Government have also influenced the growth of some priority sectors and as a result, promoted skill development. Most of the business ventures in the District are related to repairing services of mobile, computers, and electronic items. It also includes dairy operations, hotels and restaurant services.

However, in the above context it becomes pertinent to develop the capacities of micro, small, and medium enterprises. Skill development areas include- business development, entrepreneurial skills, business management, financial management, and digital literacy.

Based on our interaction with various stakeholders, some key areas which provide skill development opportunity have been provided in the table below:

Table 71: Sectors and skill requirement

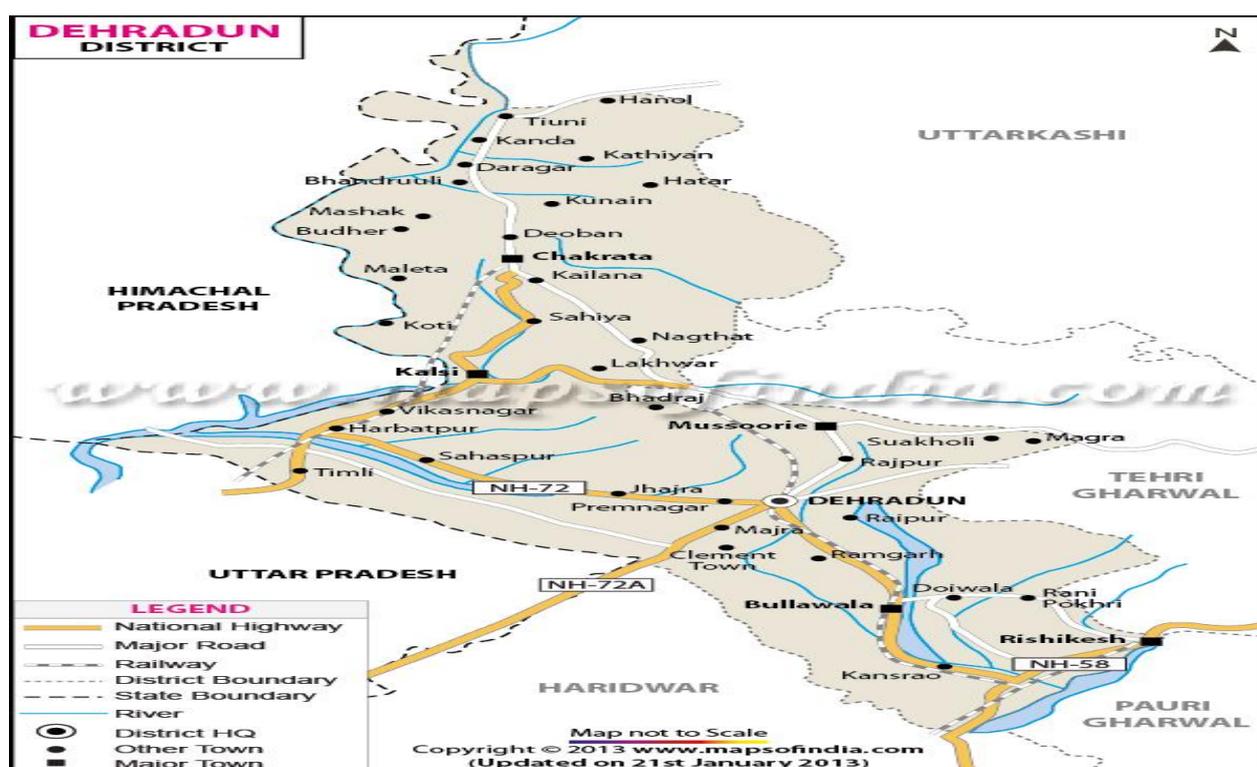
Sector	Skill Requirements
Primary	There is a scope for the horticulture products marketing training. Mango and litchi are the major crops and there is the scope for techniques of sorting, grading, ripening, storage, etc. There is also a scope for food processing.
Secondary	Focus on infrastructure for establishment of value added wood & wool based industries. There are some medium industries in the sector as revealed by the NABARD and there exists a scope for improvement.
Tertiary	Processing and packaging units of some fruits like almonds, peaches, apples, etc. in the District will help in providing employment opportunities to the unskilled and semi-skilled labor.

8. Recommendations

Government	<ul style="list-style-type: none"> ▶ Promote trainings related to eco-tourism, wildlife tourism and adventure sports in collaboration with District Tourism Board and National Institute of Mountaineering; ▶ Introduce trainings to promote food processing industry, courses could include use of new techniques for sorting, grading, ripening, and storage, of fruits
NSDC	<ul style="list-style-type: none"> ▶ Support VTPs who can design a comprehensive training for <ul style="list-style-type: none"> • Para agriculturists/para vets • organic food processing
Industry	<ul style="list-style-type: none"> ▶ Major hospitality and adventure tourism companies in the State and the country should set up properties to help promote the District as a tourist and adventure sports destination for domestic and foreign tourists. This provides opportunities for introducing various skilling programmes for cooks, waiters, house-keeping and other hotel/ restaurant and adventure roles, along with training on basic levels of adventure sports like mountaineering, para-gliding, trekking etc.; ▶ Industries can collaborate with the exiting training providers to develop course structure and curriculum. The industry can create employment opportunities by setting up processing plants for processed food items like juice, jams, jelly etc. in the District.

Vocational Training Providers	<ul style="list-style-type: none">▶ VTC in the District should introduce short term training programmes on basic levels of adventure sports, hotel management/ tourism related skills including culinary, housekeeping, waiter, bartending, trekking guides etc.;▶ The VTCs can also train the forest dwellers to become wildlife guides and caretakers, so that they can be formally appointed on Government payrolls.
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6.5 Dehradun



Source: Maps of India

1. Introduction

Dehradun is spread over an area of 3,088 sq. km which forms approximately 5.77 percent of the total geographical area of the State. Located in the north-western region, Dehradun is bordered by the Districts of Uttarkashi in the North East, Tehri Garhwal in the East and Haridwar in the South. It has common borders with the states of Himachal Pradesh and Uttar Pradesh in the West.

Administratively, Dehradun District is divided into 6 blocks with the total number of villages being 748.

Table 72: Administrative profile of Dehradun

Particulars	Dehradun	Uttarakhand	Source
Area (in Sq Km)	3,088	53,483	http://www.census2011.co.in/census/state/districtlist/uttarakhand.html
Percentage share of State Geographical area	5.77	100	N.A
Number of Community Development Blocks	6	95	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWPDistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Number of Gram Panchayats	308	7,256	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWPDistrictMain.aspx?IState=035&StName=UTTARAKHAND)

Particulars	Dehradun	Uttarakhand	Source
Total number of inhabited villages	748	16,793	http://www.censusindia.gov.in/2011-prov-results/paper2/data_files/uttrakhand/8-adminunit-60-61.pdf

2. Demography

Dehradun is home to 16.79 percent of the total population of the State and with its 16.99 Lakh inhabitants it is the second most populated District of the State. There is an increment of 32.48 percent in the total population compared to the population as per Census 2001. According to Census 2001, the socially backward classes such as SC and ST represent 13.53 percent and 7.75 percent of the Districts population respectively.

The sex ratio in Dehradun fares poorly compared to other Districts, the State average and the country average. The sex ratio for Dehradun as per Census 2011 (provisional data) is 902 females per 1,000 males, much below the State average of 963 females per 1,000 males and the national average of 960 males per 1,000 males. Provisional data as per Census 2011 suggests a population density of 550 in 2011, making Dehradun the third most densely populated District of Uttarakhand.

Table 73: Socio economic indicators for Dehradun

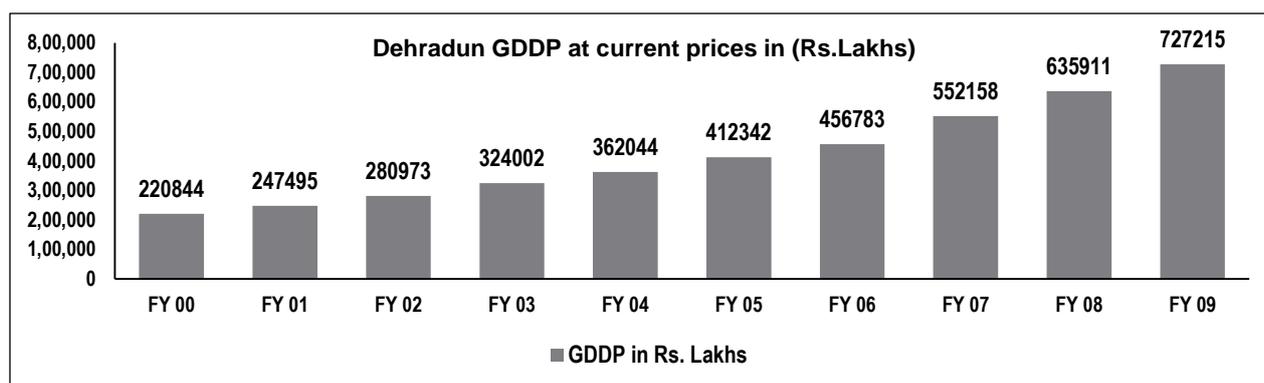
Population	Dehradun	Uttarakhand	Source
Total population (in Lakh)	16.99	101.17	Census 2011 (provisional data)
Total population (Male) (in Lakh)	8.93	51.54	Census 2011 (provisional data)
Total population (Female) (in Lakh)	8.05	49.63	Census 2011 (provisional data)
District share in State's population	16.79%	N.A	N.A
Density of population	550	189	Census 2011 (provisional data)
Decadal growth of population (2001-2011)	32.48%	19.17%	Census 2011 (provisional data)
Percentage of urban population	55.90%	30.55%	Census 2011 (provisional data)
Scheduled Caste population percentage of State population	13.5%	17.90%	Census 2001
Schedule Tribe population percentage of State population	38.78%	3%	Census 2001
Sex ratio	902	963	Census 2011 (provisional data)

3. Economy

As per the data collected by the Directorate of Economics & Statistics (2008-09), Dehradun had a Gross District Domestic Product⁵⁰ of Rs. 727,215 Lakh which amounts to 18.11 percent of the total State GDDP. The per capita income of Dehradun for 2008-09 was valued at Rs. 43,521, which is

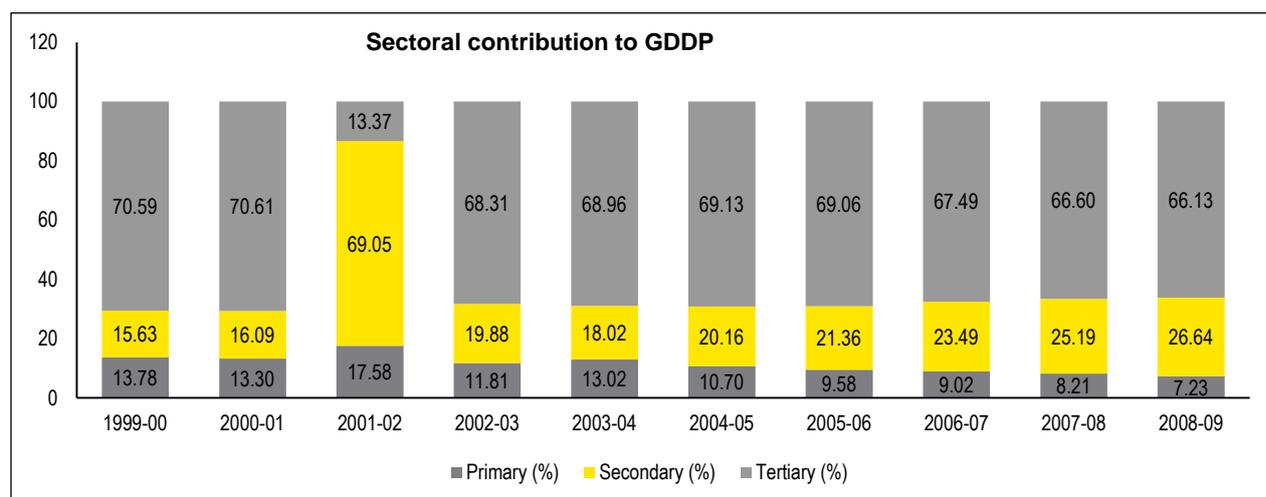
⁵⁰ *Statistical Diary, Government of Uttarakhand*

significantly higher than the State per capita income of Rs. 36,520⁵¹.



Source: Planning Commission, Government of Uttarakhand

The contribution of various sectors to the GDDP in the year 2008-09 has been 7.23 percent, 26.64 percent and 66.13 percent of the Primary, Secondary and Tertiary sectors respectively.



Source: Planning Commission, Government of Uttarakhand

Primary Sector

A total of 66,239 hectares⁵² of land or a little over 18 percent of the total geographical area was brought under cultivation in the District of Dehradun. Wheat is the primary crop with a gross cropped area of 20,796 hectares. Apart from wheat, other major crops include rice, maize and fruits, vegetables and tea plantation.

Secondary Sector

The District has taken rapid strides towards industrialization with the State Industrial Development Corporation of Uttaranchal Limited playing an important role. As per the District industrial center there are 5,883 registered industrial units, with an estimated number of 34,733, and 4,471 daily workers employed in small scale, medium and large industries. Till 2011-12 the total investment by the industries stood at 57,887.25Lakh. Some of the prominent micro, small and artisan units are food products and beverages (105 units), apparels and dressing (269 units), chemical products (84 units), wood and wood products (43 units), rubber and plastic (56 units), fabricated metal (53 units), electrical

⁵¹ <http://planningcommission.nic.in/plans/stateplan/present/Uttarakhand.pdf>

⁵² As per the Ministry of Agriculture in 2009-10,

machinery and equipment's (67 units), textile industry (19 units), computer related activities (129 units), and repair and maintenance (81 units).

Tertiary Sector

Dehradun accounts for substantial portion of contribution of tertiary sector to the Net State Domestic Product. Besides being the state capital and the largest town in the State (the distant second is Haridwar), most of the tertiary sector activities are concentrated in Dehradun. The headquarters of the district is visited by a large number of tourist every year, many of them enroute to Mussoorie. There are a number of tourist destinations in Dehradun such as Gurudwara temple, Sahastradhara, Robbers Cave, Dakpatthar, Tapkeshwari Mahadeo temple, Malsi Deer Park, Raipur spring, etc.

4. Workforce Distribution

The total population of Dehradun in 2012 was 17.47 Lakhs which is expected to increase to 20.10 Lakhs by 2017 and 23.14 Lakhs by 2022. As per our research methodology, the incremental manpower supply will be about 5.08 Lakhs by 2022.

Table 74: Estimated workforce distribution in Dehradun

Year	2012	2017	2022
Total population	17,47,010	20,10,794	23,14,407
Working age population	10,70,404	12,39,156	14,34,511
Labour force	6,55,396	8,74,042	11,63,589
Work force	6,40,745	8,53,754	11,37,577
Incremental Manpower supply		218,646	508,193

As per the table 75 below, incremental demand for human resource by 2022 for top five sector would be in Tourism, travel, hospitality & trade (1.19 Lakhs), Building, Construction & Real Estate Services (0.64 lakhs), Education and Skill Development (0.52 Lakhs), Healthcare (0.51), and Construction materials & building hardware . The total demand for semi-skilled and skilled manpower by 2017 would be 0.29 Lakhs, and 0.74 Lakhs. Similar demand for semi-skilled and skilled manpower by 2022 would be 0.57 Lakhs, and 1.01 Lakhs

Table 75: Incremental Human Resource Demand in Dehradun

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
Agriculture	106	37	11	5	37	11	5
Food processing	4,688	1,391	-	348	2,359	-	590
Metal and Mining	6,740	1,581	598	890	1,890	716	1,064
Manufacturing	64,280	8,278	10,923	6,400	12,506	16,503	9,670

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
Electricity, Gas and Water	2,133	690	310	-	782	351	-
Building, Construction & Real Estate Services	32,955	11,648	2,301	431	15,046	2,972	557
Auto & Auto Components	26,003	3,119	4,116	2,412	5,289	6,979	4,089
Tourism, travel, hospitality & trade	1,19,573	22529	7427	15711	35668	12895	25343
Transportation, logistics, warehousing & packaging	24,648	6,245	2,806	-	10,763	4,835	-
Postal and communication	7,159	-	879	2,377	-	1,054	2,849
Banking, Financial Services & Insurance	1,083	-	143	387	-	150	404
Real estate and Banking services	9,108	3,302	652	122	4,075	805	151
Public administration	5,640	575	1,840	301	619	1,981	324
Education & Skill Development	52,701	-	-	20,760	-	-	31,942
Healthcare	51,745	-	(3,027)	23,410	-	7,167	24,195
Other community services	4,790	675	900	675	762	1,016	762
Others	-	-	-	-	-	-	-
Total	413,353	60,069	29,878	74,229	89,796	57,435	101,946

During both the period i.e. 2012 -17 and 2017 - 2022, there would be an excess supply of manpower in minimally skilled and semi-skilled category, whereas there would be requirement of skilled manpower in the both the reference period. Based on our stakeholder interaction, some possible areas of skill gap have been provided below:

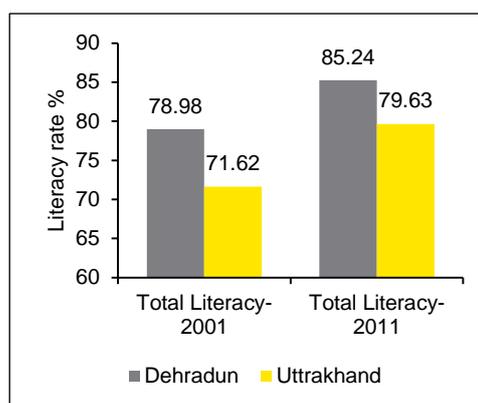
- ▶ Tourism, travel, hospitality & trade: Skilled waiters; hotel management professionals; private tourism agencies;
- ▶ Building, Construction & Real Estate Services: ITI students lack practical exposure; requirement of Mechanic Motor Vehicle, Machinist, Fitter, plumbers, carpenters, Electrician;
- ▶ Education and Skill Development: Requirement of engineers, doctors, IT professionals, pharmacist, retail professionals, professionals specializing in plastic technology, footwear, trade and craft designers;

Table 76: Incremental Demand-Supply Gap in Dehradun

Skill Category	2012-17	2017-22
Minimally skilled	(61,845)	(65,800)
Semi-skilled	(6,730)	5,919
Skilled	14,104	19,512
Total	(54,471)	(40,369)

5. State of education

Average literacy rate of Dehradun in 2011 (as per provision Census figures) is 85.24 percent compared to 78.98 percent in 2001 which is an increase of over 7.9 percent. Male and female literacy is 90.32 percent and 79.61 percent respectively. For 2001 Census, same figures stood at 85.87 percent and 75.20 percent showing a proportionate increase in literacy level for all the groups in Dehradun over the last 10 years. The total literates in Dehradun District were 1,280,462 of which males and females were 712,934 and 567,528 respectively as per 2011 Census (provisional data).

**Literacy Rates for Dehradun District**

Dehradun can be called the hub of school education in India. It has some of the most prominent boarding schools in the country such as The Doon School, Welhams Boys, Welhams Girls, Brightlands School, St. Joseph's Academy, Convent of Jesus and Mary etc. Overall, there are 2,177 schools in Dehradun District (MOHRD, 2004)⁵³.

Table 77: School education infrastructure in Dehradun

Type	Primary		Upper Primary	
	Number	Students	Number	Students
Government	974	66,896	373	28,867
Private	768	93,783	162	14,246
Total	1,742	160,679	535	43,113

⁵³ Ministry of Human Resource Development, Government of India. (<http://schooleducation.gov.in>). Imported from Uttarakhand stats.com

Table 78: Industrial Training infrastructure in Dehradun

Type of Institute	Number of Institutes	Enrolment
Industrial Training Institutes	8	1,043
Polytechnic	5	947
Total	13	1,990

Many important institutes are located in Dehradun. Some of the most prominent ones are Indira Gandhi National Forest Academy (IGNFA), Lal Bahadur Shahstri National Academy of Administration (LBSNAA), The Zoological Survey of India, Forest Research Institute, Indian Institute of Petroleum, ICFAI University and Uttaranchal Institute of Technology etc. In addition, Dehradun is home to the Indian Military Academy, which is the premier training institute for army officers in India. Dehradun has 2 medical colleges that have a combined intake capacity of 295 students for medical courses, 231 students for para medical courses and 210 students for nursing courses. For Vocational Training Programs, there are 2 Government ITI centres, covering 20 courses, which give importance to courses like Centre of Excellence with 125 seats, Fitter with 124 seats, Electrician with 80 seats and the remaining 450 seats distributed among the other 17 courses.

6. Youth Aspirations

The assessment team also held discussions with youth groups to understand their aspirations and preferred sectors of employment, willingness to migrate, training etc. Our key discussion points have been summarised below:

- ▶ In order to increase the employability of the youth and to attract them to agriculture it is important to develop *mandis* and create market linkages between producers and buyers;
- ▶ During our interaction with the youth, it was suggested that courses in the Government universities and ITI's need to be restructured keeping in line with the demand-based employment opportunities/industry driven in the District;
- ▶ The youth (ITI students met) highlighted their concerns on the existing infrastructure of the it is which include: shortage of raw material which hinders them in doing their practical work, High machine to student ratio resulting in very few students getting a chance to complete their job work. There is also a requirement of more instructors who can provide them practical training. Above all, the students feel that they face problem in interviews because of poor soft skills. The students feel that they need to improve their personality as well as communication skills.

7. Development Potential and stakeholder perspective

Horticulture and Floriculture

With only 18 percent of the total geographical area under cultivation, there is a huge potential to develop horticulture and floriculture related activities in the District. Fruits like apples, oranges and pears are grown widely in the District leading to an immense opportunity for setting up food processing units. Agriculture department officials shared that the transition of the farmers from traditional farming to cash based crops, is very fast. It was suggested to adopt an integrated approach to develop agriculture and food processing industry in the District. Another area that has development potential is floriculture. The water conditions are conducive and make the District ideal for growing flowers like gladiolus, Indian red roses, and lilies, which are high in demand in domestic as well as international market. The farmers find it as a lucrative option against traditional farming and are willing to adopt floriculture, if they are provided with necessary information and training. New ITIs under Public Private Partnership mode have floated a course on floriculture which can serve the purpose of

skill development and encourage farmers to undertake it as an alternative to traditional farming.

Industry and allied sector

Some of the top industrial sectors that have potential to generate employment in the District are pharmaceutical, electronic assembling units, food processing, packaging, handicraft, ayurvedic and cosmetics. According to the District Industry Center, there is shortage of skilled labour to perform the operations of the industry. The current workforce does not have industrial exposure and lack basic training. Most of the students coming from the existing ITIs lack practical exposure and have only theoretical understanding of their related trades (fitter, mechanist, and motor mechanic). Dehradun has a total of six ITIs out of which two are Government owned. Some of the courses offered by these institutes are on Stenography (Hindi), Mechanic Moto Vehicle, Machinist, Fitter, Electrician, and Draughtsman (Mechanical), Data Entry Operator, Carpenter, Plumber, and Turner. The most popular and in demand courses are for Fitter, Electrician, and Mechanic Moto Vehicle. Trades such as fitters, electricians, which were earlier thought to be male dominated have seen change in enrollment trends. A lot of female students have also enrolled in these courses after the announcement of 30 percent reservation by the State Government.

Apart from the traditional courses, the ITI have started Center for Excellence ('COE') that provides specialized broad based training on 6 modules. In an effort to provide multi-skill training to meet the skill requirement of particular industries, courses are being offered to meet the requirements of skilled manpower to operate specialized and technology driven machines. However, the students were not happy regarding the courses being offered by the COE. After completing the course they do not get jobs as most of the industries are not aware of COE. Those who even manage to get jobs in the private sector are poorly paid. On an average they are paid Rs. 4,000 to Rs. 4,500 per month. Industries as well as private companies prefer to take students who have completed 2 years of course work. Despite being multi- skilled they remain unemployed because there is less recognition by industries.

Involvement of industry in skill development has not been in force and therefore the students are not able to acquire industry specific training in the ITIS. In order to make the training, demand driven and relevant to the needs of the industry, courses and skill development system needs to be driven from the industries.

Services and allied sector

Since Dehradun is the capital of the State and is close to the National Capital, there is huge potential for domestic as well as foreign tourists. By developing formal and informal links through road, rail and air network the seasonality barriers can be overcome and year round tourist activities can be maintained. Food processing units have the potential to grow and generate large scale employment in the District. The District industry center has suggested offering short term courses on food processing technology through ITIs so as to cope with the local demand of the industries.

Based on our interaction with various stakeholders, some key areas which provide skill development opportunity have been provided in the table below:

Table 79: Sector and skill requirement

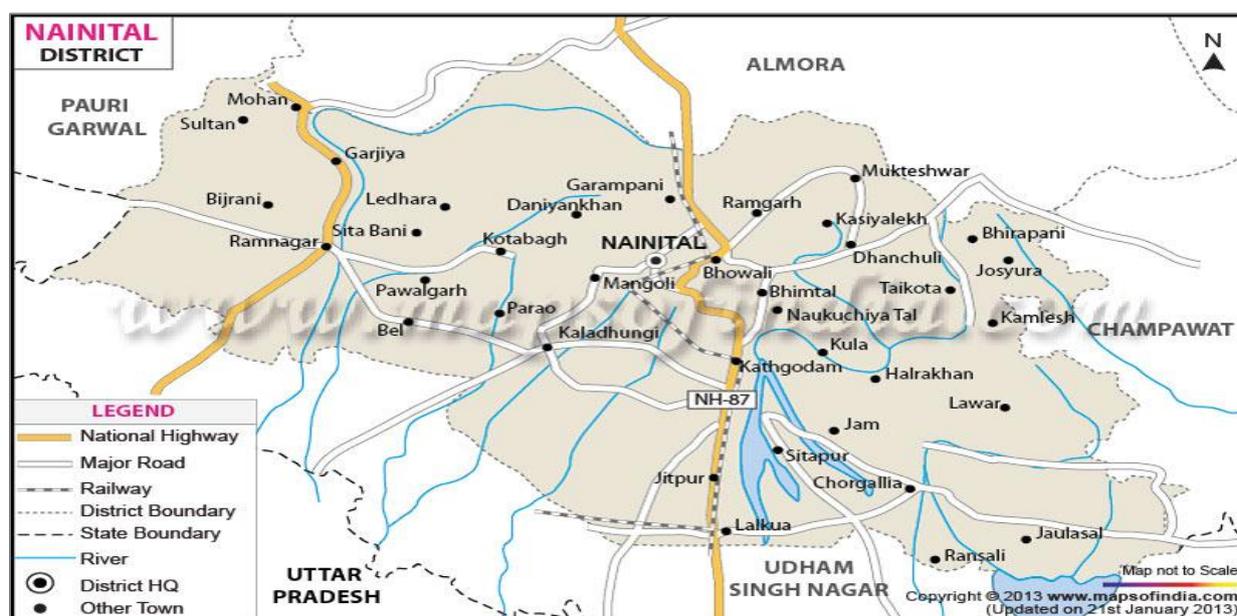
Sector	Skill Requirements
Primary	Skills development required in carrying floriculture and horticulture farming. Training required in the areas of integrated farming and building market linkages.
Secondary	Lack of skilled labour to perform industrial operations in automobile, electrical, and food processing industries. Existing ITIs to provide continuous supply of raw material and more trained instructors to complete job work. Industry exposure and training on CNC operated machines would strengthen the skills

Sector	Skill Requirements
	of trainees from ITI.
Tertiary	Plenty of opportunities exist in services sector- Insurance agents, retail business, hospital management, and banking. Skilled development work can be carried by offering short term course from ITIs.

8. Recommendations

Government	<ul style="list-style-type: none"> ▶ Focus on encouraging high-growth service sectors such as banking and retail services. Support ITIs and Government Colleges in developing curriculum on retail management, insurance, finance and banking. ▶ Support training and skilling up activities in organic farming, developing market linkages, and branding of organic produce.
NSDC	<ul style="list-style-type: none"> ▶ Support trainings related to floriculture and horticulture
Industry	<ul style="list-style-type: none"> ▶ Industries can collaborate with the exiting training providers to develop course structure and curriculum. ▶ Provide opportunities for on the job training to the youth.
Vocation training providers	<ul style="list-style-type: none"> ▶ Training providers can provide training for Insurance agents, retail business, hospitality, and banking since there is high demand for such professionals. ▶ Training is required on fodder management, shade installation, AI, and upkeep of health and hygiene of animals. ▶ Training on new methods, techniques, and mechanization in farming, with a special focus on commercial processing and value addition ▶ Skilling and up gradation of existing skills of machine operators on use of CNC machines. Additionally provide more seats or more avenues for training on popular courses like fitters, electricians and mechanics.

6.6 Nainital



Source: Maps of India

1. Introduction

The District of Nainital is spread over an area of 3,853 Sq Km (Census 2001) which forms approximately 7.2 percent of the total geographical area of the State. Located in the southern region of the State, Nainital is bordered by the Almora in the North, Pauri Garhwal and Uttar Pradesh in the west, Udham Singh Nagar in the South and Champawat in the East. The District has 8 blocks and 1,141 villages. Topographically, the District is divided into two areas on the basis of terrain viz. Krol and Bhabar. Krol refers to the hilly region while Bhabar refers to the foothills. The hilly region houses lakes like Bhimtal, Lokhamtal etc. while the foothills are known for tall grass grown in the region.

Table 80: Administrative profile of Nainital

Particulars	Nainital	Uttarakhand	Source
Area (in Sq Km)	3,853	53,483	http://www.census2011.co.in/census/state/districtlist/uttarakhand.html
Percentage share of State Geographical area	7.20	N.A	N.A
Number of Community Development Blocks	8	95	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWPDistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Number of Gram Panchayats	455	7,256	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWPDistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Total number of inhabited villages	1,141	16,793	http://www.censusindia.gov.in/2011-prov-results/paper2/data_files/uttarakhand/8-

Particulars	Nainital	Uttarakhand	Source
			adminunit-60-61.pdf

2. Demography

Nainital is home to 9.44 percent of the total population of the State. With a total population of 9.55 Lakh, it is the fourth most populated District of the State. Nainital had the fourth highest decadal growth rate in population in the State, increasing by 25.2 percent. Approximately, 61.06 percent of the population lives in rural areas and rest of the population lives in urban areas. According to Census 2001, the socially backward classes such as SC and ST represent 19.42 percent and 1.94 percent of the population respectively.

As per Census 2011 (provisional data), Nainital has a population of 9.55 Lakh of which males and females were 4.94 Lakh and 4.61 Lakh respectively. The District has a population density of 225 making Nainital the fourth most densely populated District of Uttarakhand. With regard to sex ratio, the District fares poorly compared to other Districts and the State average. The sex ratio for Nainital as per 2011 provisional Census figures was the fourth lowest in the State at 933 females per 1,000 males, much below the State average of 963 females per 1,000 males.

Table 81: Socio economic indicators for Nainital

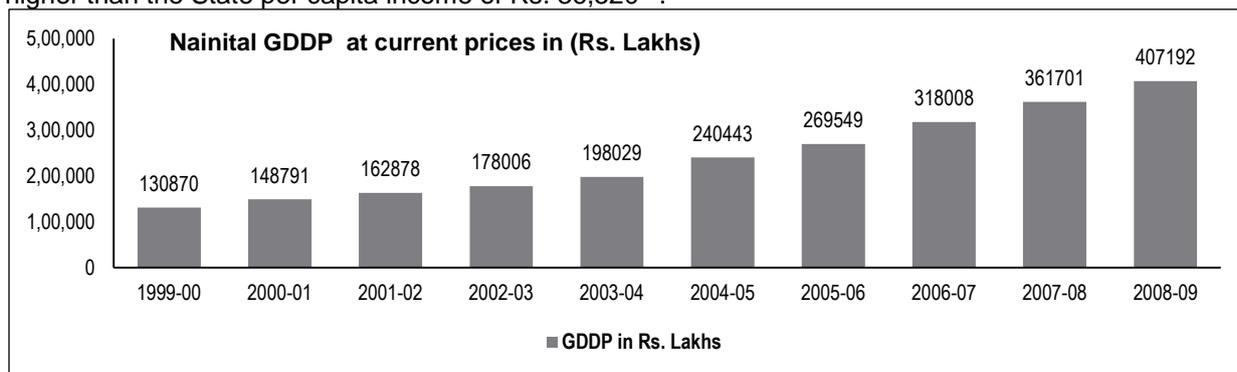
Population	Nainital	Uttarakhand	Source
Total population (in Lakh)	9.55	101.17	Census 2011(provisional data)
Total population (Male) (in Lakh)	4.94	51.54	Census 2011 (provisional data)
Total population (Female) (in Lakh)	4.61	49.63	Census 2011 (provisional data)
District share in State's population	9.44%	N.A	N.A
Density of population	225	189	Census 2011 (provisional data)
Decadal growth of population (2001-2011)	25.2%	19.17%	Census 2011 (provisional data)
Percentage of urban population	38.94%	30.55%	Census 2011 (provisional data)
Scheduled Caste population percentage of State population	19.4%	17.90%	Census 2001
Schedule Tribe population percentage of State population	1.94%	3%	Census 2001
Sex ratio	933	963	Census 2011 (provisional data)

3. Economy

As per the data collected by the Directorate of Economics & Statistics (2008-09), Nainital had a Gross District Domestic Product⁵⁴ of Rs. 407,192 Lakh which amounts to 10.14 percent of the total State GDP. The per capita income of Nainital for 2008-09 was valued at Rs. 41,180, which is significantly

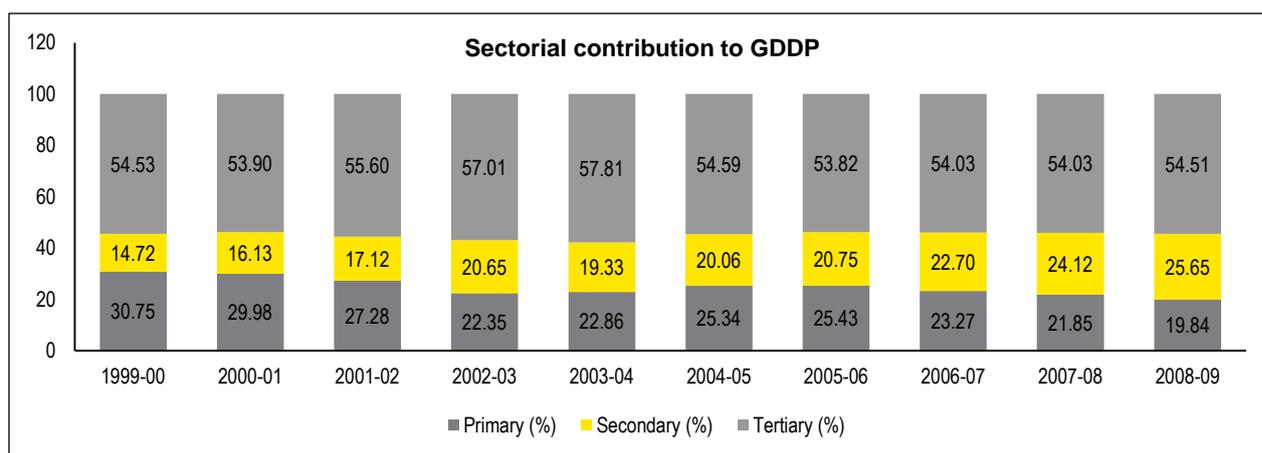
⁵⁴ *Statistical Diary, Government of Uttarakhand*

higher than the State per capita income of Rs. 36,520⁵⁵.



Source: Planning Commission, Government of Uttarakhand

The contribution of different sectors to the District Domestic Product stood at 19.84 percent, 25.65



percent and 54.51 percent for the Primary, Secondary and Tertiary sectors respectively.

Source: Planning Commission, Government of Uttarakhand

Primary Sector

As per the Ministry of Agriculture⁵⁶, in the year 2009-10, 74,734 hectares of land or a little over 18 percent of the total geographical area was brought under cultivation in the District of Nainital. Wheat is the primary crop with a gross cropped area of 23,981 hectares. Fruits and vegetables cover an area of about 12,998 hectares in Nainital. Apart from these, other major crops include rice, maize and sugarcane with a total cultivated area of 13.33, 4.48 and 4.0 thousand hectares respectively. In addition to this, Nainital also has 4,990 hectares of area under cultivation for Soya bean.

Almost about 60 percent of the rural population in Nainital is dependent upon Agriculture for their livelihood. The plain areas of the District are more fertile than the hilly areas. 80 percent of the farmers in the District are small or marginal farmers with up to one hectare of land. 5 blocks out of 8 in the District fall in the hilly areas.

The Department of Agriculture in the District is actively promoting Organic agriculture. Under this

⁵⁵ <http://planningcommission.nic.in/plans/stateplan/present/Uttarakhand.pdf>

⁵⁶ Information sourced from the Web Based Land Use Statistics Information System website (<http://lus.dacnet.nic.in/>)

initiative 'Model Villages' have been identified where this programme is underway⁵⁷.

Secondary Sector

Nainital is spread over both hilly and plain terrain. The blocks of Haldwani, Ram Nagar and Kotabag fall among the plain areas. Those in the hilly terrain are Bhimtal, Dhari, Ramgarh, Betalghat and Okhalkanda. These areas are rich in natural resources and have primarily medium and small industrial units. These also include cottage industries. The following types of industrial units are noted to be present in Nainital⁵⁸:

Mineral products related	Stone crossing, soap stone etc.
Forest products related	Furniture, plywood, medicines etc.
Electronics and services related	Computers, hardware, software, construction material etc.
Handicrafts	Candle making, wood carving, artificial jewellery etc.

Besides there are some big industrial units like that of Century Paper Mills, HMT Watches, Bio-life Food Pvt. Ltd etc.

Tertiary Sector

Increasingly the services sector has seen a boost in the District of Nainital mainly as a consequence of the impetus provided to the agriculture and industrial sectors. These include tourism, basic facilities, allied activities and services. Under the services sector, hotels, tourist guides, accommodation, roadside dhabas, cyber café, milk parlors, road transportation services, motor garages, tyre retreading, small shops, education, tent houses, motels etc. are included.

Tourism is the biggest contributor in the services sector, in the District. Nainital is one of the most popular tourist spots in the State of Uttarakhand and is known for its lakes- Naini Lake, Bhimtal, Saattal, Khupratal and Naukuchiatal. Other popular tourist destinations within the District include Mukteshwar, Dhari, Ramgarh etc. Nainital's natural lakes, forest cover and high peaks make it a very scenic destination for tourists.

The Government of Uttarakhand in its initiative to promote tourism in the State runs the Veer Chandra Singh Garhwali Tourism self-employment scheme through which unemployed youth are provided loans for setting up small tourism oriented businesses.

Despite communication and road transportation facilities being relatively better in this District as compared to other hilly Districts of Uttarakhand, some blocks like Ram Garh, Dhari and Okhalkanda suffer serious setbacks due to a lack of petrol pumps and private health clinics. Also, these blocks face a lack of basic tourism related service providers like quality restaurants, fast food centres, motor workshops, souvenir shops etc.

4. Workforce Distribution

The total population of Nainital in 2012 was 9.76 Lakhs which is expected to increase to 10.92 Lakhs by 2017 and 12.22 Lakhs by 2022. As per our research methodology, the incremental manpower

⁵⁷ Potential Linked Credit Plan for XII Five Year Plan (2012- 2013 to 2016-2017) with specific reference to 2013-14; Nainital; National Bank for Agriculture and Rural Development, Uttarakhand Regional Office, Dehradun

⁵⁸ Potential Linked Credit Plan for XII Five Year Plan (2012- 2013 to 2016-2017) with specific reference to 2013-14; Nainital; National Bank for Agriculture and Rural Development, Uttarakhand Regional Office, Dehradun

supply will be about 2.35 Lakhs by 2022.

Table 82: Estimated workforce distribution in Nainital

Year	2012	2017	2022
Total population	9,76,833	10,92,987	12,22,952
Working age population	6,00,626	6,87,952	7,87,975
Labour force	3,66,367	4,71,775	6,02,001
Work force	3,57,523	4,58,294	5,87,468
Incremental Manpower supply		1,05,407	2,35,633

As per the table 83 below, incremental demand for human resource by 2022 for top five sector would be in Agriculture (0.59 Lakhs), Tourism, travel, hospitality & trade (0.55 Lakhs), Manufacturing (0.29 Lakhs), Education and Skill Development (0.26 Lakhs), and Food processing (0.25) The total demand for skilled semi-skilled and skilled manpower by 2017 would be 0.18 Lakhs, and 0.33 Lakhs. Similar demand for semi-skilled and skilled manpower by 2022 would be 0.27 Lakhs, and 0.47 Lakhs.

Table 83: Incremental Human Resource Demand in Nainital

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
Agriculture	59,762	19,424	5,550	2,775	22,409	6,403	3,201
Food processing	25,946	7,695	-	1,924	13,062	-	3,265
Metal and Mining	9,726	2,239	848	1,261	2,770	1,049	1,560
Manufacturing	28,782	6,025	2,281	3,393	8,798	3,331	4,954
Electricity, Gas and Water	823	266	120	-	302	136	-
Building, Construction & Real Estate Services	12,870	4,550	899	169	5,875	1,160	218
Auto & Auto Components	5,148	699	923	541	965	1,274	746
Tourism, travel, hospitality & trade	55,903	10,524	3,480	7,343	16,663	6,045	11,848
Transportation, logistics, warehousing & packaging	24,543	6,333	2,845	-	10,602	4,763	-
Postal and communication	1,435	-	176	476	-	211	571
Banking, Financial Services & Insurance	3,074	-	371	1,002	-	459	1,242
Real estate and Banking	2,062	748	148	28	922	182	34

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
services							
Public administration	2,630	268	858	140	289	924	151
Education & Skill Development	26,539	-	-	10,454	-	-	16,086
Healthcare	7,535	-	(441)	3,409	-	1,044	3,523
Other community services	1,013	143	190	143	161	215	161
Others	-	-	-	-	-	-	-
Total	267,792	58,914	18,248	33,057	82,818	27,195	47,561

During both the periods i.e. 2012 -17 and 2017 - 2022, there would be an excess supply of manpower in minimally skilled, whereas there would be requirement of semi-skilled and skilled manpower during both the reference period. Based on our stakeholder interaction, some possible areas of skill gap have been provided below:

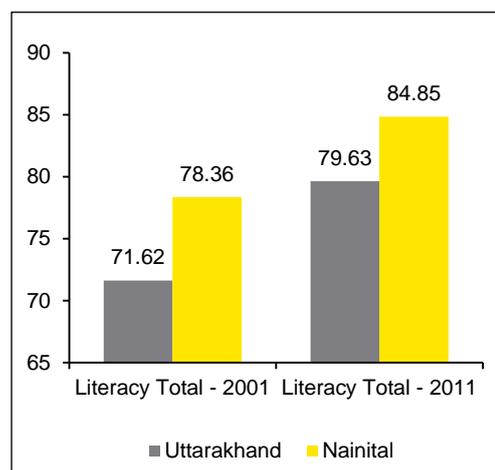
- ▶ Agriculture: Lack of knowledge to develop large scale commercial orchards; organic farming;
- ▶ Tourism, travel, hospitality & trade: Need for training on soft skills for local hotels, restaurants, waiters, office boys; spoken English training for tour guides, nature interpreters;
- ▶ Construction materials & building hardware: Require trained manpower having knowledge on identification of minerals, stones, and experience on excavation techniques;

Table 84: Incremental Demand-Supply Gap in Nainital

Skill Category	2012-17	2017-22
Minimally skilled	(17,177)	(8,178)
Semi-skilled	6,125	10,160
Skilled	15,862	25,367
Total	4,811	27,348

5. State of Education

Average literacy rate of Nainital in 2011 (as per provision Census figures) was 84.85 percent compared to 78.36 percent in 2001 which is an increase of over 8 percent. Gender wise male and female literacy is 91.09 percent and 78.21 percent respectively. For 2001 Census, same figures stood at 86.32 and 69.55 showing a proportionate increase in literacy level for all the groups in Nainital over the last 10 years. The total literates in Nainital District were 706,750 of which males and females were 391,234 and 315,516 respectively as per 2011 Census (provisional data).



Literacy Rates for Nainital District

There are 1,780 schools in Nainital District (District Elementary Education Report Card for 2010- 2011). Schools in rural area were 577 and in urban area were 1,203. The numbers of children enrolled in primary school (class I-class V) were 82,547 and in upper primary school (class VI- class VIII) were 48,198. There are 4 degree colleges and one university i.e. Kumaon University⁵⁹. For technical education, the polytechnic institute provides 3 year diploma courses in various streams like Civil, Mechanical, Electronics, Electrical and 2 year diploma courses in pharmacy, computer application, and short hand-secretarial work. Additionally, various private universities affiliated to Kumaon University offer MCA, B.Ed., and MBA courses.

Table 85: School education infrastructure in Nainital

Type	Primary		Upper Primary	
	Number	Students	Number	Students
Government	979	53,179	405	29,989
Private	262	39,577	92	9,506
Total	1241	92,756	497	39,495

Table 86: Industrial Training infrastructure in Nainital

Type of Institute	Number of Institutes	Enrolment
Industrial Training Institutes	10	743
Polytechnic	3	1,118
Total	13	1,861

6. Youth Aspirations

The assessment team also held discussions with youth groups to understand their aspirations and preferred sectors of employment, willingness to migrate, training etc. Our key discussion points have been summarised below:

⁵⁹ http://www.indianetzone.com/49/nainital_district.htm. (accessed on 04 March 2013)

- ▶ In order to increase the employability of the youth and to attract them to agriculture it is important to develop *mandis* and create market linkages between producers and buyers.
- ▶ During our interaction with the youth, it was suggested that courses in the Government universities and ITI's need to be restructured keeping in line with the demand-based employment opportunities/industry driven in the District.

7. Development Potential and stakeholder perspective

The District of Nainital is a major revenue centre in the Kumaon region of the State of Uttarakhand. In discussions with a range of stakeholders- from Government officials to industry representatives and students; the following sectors appeared as those with a growth potential in the District.

Horticulture and organic produce

The District has favorable condition to develop apple orchards which are grown in plenty in Ramgarh Mukteshwar belt. Beside this Peach, Pears, Apricots, Citrus fruits, Kafal, Strawberry, Hill Banana are grown in hilly track. There is huge potential to develop large scale commercial orchards for different fruits and sell in domestic as well as International market. Skill based training if provided on organic farming can help the farmers in getting better price for their crops and help in reviving the interest of youth and farming communities.

Mining and Minerals

Major minerals of the District are Copper, Rock-Phosphate, Iron, Lime Stone and stone. There is enormous scope to develop skill based training for Gems and Jewellery Industry. Efforts can be made to develop cluster of micro and small medium enterprises of stone crushers industry in and around Haldwani.

Tourism

Nainital is a popular tourist destination in the State with an inflow of both national and international tourists. It is one of the noted hill stations of the State with considerable historical relevance from the time of British rule in India. Scenically, it is noted for its green mountains and lush beauty.

However, in spite being a core contributing sector to the economy, stakeholders were of the opinion that the full potential of this sector was not being tapped in the State. Firstly, a common concern was accessibility. It was shared that road infrastructure is not very good. This is critical because being a hilly terrain; road transportation is most common medium of commute to and from the District. Further, lack of quality manpower was a major concern in the hospitality sector. Even though there is a high presence of hotels, guest houses and restaurants in the District, there is a high scope of improving the standards of service. Respondents from the tourism and hospitality industry have complained of high staff turnovers and lack of trained staff. Since tourism has been thriving in the area, age-old practices have come down with respect to hospitality. Modernizing and professionalizing these is seen as a challenge and the need of the hour by industry representatives.

With respect to training of hospitality professionals, there is The Kumaon Catering University and The Institute of Hotel Management (IHM), Catering Technology & Applied Nutrition, Dehradun in the region. Better quality hotels absorb students from these institutes or they go outside the State to work. Because overall hospitality services are not of a very high standard, employees are mostly trained on-the-job. Also, remuneration is not satisfactory in the sector within the District; there is a high attrition rate among employees. There is an urgent requirement to develop hospitality skills in the region especially those of cooks, waiters, hotel management, communication skills and English speaking.

Professional Services

Nainital is one of the better literate Districts of the State. Being a tourism hub, the exposure of people is better and consequently the aspirations of youth are high. There is an obvious inclination of youth to take up Government and other professional services like Law, Engineering, Nursing etc.

However, the youth faces a challenge because of lack of soft skills. There are very limited avenues for English speaking and Personality Development. Even though there are opportunities for English speaking programmes, they were reportedly expensive. Also, no coaching centres for professional high-skill services like Law, Engineering, and UPSC were available in the District.

Stakeholders were of the opinion that there is an urgent need for setting up skill development avenues on Personality Development, Computer/Internet skills, Training/coaching centres for competitive examinations like Engineering, UPSC, Law, Para- Medical and Nursing studies.

Based on our interaction with various stakeholders, some key areas which provide skill development opportunity have been provided in the table below:

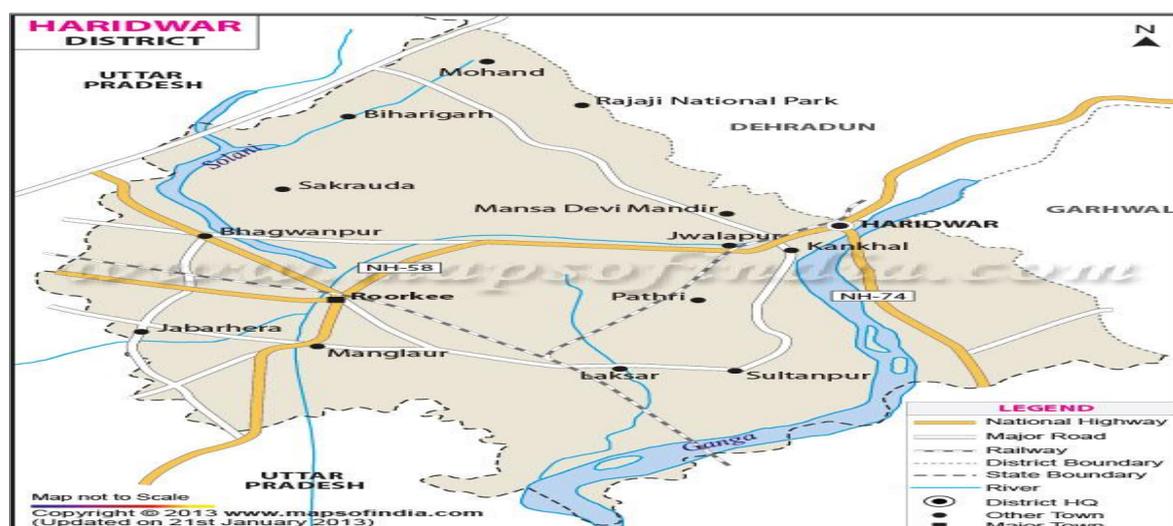
Table 87: Sectors and skill requirement

Sector	Skill Requirements
Primary	Require training on Organic farming and certification system that can help farmers in getting a better price for their crops.
Secondary	Skill based training required for employability in mining and mineral industry. Requirement of trained manpower to design high quality wood carving, and furniture products.
Tertiary	Promotion of tourism required from an institutional level; Hospitality for allied tourism businesses like tour and travel operators, bed and breakfast businesses etc.; Hotel Management Higher education avenues and professional training opportunities are limited- Nursing, Banking, UPSC; English Speaking, Computer Training and Personality Development

8. Recommendations

Government	<ul style="list-style-type: none"> ▶ Support skilling and training activities in computer courses by recruiting qualified and competent teachers and improving infrastructure. ▶ Promote training and skill development in areas of orchard farming, and organic farming ▶ Government should encourage private players to set up professional coaching institutes that offer training for services like Law, Engineering, and Medical Examination.
NSDC	<ul style="list-style-type: none"> ▶ Support programmes related to skill up gradation especially for gem, Jewellery based industries. ▶ Support training providers in providing skill based training on organic farming, and organic certification process.
Industry	<ul style="list-style-type: none"> ▶ Mining and Mineral Industries can tie up with ITIs to offer summer placement opportunities for students.
VTC	<ul style="list-style-type: none"> ▶ VTC can support training programmes on Gems and Jewellery, as the District has rich mineral reserves. ▶ VTC can support short training programs for waiters, front office boys, cab drivers on soft skills

6.7 Haridwar



Source: Maps of India

1. Introduction

Haridwar District is spread over an area of 2,360 sq. km which forms approximately 4.4 percent of the total geographical area of the State. Administratively, the District has 6 blocks and 612 villages. Haridwar is surrounded by Dehradun in the north, Pauri Garhwal in the east and the Uttar Pradesh Districts of Muzaffarnagar and Bijnor in the south and Saharanpur in the west. Haridwar has religious importance for the Hindus and is the gateway to the four pilgrimages of Uttarakhand. The District has developed as a major commercial hub due to its excellent road connectivity with the neighboring States and its proximity to commercial and manufacturing hubs of Saharanpur, Muzaffarnagar, Meerut, Noida, and the national capital.

Table 88: Administrative profile of Haridwar

Particulars	Haridwar	Uttarakhand	Source
Area (in Sq. Km)	2,360	53,483	http://www.census2011.co.in/census/state/districtlist/uttarakhand.html
Percentage share of State Geographical area	4.41%	N.A	N.A
Number of Community Development Blocks	6	95	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWPDistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Number of Gram Panchayats	298	7,256	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWPDistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Total number of inhabited villages	612	16,793	http://www.censusindia.gov.in/2011-prov-results/paper2/data_files/uttrakhand/8-adminunit-60-61.pdf

2. Demography

Haridwar is home to 19.04 percent of the total population of the State and with its 19.2 Lakh inhabitants it is the most populated District of the State. It has had a decadal growth rate in population of 33.16 percent. According to Census 2001, the socially disadvantaged groups such as SC and ST represented 21.7 percent and 1.22 percent of the population respectively.

The Sex Ratio in the District fares poorly compared to other Districts and the State average. The sex ratio for Haridwar as per Census 2011 (provisional data) is 879 females per 1,000 males, much below the State average of 963 females per 1,000 males. Census 2011 (provisional data) suggest a population density of 817 in 2011 making Haridwar the most densely populated District of Uttarakhand.

Table 89: Socio economic indicators for Haridwar

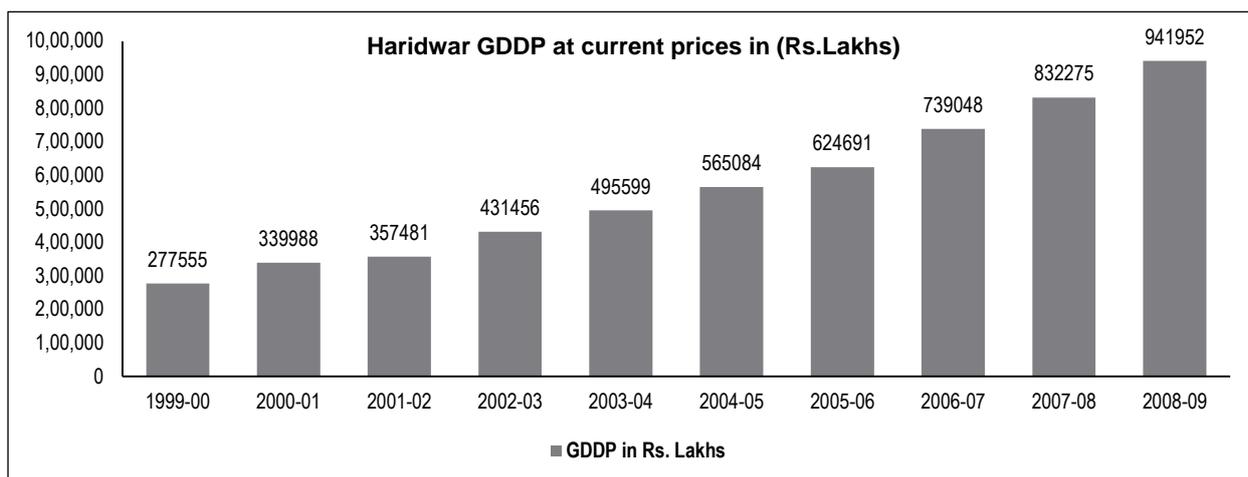
Population	Haridwar	Uttarakhand	Source
Total population (in Lakh)	19.2	101.17	Census 2011 (provisional data)
Total population (Male) (in Lakh)	10.25	51.54	Census 2011 (provisional data)
Total population (Female) (in Lakh)	9.01	49.63	Census 2011 (provisional data)
District share in State's population	19.05%	N.A	N.A
Density of population	817	189	Census 2011 (provisional data)
Decadal growth of population (2001-2011)	33.16%	19.17%	Census 2011 (provisional data)
Percentage of urban population	37.77%	30.55%	Census 2011 (provisional data)
Scheduled Caste population percentage of State population	21.7%	17.90%	Census 2001
Schedule Tribe population percentage of State population	1.22%	3%	Census 2001
Sex ratio	879	963	Census 2011 (provisional data)

3. Economy

As per the data collected by the Directorate of Economics & Statistics (2008-09), Haridwar had a Gross District Domestic Product⁶⁰ of Rs. 941,952 Lakh which amounts to 23.46 percent of the total State GDDP. The per capita income of Haridwar for 2008-09 was valued at Rs. 50,227, which is significantly higher than the State per capita income of Rs. 36,520⁶¹.

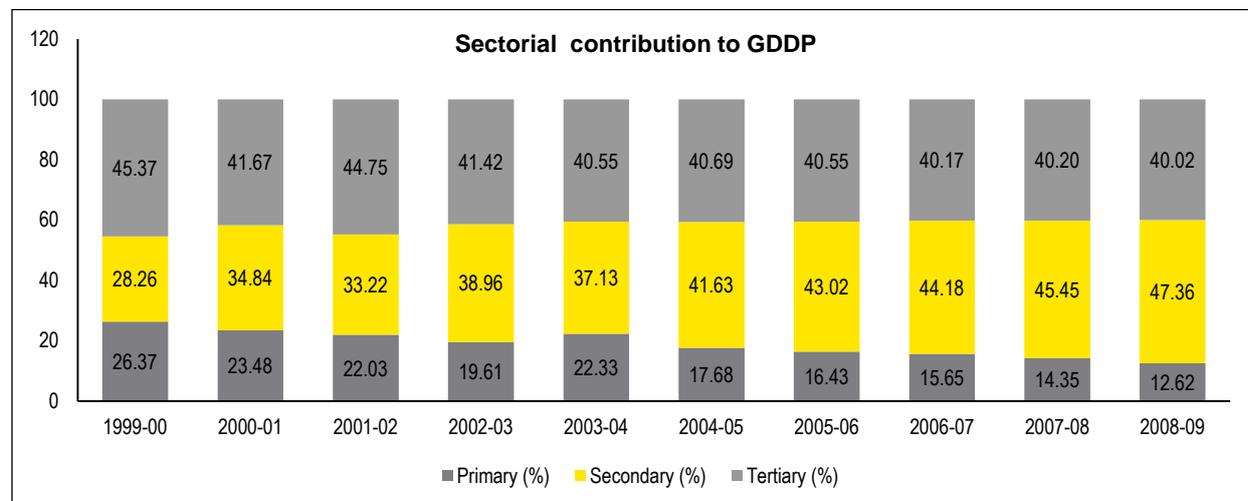
⁶⁰ *Statistical Diary, Government of Uttarakhand*

⁶¹ <http://planningcommission.nic.in/plans/stateplan/present/Uttarakhand.pdf>



Source: Planning Commission, Government of Uttarakhand

Sector wise contribution to the GDDP is 12.62 percent, 47.36 percent and 40.02 percent of the Primary, Secondary and Tertiary sectors respectively.



Source: Planning Commission, Government of Uttarakhand

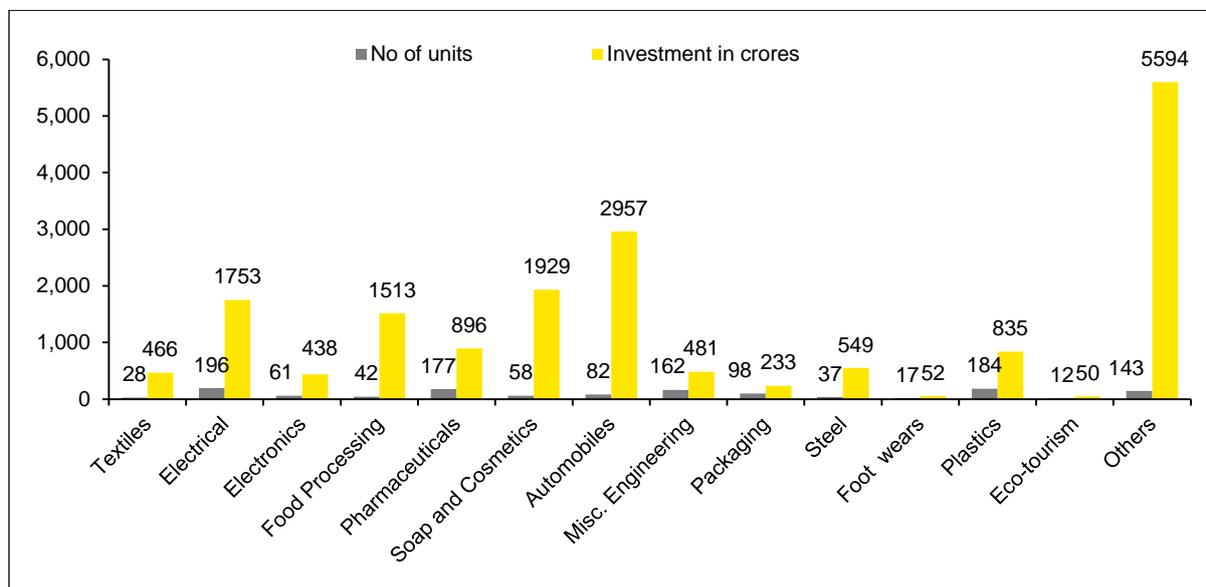
Primary Sector

Majority of the population in Haridwar District is dependent upon agriculture for their livelihood. Sugarcane is the main cash crop of the District which is cultivated on 52.06 percent of the total irrigated area. Following sugarcane, wheat is cultivated on 31.26 percent of the total irrigated area, paddy on 9.38 percent, pulses on 1.01 percent, and other crops on 6.29 percent. Some of the important crops of the District are wheat, paddy, maize, and pulses. Out of the total cropped area of 118,376 hectares, 10,824 hectares is irrigated. Owing to better irrigation facility, the intensity of land use and land productivity is high. 63 percent of the landholding is less than 1 hectare, and another one-fifth of the total agriculture area has 1-2 hectare size of landholding.

Secondary Sector

Before the implementation of special concession package for the industries i.e. prior to 07.01.2003, the total investment in 1,637 Small and Medium Scale Industries was Rs. 475.38 crores. It generated an employment for 17,251 people. After the implementation of special concession zone in 2003, an addition of 1,297 number of small, medium, and large scale industries were set up with an investment of 17,746.37 crores. The State Industrial Development Corporation of Uttarakhand ('SIDCUL') has

now established one new 'industrial development zone' in the District, adjacent to Shivalik Nagar near Haridwar, to encourage industrialization. With industrial giants like Hindustan Lever, Dabur, Mahindra & Mahindra, Havells, and Hero Honda there is huge requirement of mechanics, electricians, fitters, mechanic automobile, turners and technocrats. Due to special concessional industrial package provided by Government of India, large numbers of units have been set up in the District. Industries in SIDCUL enjoy 100 percent Central Excise exemption for 10 years, 100 percent tax exemption for first 5 years and 30 percent for next 5 years. Industries also enjoy a subsidy of 15 percent on capital investment subject to a maximum investment of Rs. 30 Lakh.



Source: DIC and EY Analysis

Tertiary Sector

Haridwar witnesses 8 million religious tourists every year. The total tourist arrival in 2010 was 18,837,125 domestic tourists and 29,555 international tourists. At present there are 180 Dharamshalas, 400 hotels, and 220 ashrams which are not sufficient to accommodate the present influx of tourists. Considering the unlimited tourism potential in the District, there is immense scope of undertaking projects with Public Private Partnership to develop quality accommodation facilities, specialized transport facilities during peak season, and religious fairs.

4. Workforce Distribution

The total population of Haridwar in 2012 was 19.83 Lakhs which is expected to increase to 22.88 Lakhs by 2017 and 26.40 Lakhs by 2022. As per our research methodology, the incremental manpower supply will be about 3.18 Lakhs by 2022.

Table 90: Estimated workforce distribution in Haridwar

Year	2012	2017	2022
Total population	19,83,009	22,88,265	26,40,512
Working age population	12,28,463	15,06,516	18,47,504
Labour force	7,25,798	8,65,528	10,43,798
Work force	7,11,775	8,53,578	10,23,631

Incremental Manpower supply		1,39,730	3,18,000
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As per the table 57 below, incremental demand for human resource by 2022 for top five sector would be Manufacturing (1.47 Lakhs), Tourism, travel, hospitality & trade (0.98 Lakhs), Agriculture (0.81 Lakhs), Building, Construction & Real Estate Services (0.25 Lakhs), and Transportation, logistics, Warehousing & packaging (0.23 Lakhs). The total demand for semi-skilled and skilled manpower by 2017 would be 0.45 Lakhs, and 0.61 Lakhs. Similar demand for semi-skilled and skilled manpower by 2022 would be 0.72 Lakhs, and 0.89 Lakhs.

Table 91: Incremental Human Resource Demand in Haridwar

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
Agriculture	81,679	26,599	7,600	3,800	30,577	8,736	4,368
Food processing	15,882	5,337	-	1,334	7,368	-	1,842
Metal and Mining	465	108	41	61	131	50	74
Manufacturing	147,609	18,207	24,025	14,077	29,520	38,954	22,825
Electricity, Gas and Water	836	270	121	-	307	138	-
Building, Construction & Real Estate Services	25,523	9,020	1,782	334	11,654	2,302	432
Auto & Auto Components	9,634	1,155	1,524	893	1,960	2,587	1,516
Tourism, travel, hospitality & trade	98,031	19,444	5,295	13,100	30,476	8,927	20,791
Transportation, logistics, warehousing & packaging	23,177	6,141	2,759	-	9,851	4,426	-
Postal and communication	3,046	-	374	1,012	-	448	1,212
Banking, Financial Services & Insurance	4,595	-	554	1,499	-	686	1,856
Real estate and Banking services	15,154	5,495	1,085	204	6,780	1,339	251
Public administration	2,026	206	661	108	222	712	117
Education & Skill Development	41,247	-	-	16,247	-	-	25,000
Healthcare	17,698	-	(1,035)	8,006	-	2,451	8,276

Other community services	3,543	499	665	499	564	752	564
Others	-	-	-	-	-	-	-
Total	490,146	92,481	45,452	61,174	129,410	72,508	89,122

During the period 2012-2017 there would be excess supply of minimally skilled manpower whereas there would be great demand for semi-skilled and skilled manpower during 2017 and 2022. Based on our stakeholder interaction, some possible areas of skill gap have been provided below:

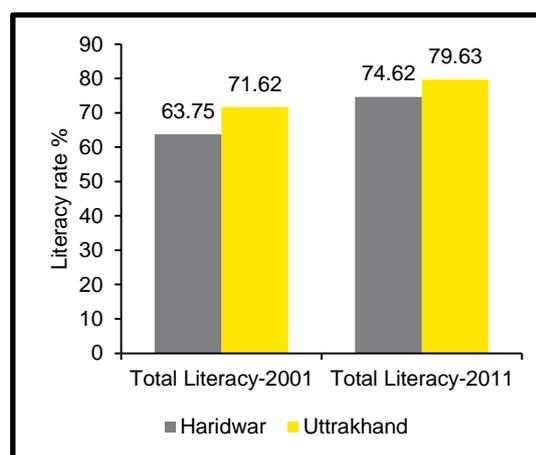
- ▶ Construction materials & building hardware: Requirement of trained manpower especially electricians, fitters; training and exposure on CNC operated machines;
- ▶ Tourism, travel, hospitality & trade: Trained cab drivers; waiters, tourist guides; soft skills;
- ▶ Agriculture: Lack of knowledge on value addition components of sugarcane crop; training on packaging of agro produce; artificial insemination technology.

Table 92: Incremental Demand-Supply Gap in Haridwar

Skill Category	2012-17	2017-22
Minimally skilled	(18,721)	(12,516)
Semi-skilled	33,279	56,951
Skilled	44,819	68,334
Total	59,377	112,769

5. State of education

The literacy rate of Haridwar has been below than the State's average in 2011 Census. Average literacy rate of Haridwar in 2011 (as per provision Census figures) is 74.62 percent as compared to the State's literacy rate of 79.63 percent. Gender wise male and female literacy is 82.26 percent and 65.96 percent respectively. State level figures stood at 88.33 percent and 70.70 percent respectively, showing that the District has lower literacy levels than State averages. The literacy level in urban area of the District is lower than the State average (82.45 percent as against 85.20 percent for State). The rural area of the District too lags behind the State average figure (it is 69.66 percent for State being 77.11 percent).



Literacy Rates for Haridwar District

In terms of the total school enrolment for the same year, the District stood at 1st rank in the State whereas the enrolment for SC, ST and OBC it was ranked 1st, 3rd and 1st respectively). There are a total of 1,816 schools in the District, which covers 8 percent of the total schools in the State. The total enrollment of 1.39 Lakh is also the highest enrollment in the State. There are 16 colleges and 4 technical universities in Haridwar District. Some of the prominent colleges are Gurukul Kangri Universities, Chnimaya Degree Colleges, S.N.M.J Degree College, Mahila Vidhiyalya College, Om Bio- Sciences & Pharma, and Rishikul Ayurveda College.

Table 93: School education infrastructure in Haridwar

Type	Primary		Upper Primary	
	Number	Students	Number	Students
Government	697	101,037	191	23,553
Private	567	98,539	143	25,118
Total	1,264	199,576	334	48,671

Table 94: Industrial Training infrastructure in Haridwar

Type of Institute	Number of Institutes	Enrolment
Industrial Training Institutes	7	342
Polytechnic	1	334
Total	8	676

6. Youth Aspirations

The assessment team also held discussions with youth groups to understand their aspirations and preferred sectors of employment, willingness to migrate, training etc. Our key discussion points have been summarised below:

- ▶ During our interaction with youth, they expressed their eagerness to join heavy engineering, and automobile industries in the SIDCUL area. They want to acquire skills to operate new machines that are operational in the industries. At present the current state of training infrastructure does not have adequate infrastructure to provide training on new machines.
- ▶ As Haridwar being a pilgrimage center, some of the youth expressed their willingness to acquire skills to run dairy operations on a commercial scale. Lack of training and support infrastructure gaps needs to be fulfilled for running viable and scalable models of dairy operation in the District.
- ▶ Youth were keen to open restaurants, accommodation, small hotels. They expressed their desire to receive training, along with initial loan assistance to set up their own business.

7. Development Potential and stakeholder perspective

Agriculture

Sugarcane is the main cash crop and has the least mortality in comparison to other crops. At present there are 3 private Sugar Mills in Haridwar i.e. Luxmi Sugar Mill in Iqbalpur, Uttam Sugar Mill in Liberhedhi, and Luxor Sugar Mill. The total production of sugarcane in 2009-2010 was 623.77 quintals covering an area of 7,666 hectares. Sugarcane production thus is one area that can generate large scale employment. Due to poor market linkages the production is limited and based on demand of buyers. Most of the cane growers do not know the proper methods of sugarcane cultivation. Skill development in scheduling and harvesting technique needs to be provided to the farmers to ensure continuous supply, during the crushing season. Another area that needs focus is provision of training for irrigation management principles and not the grandfathering approach towards irrigation. Value addition like production of sugarcane juice, jaggery sweets, and granular jaggery down the value chain will require skilled manpower to conduct the processing operations. Moving up the value chain will require training on brand building, and packaging that can be organized in consultation with Indian Institute of Packaging Technology, and Indian Institute of Foreign Trade.

Animal Husbandry and commercial dairy

Haridwar being one of the most important holy places for Hindus receives a vast flow of domestic and international tourists throughout the year. The food habits are primarily vegetarian and consumption of vegetables along with milk and milk products are high in demand. The local demand of milk is quite high and it is being catered by adjoining Districts such as Saharanpur, Naziabad, and Bijnor. Based on the existing demand, there is enormous scope for commercial dairy in the District. The total population of dairy animals is 191,403 out of which 60,447 are cows and 130,956 are buffaloes. There are 16 animal hospitals along with 33 Artificial Insemination facilities. Out of the 33 facilities 26 are Government owned and the rest is privately held. The District has 253 milk societies out of which 126 are functioning. However, the District has huge potential for commercial dairy. A cluster based approach is required to scale up dairy activities in the District. Some of the factors that are considered critical for the growth of commercial dairy are as follows:

- ▶ Interaction with the Chief Agriculture Officer suggested that instant credit should be provided to farmers from some of the lead banks like Punjab National Bank, State Bank of India, and Oriental Bank of commerce to purchase at least 4-5 animals.
- ▶ Based on a project mode, effort should be made on backward and forward linkages to develop dairy as a potential area for large scale employment.
- ▶ Under the backward linkage, focus should be provided on fodder management, installation of proper shades, availability of water, and health of the animal.
- ▶ At present there is shortage of skilled manpower that can perform complex dairy related operations. Only 5 scientists are present in the Krishi Vigyan Kendra (KVK), which is difficult to cater 510 villages. There is requirement of more scientist and skilled manpower to cater to the

demand of dairy related services in the District.

Industry and allied sectors

Considering the present context and rising demand for skilled manpower to meet the requirements of industries in SIDCUL, there is scope of skill development and training in operating CNC operated machines. The Chairman of SIDCUL manufacturers association agreed that the trainees from ITI should be provided with industrial exposure and the current courses of ITI should be amended as per the industry requirements to cater to the needs of industries. Haridwar has 5 ITIs out of which 3 ITIs are running under PPP mode. Some of the courses offered by the ITIs under PPP mode – motor mechanic, auto, electronics, electrical are affiliated through State Council for Vocational Training (SCVT). The students are facing problem in getting jobs as these are not recognized nationally. Even the industries prefer candidates having diploma affiliated from National Council for Vocational Training (NCVT). However, the 3 ITIs running under PPP mode are equipped with latest technology and provide hands on experience on new machines. It also houses modern spare parts and tools that assists student in completing their job work. Contrastingly, the other 2 ITIs will require infrastructural support including training support to the teachers. The machineries employed in these ITIs are old and outdated and are no more in use by the industries. Due to lack of training in handling new machinery and technology, the students face problem in getting jobs. More industrial exposure and opportunities to work as trainees in manufacturing industries, assembling units, and steel and metallurgy industries would help in developing the skill of existing manpower. Some of the factors that are considered to be critical for growth of industries are as follows:

- ▶ Requirement of trained manpower especially electricians, and fitters. The present workforce would require more training and exposure on CNC operated machines and new technology being used in the industries in SIDCUL.
- ▶ The present physical infrastructure needs to be strengthened by providing direct rail connectivity to the SIDCUL industrial area. During the discussion with the Chairman, SIDCUL Manufacturers Association, Uttarakhand, it was suggested to extend rail connectivity to the industrial area for fastening the pace of supply of industrial goods across the country.
- ▶ Industries in SIDCUL are operational on latest technology and would require continuous intermittent power supply. At present the power supply in the industrial area is not continuous.
- ▶ Develop infrastructure like road and rail connectivity to receive raw materials and semi processed products.

Services and allied sector

Haridwar witnesses 8 million religious tourists every year. The total tourist arrival in 2010 was 18,837,125 domestic tourists, and 29,555 international tourists. At present there are 180 Dharamshalas, 400 hotels, and 220 ashrams which are not sufficient to accommodate the present influx of tourists. Considering the unlimited tourism potential in the District, there is immense scope of undertaking projects with Public Private Partnership to develop quality accommodation facilities, specialized transport facilities during peak season, and religious fairs. Potential areas of skill development include service providers like cab drivers, waiters, hoteliers and tourist guides. While the demand for these is being met given that religious tourism is thriving in the District, it is seen as imperative to provide better quality services in the hospitality and tourism domain. Skill development on imparting training on soft skills and communication will provide employment to large number of youth in the hotel and tourism industry.

Based on our interaction with various stakeholders, some key areas which provide skill development opportunity have been provided in the table below:

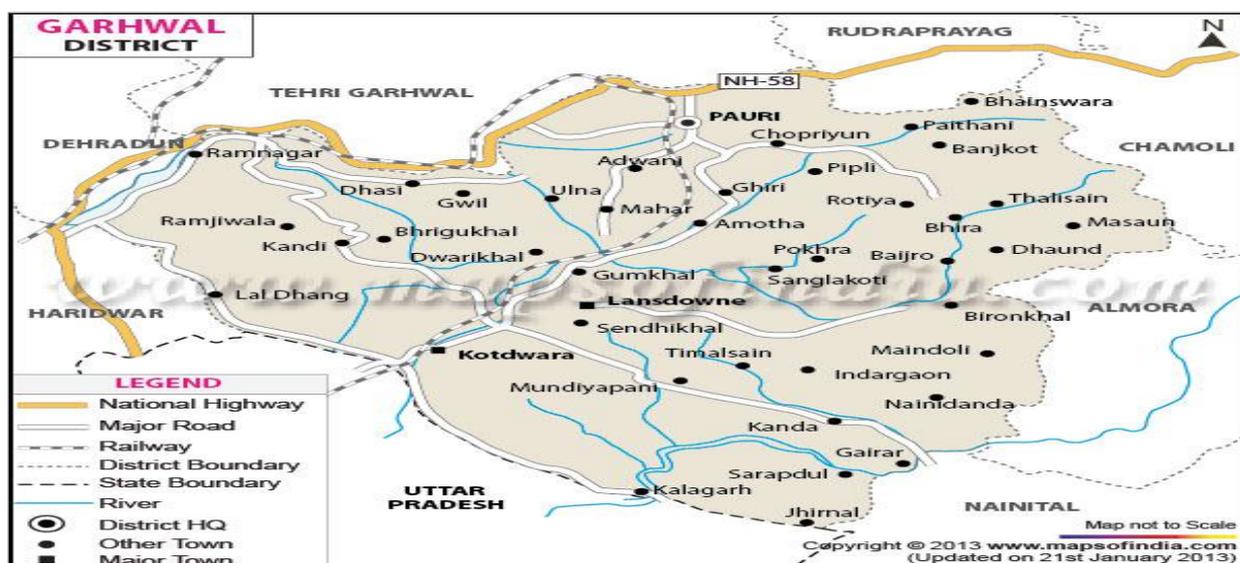
Table 95: Sectors and skill requirement

Sector	Skill Requirements
Primary	Training on commercial dairy in specific- focus should be provided on fodder management, installation of proper shades, availability of water, and health of the animal to strengthen existing facilities and encourage dairy activities in the District. Value addition of sugarcane based products would require skill development that would generate large scale employment.
Secondary	Considering the demand of skilled manpower for the industries in SIDCUL, training is required for fitters, electricians, motor mechanic, turner, and electronics to cater to the latest technology and machineries in the industries. Focus should be on up gradation of infrastructure in the ITIs. The courses should be in designed in consultation with industry leaders. Summer training and industry exposure to ITI students so that they can develop familiarity with new technology
Tertiary	New courses focusing the service sector – hospitality, tourism, banking, and BPO related courses should be offered in the ITIs.

8. Recommendations

Government	<ul style="list-style-type: none"> ▶ Promote training on dairy operations and use of new machines in collaboration with KGVK; ▶ Support sugarcane processing units and provide requisite infrastructure for sustainable operations. Up skilling activities on value addition of sugarcane product in the District.
NSDC	<ul style="list-style-type: none"> ▶ Support trainings related to sugarcane farming and facilitate trainings for related skills in collaboration with KVK.
Industry	<ul style="list-style-type: none"> ▶ Provide industrial exposure and support internship for ITI and Polytechnic students. ▶ Assist in designing courses for ITI and Polytechnic under PPP
Vocational Training Providers	<ul style="list-style-type: none"> ▶ Training on veterinary doctor and scientist in KVG. Training is required on fodder management, shade installation, AI, and upkeep of health and hygiene of animals. ▶ Training on new methods, techniques, and mechanization in farming, with a special focus on commercial processing, value addition of sugarcane and herb cultivation. ▶ Incorporate a component of soft skill training like communication skills, personality development etc. in all courses. ▶ VTC's in the District should introduce short term training programmes hotel management/ tourism related skills including culinary, housekeeping, waiter, bartending, trekking guides and tourist guide etc., ▶ Incorporate practical training as a substantial part of the existing curriculum of technical courses.

6.8 Pauri Garhwal



Source: Maps of India

1. Introduction

Pauri Garhwal is spread over an area of 5,438 sq. km which forms proximately 10.17 percent of the total geographical area of the State. Administratively, the District has 15 blocks and 3,473 villages. Pauri Garhwal is surrounded by District of Tehri Garhwal and Rudra Prayag in the north, Haridwar in the West, Chamoli and Almora in the East and Nainital and the State of Uttar Pradesh in the South.

Table 96: Administrative profile of Pauri Garhwal

Particulars	Pauri Garhwal	Uttarakhand	Source
Area (in Sq. Km)	5,438	53,483	http://www.census2011.co.in/census/state/districtlist/uttarakhand.html
Percentage share of State Geographical area	10.17%	100	N.A
Number of Community Development Blocks	15	95	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWP/DistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Number of Gram Panchayats	1,213	7,256	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWP/DistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Total number of inhabited villages	3,473	16,793	http://www.censusindia.gov.in/2011-prov-results/paper2/data_files/uttarakhand/8-adminunit-60-61.pdf

2. Demography

Pauri Garhwal is home to 6.78 percent of the total population of the State and with its 6.86 Lakh inhabitants it is the fifth most populated District of the State. According to Census 2001, the socially backward classes such as SC and ST represent 15.3 percent and 0.62 percent of the population respectively. Pauri Garhwal ranks 3rd (among total of 13 Districts in the State) in terms of sex ratio (1,103 females per 1,000 males). With population density of 129 people per sq. km, Pauri Garhwal is the 8th most densely populated District in the State, yet below the State's average of 189 persons per sq. km.

There has been a marked decrease in the decadal population (-1.51%) of the District, given the high degree of migration.

Table 97: Socio economic indicators for Pauri Garhwal

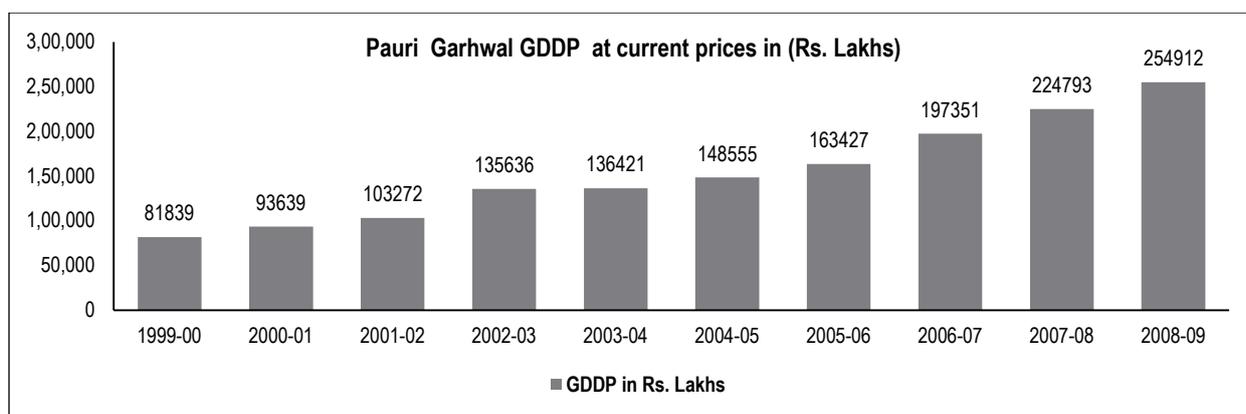
Population	Pauri Garhwal	Uttarakhand	Source
Total population (in Lakh)	6.86	101.17	Census 2011 (provisional data)
Total population (Male) (in Lakh)	3.26	51.54	Census 2011 (provisional data)
Total population (Female) (in Lakh)	3.60	49.62	Census 2011 (provisional data)
District share in State's population	6.79%	N.A	N.A
Density of population	129	189	Census 2011 (provisional data)
Decadal growth of population (2001-2011)	(1.51)%	19.17%	Census 2011 (provisional data)
Percentage of urban population	16.41%	30.55%	Census 2011 (provisional data)
Scheduled Caste population percentage of State population	15.3%	17.90%	Census 2001
Schedule Tribe population percentage of State population	0.62%	3%	Census 2001
Sex ratio	1,103	963	Census 2011 (provisional data)

3. Economy

As per the data collected by the Directorate of Economics & Statistics (2008-09), Pauri Garhwal has a Gross District Domestic Product⁶² of Rs. 254,912 Lakh (2008-2009) which amounts to 6.34 percent of the total State GDDP. The per capita income of Pauri Garhwal for 2008-09 was valued at Rs. 28,139, which is significantly lower than the State per capita income of Rs. 36,520⁶³.

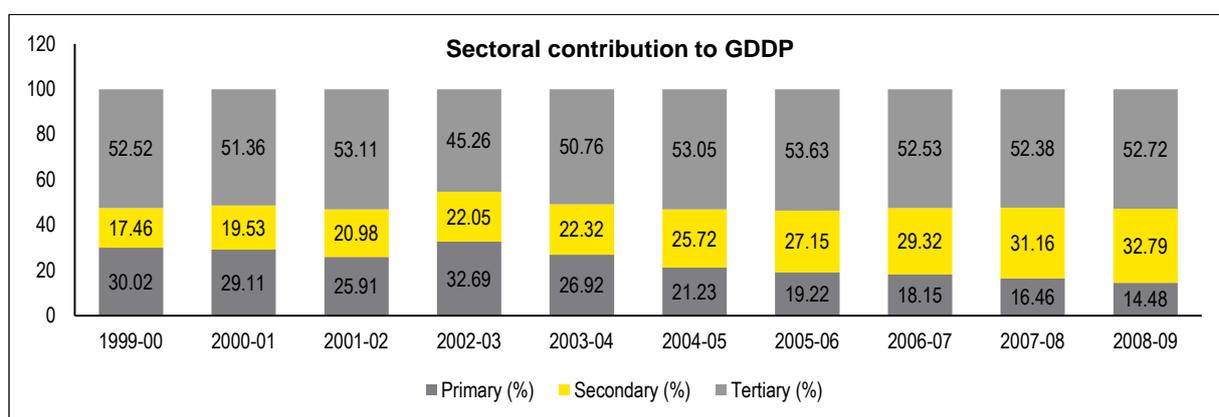
⁶² *Statistical Diary, Government of Uttarakhand*

⁶³ <http://planningcommission.nic.in/plans/stateplan/present/Uttarakhand.pdf>



Source: Planning Commission, Government of Uttarakhand

The contribution of different sectors to the District Domestic Product (2008-2009) stood at 14.48 percent (2008-2009), 32.79 percent and 52.72 percent for the Primary, Secondary and Tertiary sectors respectively.



Source: Planning Commission, Government of Uttarakhand

Primary Sector

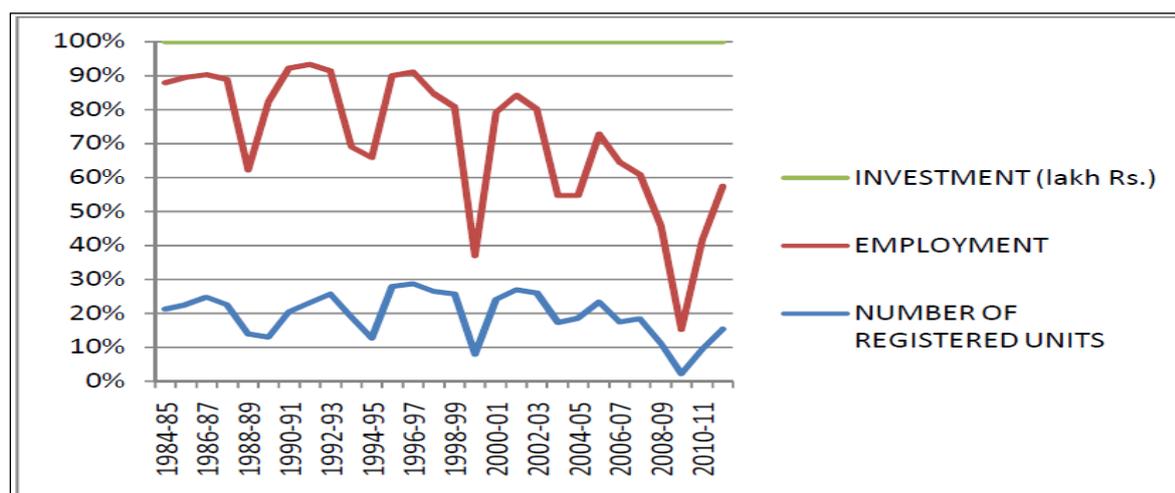
Although in terms of share of total workers, agriculture sector employs almost 58 percent of the total workers, the sector has not progressed much. The contribution of agriculture to the District GDP shows a decreasing trend. In 2003-04 the contribution of agriculture to District GDP (at current prices) was 12 percent, which reduced to 8 percent in 2004-05. As per Uttarakhand agriculture statistics report 2009-10, almost 89 percent of the land is covered with forest, only 5.48 percent of the total geographical area, i.e., 44 thousand hectares of land was brought under cultivation in the District. Rice & Wheat are the primary crops with a gross cropped area of around 22 thousand hectares (though only one third of this area is cropped using irrigation). Ragi, Maize and Barley are primarily grown without any irrigation. Apart from Cereals, other major crops include pulses, fruits & vegetables.

Secondary Sector

Pauri District is an upcoming industrial District in the State of Uttarakhand. It is one of the few Districts where SIDCUL has established a Growth Centre at Sigaddi, Kotdwar, in order to promote industrial development in the State. Currently there are 5,119 registered industrial units in the District which employs close to 15,000 workers on a daily basis. Though the presence of medium and large scale industries is limited, the total investment in industries is Rs. 14,233.51 Lakh. The largest investment is in the Metal based (Steel Fabrication) industry with an investment of 3,107.13 Lakh.

There are 407 industrial units registered in the District as agro based industries and has a cumulative

investment of Rs. 1,209 Lakh and provides employment to 903 workers. The wood and wooden based furniture industry has the maximum registered industrial units standing at 703 units.



Source: DIC Pauri Garhwal, Industry Profile

Tertiary Sector

Pauri Garhwal has enormous scope for tourism. It is a paradise for adventure seekers interested in sports like- Trekking, Moonlight Trekking, Cycling, Jungle Camping, Wildlife Adventure, Aero- sports, Angling, Rock-climbing, Rafting etc. Other adventure activities in the District include Binsor trek, Doodhari trek, and aerospace in Kandra, cycling in Garhwal Himalayas, and angling and swimming in Nayar River.

4. Workforce Distribution

The total population of Pauri Garhwal in 2012 was 6.85 Lakhs which is expected to decrease to 6.80 Lakhs by 2017 and 6.75 Lakhs by 2022. As per our research methodology, the incremental manpower supply will be about 1.90 Lakhs by 2022.

Table 98: Estimated workforce distribution in Pauri Garhwal

Year	2012	2017	2022
Total population	6,85,481	6,80,273	6,75,105
Working age population	4,23,765	4,42,289	4,61,622
Labour force	2,66,658	3,56,035	4,57,068
Work force	2,58,068	3,37,869	4,42,345
Incremental Manpower supply		89,377	190,410

As per the table 99 below, incremental demand for human resource by 2022 for top five sector would be in Agriculture (0.81 Lakhs), Education and Skill Development (0.24 Lakhs), Tourism, travel, hospitality & trade (0.23 Lakhs), Manufacturing (0.087 Lakhs), and Building, Construction & Real Estate Services (0.080 Lakhs). The total demand for semi-skilled and skilled manpower by 2017 would be 0.11 Lakhs, and 0.20 Lakhs. Similar demand for semi-skilled and skilled manpower by 2022 would be 0.16 Lakhs, and 0.29 Lakhs.

Table 99: Incremental Human Resource Demand in Pauri Garhwal

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimal ly skilled	Semi-skilled	Skilled
Agriculture	81,967	26,174	7,478	3,739	31,203	8,915	4,458
Food processing	2,048	607	-	152	1,031	-	258
Metal and Mining	108	24	9	14	32	12	18
Manufacturing	8,764	1,906	722	1,073	2,608	987	1,469
Electricity, Gas and Water	699	226	102	-	256	115	-
Building, Construction & Real Estate Services	8,097	2,862	565	106	3,696	730	137
Auto & Auto Components	688	99	131	77	123	163	95
Tourism, travel, hospitality & trade	23,895	4,404	1,565	3,117	7,002	2,745	5,063
Transportation, logistics, warehousing & packaging	4,889	1,199	539	-	2,174	977	-
Postal and communication	1,684	-	207	559	-	248	670
Banking, Financial Services & Insurance	1,529	-	184	499	-	228	618
Real estate and Banking services	999	362	72	13	447	88	17
Public administration	1,347	137	439	72	148	473	77
Education & Skill Development	24,176	-	-	9,523	-	-	14,653

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimal ly skilled	Semi-skilled	Skilled
Healthcare	3,594	-	(210)	1,626	-	498	1,681
Other community services	652	92	122	92	104	138	104
Others	-	-	-	-	-	-	-
Total	165,137	38,091	11,925	20,662	48,824	16,318	29,316

There would be demand for semiskilled manpower by 2022, whereas there would be excess supply of manpower for all skill categories during the period 2012-17, and 2017 and 2022. It is expected that excess manpower will migrate to the industrial Districts as well as neighboring States. Based on our stakeholder interaction, some possible areas of skill gap have been provided below:

- ▶ Agriculture: Modern farming practice; farm mechanization; crop diversification; organic farming practices; floriculture; horticulture; cultivation of herbs; and medicinal plants;
- ▶ Construction materials & building hardware: Shortage of mechanics, electricians in automobile industry; inadequate knowledge of KPO's, and BPO's.

Table 100: Incremental Demand-Supply Gap in Pauri Garhwal

Skill Category	2012-17	2017-22
Minimally skilled	(17,259)	(9,477)
Semi-skilled	(310)	1,369
Skilled	(1,130)	1,534
Total	(18,699)	(6,574)

5. State of education

The literacy rate of Pauri Garhwal has been higher than the State's average (2011 Census). Average literacy rate of Pauri Garhwal in 2011 (as per provision Census figures) is 82.59 percent as compared to the State's literacy rate of 79.63 percent. Gender wise male and female literacy is 93.18 percent and 73.26 percent respectively. State level figures stood at 88.33 percent and 70.70 percent respectively, showing more literate males in the District as compared to State level. The literacy level in urban areas of the District is higher than the State average (89.57 percent as against 85.20 percent for State). In 2010-2011 the District had 11.6 percent of total number of schools of the State. In terms of the total school enrolment for the same year, the District was ranked 1st in the State whereas with respect to the enrolment for SC, ST and OBC in particular, the District is ranked 8th, 6th and 12th respectively.

Table 101: School Education Infrastructure in Pauri Garhwal

Type	Primary		Upper Primary	
	Number	Students	Number	Students
Government	1,683	53,306	586	31,271
Private	248	27,271	92	7,126
Total	1,931	80,577	678	38,397

Table 102: Key ITI indicators in Pauri Garhwal

Type of Institute	Number of Institutes	Enrolment
Industrial Training Institutes	17	650
Polytechnic	7	1526
Total	24	2176

6. Youth Aspiration

The assessment team also held discussions with youth groups to understand their aspirations and preferred sectors of employment, wage expectations and willingness to migrate. Our key discussion points have been summarised below:

- ▶ The youth were not keen on engaging in farming;
- ▶ A few of the students were keen on pursuing professional courses like Chartered Accountancy, Hotel Management and IT related professions while others were looking at getting into the Government services and the armed forces;
- ▶ The youth shared that a salary between INR 8,000 and INR 20,000 is enough for them;
- ▶ The youth expressed the need for institutes which provide soft skill and computer training;
- ▶ Majority of the youth migrate to Kotdwar, other Districts and even other Districts after completing their education.

7. Development Potential and stakeholder perspective

Industry

As per the discussion with the Chief Development Officer (CDO), it was noted that there is only one large scale industry in the District. This is primarily due to the difficult terrain which increases the startup cost for any business along with additional logistical expenditures that businesses would have to incur.

Majority of the District geography is not conducive to large or medium scale industries. Hence an industrial belt under SIDCUL has been set up in the Terai city of Kotdwar known as the Sigaddi Growth Centre. This 100 acre industrial area is reserved primarily for thrust sector industries like floriculture, medicinal herbs and aromatic herbs, honey, horticulture and agro, food processing industry, industrial gases, non-timber forest products based industries, information & communication, technology industry, computer hardware to name a few of the 18 industries classified as thrust sectors. An industry representative based out of Kotdwar shared that though the District is situated

only 200 kms from Delhi and 120 kms from Dehradun, the Sigaddi Growth centre lacks basic infrastructure like roads etc. due to which not many industries have set up their units, in spite of the various benefits. SIDCUL offers 100 percent Central Excise exemption for 10 years, 100 percent Income Tax exemption for first 5 years and 30 percent for next 5 Years, CST @1 percent for 5 years and Capital Investment Subsidy @15 percent with a maximum of Rs. 30 Lakh.

The growth centre has major scope for fuelling the Districts economy; however it has not been as appealing to the big industry players as some of the other industrial belts of Haridwar and Udham Singh Nagar. The GM DIC shared that in Kotdwar the agro based industries, furniture industry, readymade garments, automobile industry and the steel fabrication industry has immense scope for generating domestic employment. However the limited number of training institutes and courses is not able to fulfill the high demand for skilled labor in these industries. The GM DIC emphasized on the high demand for mechanics and electricians in the automobile industry, owing to the recent growth of industry in the District. He further added that the growth of wood and wood based furniture industry has resulted in increasing the demand for skilled carpenters, painters and artisans. This industry currently employs 4,986 people.

The CDO suggested that there is scope for setting up service industries like Business Process Outsourcing (BPO's), Knowledge Process Outsourcing (KPO), which will help generate employment opportunities for the educated and unemployed youth.

During an interaction with the representative of one of the major IT companies that has set base in Sigaddi Growth Centre, it was noted that the human resource requirements for skilled and unskilled labour is fulfilled with great difficulty. This is due to the quality of higher education and the paucity locally available trained workforce. The industry representative shared that the Government has established a clause where a company that sets base in Sigaddi, is required to recruit at least 70percent of its workforce from the State. He further added that this condition becomes very difficult to adhere to, given the high eligibility requirements of the skilled workforce in their organisation. The company needs candidates who have a first division from 10th grade to Diploma or Polytechnic. Thus human resource requirements have to be fulfilled by outsourcing jobs to other States where qualified and committed workforce is available. Further the industry representatives shared with the team that the courses being run by the ITI's are outdated and should be discontinued. They were of the opinion that, the ITI courses need to be updated and upgraded with more focus on practical experience, to ensure that students learn employable skills rather than acquiring outdated theoretical knowledge.

Agriculture, Horticulture, Floriculture and Herbiculture

Agriculture is the primary source of income for the District, as 58 percent of the population is engaged in farming. The scale of agriculture in the District has reduced due to high rate of migration of youth, as can be seen by the drop in population of the District from 6,97,078 in 2001 to 6,86,527 in 2011. The cultivable farmlands which constitute 5.4 percent of the geographical cover of the District, are lying vacant and the landholdings have become smaller over a period of time. The use of traditional farming practices has resulted in restricted output, leading to 78.85 percent of the farmers becoming small and marginal farmers. NABARD is encouraging setting up of farmer clubs, and rural innovation fund for promoting agriculture in the District/State. The agriculture department of Pauri aims to increase the production and productivity of cereals and pulses by 2 to 3 quintals per hectare by 2015. This will require a shift to modern farming practices which would include the use of high yield variety of seeds, diversification of crops, better management of land and crops, inclusion of organic farming practices etc. This gives rise to the need for training on such skills to help revive agriculture in the District and meet the goal for 2015.

The ADM of the District suggested that floriculture, horticulture, cultivation of herbs and medicinal plants should be promoted since the terrain and the climatic conditions provide large quantities of raw material for commercial production. Given the natural conditions the District, like all other hilly Districts has abundance for herbs and medicinal plants. The Sigaddi growth centre has 4 herbs processing

units, two floriculture units and three pharma companies. However expansion of these industries will help create more opportunities for employment in the hilly areas and as well as the plains, resulting in a corresponding increase in demand for training programmes on bulb growing, nursery operation, chemical protection of plants, fruits and herbs, post-harvest storage and handling and use of preservatives. NABARD has already organized training on Bamboo and Jute cultivation with the help of a local NGO, however such initiatives need to be up scaled to help increase productivity to reach a commercial scale.

Tourism

The ADM shared that the Hotel, Ecotourism, Tour & Travels, Transportation industries have a major scope for growth in the near future. Majorly fuelled by religious tourists who visit Neelkanth, Devalgarh, Dhari Devi, Binsur, Laxmanjhoola, Neelkanth, Tarkshwar Mahadev, Jwalpa Devi, Kyunkaleshwar Mandi ecotourism in the District remains limited to Corbett National park. With improved infrastructure such as hotels, guest houses, roads etc. and improved marketing of Pauri as a tourist destination, the tourism industry will become stronger in the District. The ADM further added that the growth of this industry stems out the need for trained waiters, cooks, hotel management staff, drivers, tourist guides, porters etc. since the current workforce in this division is unskilled. Further there will be a need to have courses on skills like hotel management, tourist guides etc. with a strong emphasis on developing soft skills.

Based on our interaction with various stakeholders, some key areas which provide skill development opportunity have been provided in the table below:

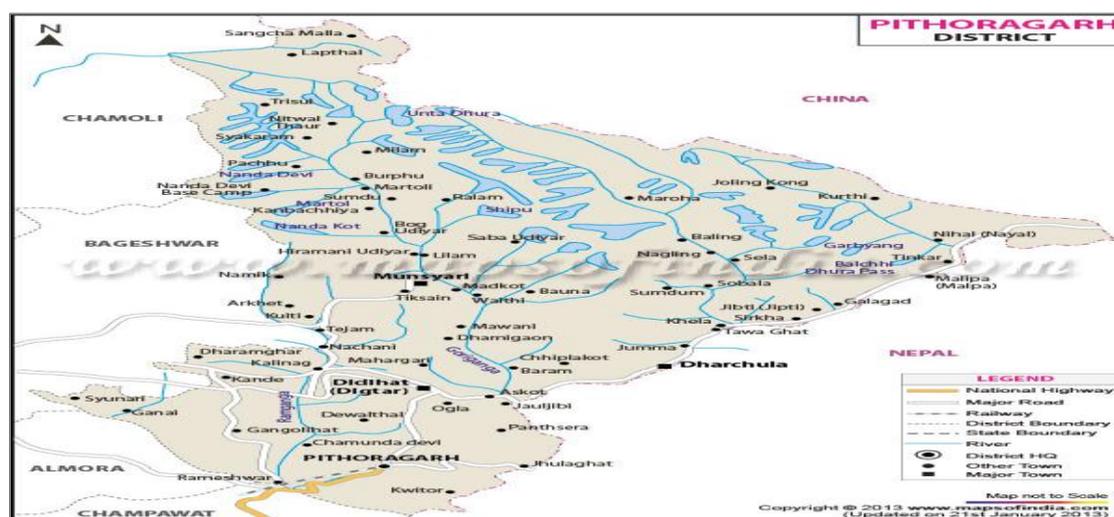
Table 103: Sectors and skill requirement

Sector	Skill Requirements
Primary	Horticulture, Floriculture, Herb Farming, Progressive farming practices- bulb growing, nursery operation, chemical protection of plants, fruits and herbs, post-harvest storage and handling and use of preservatives
Secondary	Painters, Fitters, Machine Operators, Mechanics- skilling on upgraded and modern plant machineries.
Tertiary	Soft Skills, English Language, Tour guides and operators, Call centre training

8. Recommendations

Government	<ul style="list-style-type: none"> ▶ As the terrain is difficult and not conducive to large and medium scale industries, the Government can set up BPOs and KPOs to meet the requirement of skilled manpower for IT industries in Siggadi Growth Center.
NSDC	<ul style="list-style-type: none"> ▶ Support training related to cultivation and commercial production of floriculture, and horticulture in collaboration with training providers; ▶ Collaborate with NABARD and support training programs on herbi-culture, nursery operations and chemical protection of plants.
Industry	<ul style="list-style-type: none"> ▶ Food Processing and agro based industries can train farmer groups and SHGs in post-harvest handling, collection, and packaging.
Vocational Training Providers	<ul style="list-style-type: none"> ▶ VTPs can support training on new methods, techniques, and mechanization in the hosiery and wool industry; ▶ VTP can provide refresher courses on improvising the handicrafts This can be complimented by providing training on marketing and packaging; ▶ The training providers can support short courses on wildlife guides, nature interpreters; ▶ VTPs can support training programs for furniture, readymade garment, and steel and fabrication industries as there is shortage of manpower.

6.9 Pithoragarh



Source: Maps of India

1. Introduction

Pithoragarh is spread over an area of 7,110 sq. km which forms approximately 13.29 percent of the total geographical area of the State. It shares international boundary with Tibet and has tremendous strategic importance. The passes of Lipulekh, Kungribingri, Lampia Dhura, Lawe Dhura, Belcha and Keo, open out to Tibet along the eastern and southern part of the central Himalayas with the Indo-Tibetan watershed divide in the north and the Kali River forming a continuous border with Nepal in the east. The Pithoragarh District is surrounded by Almora, Champawat, Bageshwar and Chamoli Districts. Most of the region has mountainous terrain with a forest cover (28.88 percent of the total area of the District). The number of blocks in Pithoragarh is 8 and the total number of villages in Pithoragarh District is 1,675.

Table 104: Administrative profile of Pithoragarh

Particulars	Pithoragarh	Uttarakhand	Source
Area (in Sq. Km)	7,110	53,483	http://www.census2011.co.in/census/state/districtlist/uttarakhand.html
Percentage share of State Geographical area	13.29%	100	N.A
Number of Community Development Blocks	8	95	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWPDistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Number of Gram Panchayats	643	7,256	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWPDistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Total number of inhabited villages	1,675	16,793	http://www.censusindia.gov.in/2011-prov-results/paper2/data_files/uttrakhand/8-

Particulars	Pithoragarh	Uttarakhand	Source
			adminunit-60-61.pdf

2. Demography

Pithoragarh is home to 4.80 percent of the total population of the State. It is the eighth most populated District of the State and has had a decadal growth rate in population of 5.13 percent in the total population compared to the population as per Census 2001. Approximately, 85.69 percent of the population lives in rural areas and rest of the population lives in urban areas.

According to Census 2011 (provisional data), the sex ratio in Pithoragarh was 1,021 females per 1,000 males. Pithoragarh has a population of 4.86 Lakh of which males and females were 2.40 Lakh and 2.45 Lakh respectively. The population density of Pithoragarh was 69 in 2011 making it the third most sparsely populated District of Uttarakhand after Uttarkashi and Chamoli.

Table 105: Socio economic indicators for Pithoragarh

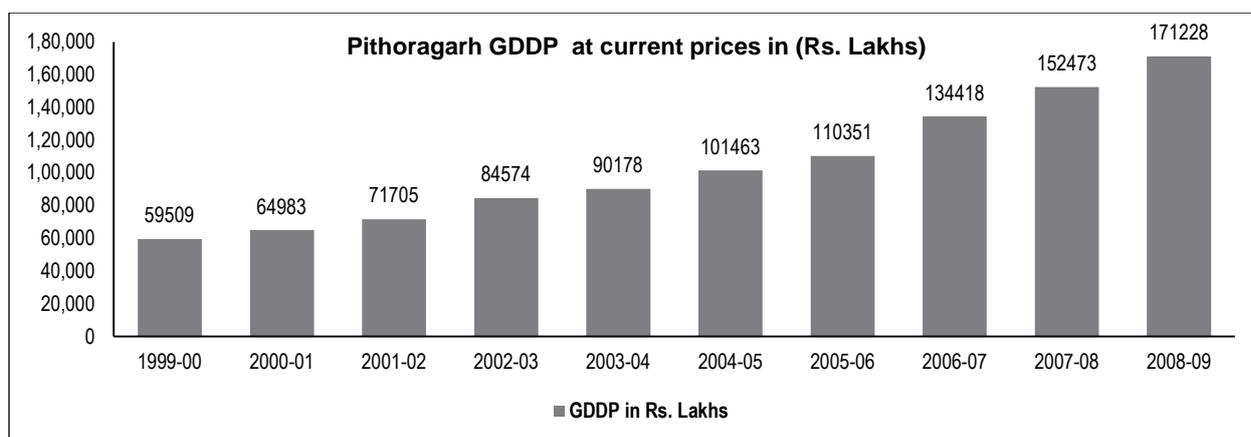
Population	Pithoragarh	Uttarakhand	Source
Total population (in Lakh)	4.86	101.16	Census 2011 (provisional date)
Total population (Male) (in Lakh)	2.40	51.54	Census 2011 (provisional date)
Total population (Female) (in Lakh)	2.45	49.63	Census 2011 (provisional date)
District share in State's population	4.80%	N.A	N.A
Density of population	69	189	Census 2011 (provisional date)
Decadal growth of population (2001-2011)	5.13%	19.17%	Census 2011 (provisional date)
Percentage of urban population	14.31%	30.55%	Census 2011 (provisional date)
Scheduled Caste population percentage of State population	23%	17.90%	Census 2001
Schedule Tribe population percentage of State population	7.53%	3%	Census 2001
Sex ratio	1,021	963	Census 2011 (provisional data)

3. Economy

As per the data collected by the Directorate of Economics & Statistics (2008-09), Pithoragarh had a Gross District Domestic Product⁶⁴ of Rs. 1,71,228 Lakh which amounts to 5.82 percent of the total State GDDP. The per capita income of Pithoragarh for 2008-09 was valued at Rs. 28,896, which is lower than the State per capita income of Rs. 36,520⁶⁵

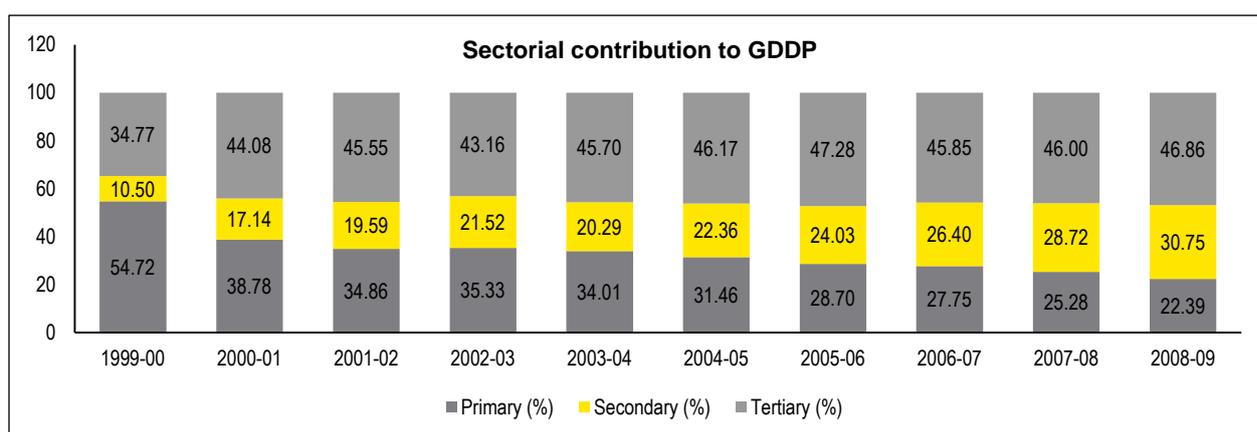
⁶⁴ Statistical Diary, Government of Uttarakhand

⁶⁵ <http://planningcommission.nic.in/plans/stateplan/present/Uttarakhand.pdf>



Source: Planning Commission, Government of Uttarakhand

Sector wise contribution to the District Domestic Product stands at 22.39 percent, 30.75 percent and 46.86 percent for the Primary, Secondary and Tertiary sectors respectively.



Source: Planning Commission, Government of Uttarakhand

Primary Sector

As per recent data (2012-13) provided by District Agriculture Officer (DAO), around 8 percent of the total cultivatable land is irrigated, rest is rain-fed. Wheat, Rice, Maize, Rajma and Barley remain the major crops across the District. In terms of productivity, the other main crops are Manduwa and Lentil. In the past 3-4 years, there has been diversification in agricultural activities with vegetables and fruits. Due to the efforts of the *Krishi Vigyan Kendra*, there has been improvement in productivity of the crops.

Secondary Sector

In terms of industrial development, due to the difficult geographical terrain, Pithoragarh remains one of the less developed Districts. The business ventures haven't able to achieve their expected goals. Scale of industry is very small and heavily dependent on Government assistance. Table 70 below provides list of registered MSME's in Pithoragarh.

Table 106: Registered MSME's for the Year 2010-11

S. No.	Industry	No. of Units
1	Food and Beverages	491
2	Handloom	193
3	Readymade/Tailoring	168
4	Wood based	06
5	Metal based	163
6	Chemical based	14
7	Rubber or Plastic based	08
8	Paper based	05
9	Printing	42
10	Non- metal Minerals based	24
11	Others	448
	Total	1,562

Source: DIC, Pithoragarh

Tertiary Sector

The entire zone of Pithoragarh is rich in variety of birds and animals like langur, snow leopard, blue sheep and Whistling Thrush etc. Apart from that, various temples and excursion trips in Chandak, Thal Kedar and Gangolighat are famous tourist spots. Despite such attractions, the hospitality sector is still at its nascent stage. In 2005-06, around 1.6 Lakh tourists visited the District of which total number of foreign tourists was as close as to negligible.

4. Workforce Distribution

The total population of Almora in 2012 was 4.88 Lakhs which is expected to increase to 5.00 Lakhs by 2017 and 5.13 Lakhs by 2022. As per our research methodology, the incremental manpower supply will be about 1.36 Lakhs by 2022.

Table 107: Estimated workforce distribution in Pithoragarh

Year	2012	2017	2022
Total population	4,88,429	5,00,795	5,13,474
Working age population	3,01,849	3,24,964	3,49,848
Labour force	1,86,915	2,45,749	3,23,530
Work force	1,82,865	2,40,583	3,16,519

Incremental Manpower supply		58,834	1,36,614
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As per the table 108 below, incremental demand for human resource by 2022 for top five sector would be in Education and Skill Development (0.18 Lakhs), Tourism, travel, hospitality & trade (0.14 Lakhs), Food processing (0.10 Lakhs), Manufacturing (0.074 Lakhs), and Building, Construction & Real Estate Services (0.067 Lakhs). The total demand for semi-skilled and skilled manpower by 2017 would be 0.036 Lakhs, and 0.12 Lakhs. Similar demand for semi-skilled and skilled manpower by 2022 would be 0.057 Lakhs, and 0.18 Lakhs.

Table 108: Incremental Human Resource Demand in Pithoragarh

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
Agriculture	4,250	1,477	422	211	1,498	428	214
Food processing	10,005	2,962	-	741	5,042	-	1,260
Metal and Mining	409	91	35	52	119	45	67
Manufacturing	7,410	1,655	627	932	2,161	818	1,217
Electricity, Gas and Water	525	170	76	-	192	86	-
Building, Construction & Real Estate Services	6,777	2,396	473	89	3,094	611	115
Auto & Auto Components	205	30	39	23	37	48	28
Tourism, travel, hospitality & trade	14,308	2,641	933	1,867	4,199	1,635	3,031
Transportation, logistics, warehousing & packaging	6,084	1,481	665	-	2,717	1,221	-
Postal and communication	531	-	65	176	-	78	211
Banking, Financial Services & Insurance	138	-	18	49	-	19	52
Real estate and Banking services	924	335	66	12	413	82	15
Public administration	827	84	270	44	91	290	48
Education & Skill Development	18,090	-	-	7,127	-	-	10,963

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
Healthcare	2,323	-	(136)	1,051	-	322	1,086
Other community services	256	36	48	36	41	54	41
Others	9	1	2	1	1	2	1
Total	73,070	13,359	3,603	12,412	19,606	5,740	18,350

During both the periods i.e. 2012 -17 and 2017 - 2022, there would be an excess supply of manpower in all the skill categories. Most of it will be in minimally skill category and skilled category. Surplus labor is expected to migrate to neighboring Districts and State for employment. Based on our stakeholder interaction, some possible areas of skill gap have been provided below:

- ▶ Tourism, travel, hospitality & trade: Require instructors for kayaking, river rafting, para-gliding; require office boys for hotels, waiters, training on Spoken English/soft skills;
- ▶ Agriculture: Cultivation of fruit orchards and vegetables (both seasonal and off-seasonal); farm mechanization; lack knowledge in best farming practices; HYV seeds; use of Bio-fertilizers.

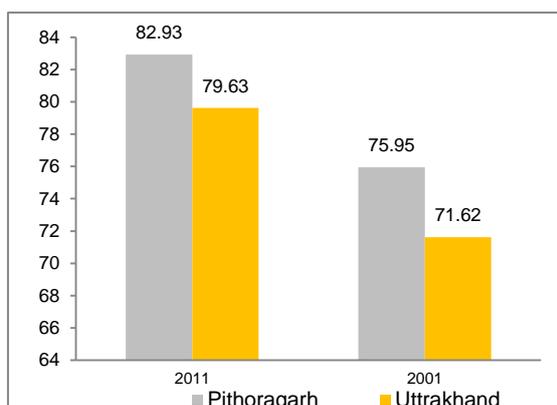
Table 109: Incremental Demand-Supply Gap in Pithoragarh

Skill Category	2012-17	2017-22
Minimally skilled	(24,080)	(28,177)
Semi-skilled	(122)	1,405
Skilled	(5,258)	(7,312)
Total	(29,460)	(34,085)

5. State of education

As per Census 2011 (provisional data), the average literacy rate is marginally better than the State's average. Average literacy rate of Pithoragarh in 2011 is 82.93 percent vis-à-vis 75.95 in 2001. Gender wise, male and female literacy is 93.45 and 72.97 respectively in 2011 Census. In 2001 Census, the respective figures were 72.97 and 62.59 showing an increase in literacy level for men by over 3 percent whereas the literacy rate for women has risen by over 10 percent since 2001.

There has been a steady improvement in basic education scenario. As per the provisional District Elementary Education Report Card for the year 2010-11, 97.2 percent of the students were able to complete primary education and transit to upper primary level. At primary level, there are a total of 1,421 schools in this District but only 45 schools till Higher Secondary level. A majority of the schools are Government funded and enrollment over the years has seen a marginal upward trend at the upper primary level. Only in few schools though, the medium of instruction is English.



Literacy Rates for Pithoragarh District

Table 110: School education infrastructure in Pithoragarh

Type	Primary		Upper Primary	
	Number	Students	Number	Students
Government	1,202	36,012	441	24,083
Private	246	22,807	66	4,767
Total	1,448	58,819	507	28,850

Degree colleges in this District offer courses in arts, sciences and commerce streams. For the year 2011-12, the total students enrolled in these colleges were 4,584. In terms of streams, there is higher proportion of students in arts, followed by commerce and science. Data published on the Directorate of Higher education (DHE) website shows that maximum enrolment is in Hindi literature followed by political science and geography.

Table 111: Student Strength of Government colleges in Pithoragarh for the year 2011-12

College name	Status	Year of establishment	Boys Enrolled	Girls Enrolled	Total
Government post graduated college, Pithoragarh	Post graduate	1963	2,938	4,021	6,959
Government Inter collage/post graduated colleges, Berinag	Post graduate	1975	592	951	1,543
Government Inter collage Narayan nagar.	Graduate	1983	257	379	636
Government Inter collage, Baluwakot Dharchula	Graduate	1997	166	296	462

Government Inter collage, Munsayari	Graduate	2001	158	201	359
Government Inter collage, Gangolihat	Graduate	2001	193	346	539
Total			4,304	6,194	10,498

Table 112: Industrial Training infrastructure in Pithoragarh

Type of Institute	Number of Institutes	Enrolment
Industrial Training Institutes	8	396
Polytechnic	4	192
Total	12	588

From a technical education standpoint, there are seven ITIs in the District. As per the recent data available at the employment office of the District, 49,788 people have registered themselves here. Out of the total registered unemployed, around 31.62 percent of females are looking for employment opportunities. Most of the registered youth are in the rural areas and 29.36 percent of the unemployed belong to SC, ST and OBC categories.

6. Youth Aspiration

The assessment team also held discussions with youth groups to understand their aspirations and preferred sectors of employment, wage expectations and willingness to migrate. Our key discussion points have been summarised below:

- ▶ The youth were keen to become instructors for adventure sports like para-gliding;
- ▶ Majority of them expressed to own hotels, restaurants, and guest house;
- ▶ The youth expressed their desire to get training in excavation and exploration of minerals. They were keen to join mining and mineral industries.
- ▶ The youth were interested in learning software programming and computer related courses.

7. Development Potential and stakeholder perspective Agriculture

Majority of the population in this District is dependent on agriculture related activities even though land holdings are small and scattered. Main crops are wheat and rice. Fruits and vegetables production is in surplus but the spice cultivation is limited.

The major concern in the District is the awareness of farmers (cultivators) about newer methods (best practices) of farming and efficient ways of marketing to extract best prices from the market. Not only this, the cultivators are also unaware of the schemes which are in place for their benefit, i.e. insurance schemes, seeds distribution, fertilizers use, etc.

Conclusion drawn on the basis of open ended questions of the survey recommends that dissemination of information regarding best practices of farming (cultivation) and marketing (packaging, trade practices, etc.) through demonstrations would be the most appropriate solution. Focus should be on promotion of use of infrastructure related to connectivity (like broadband connections) where quality trainers could inform the farmers about new High Yielding Variety (HYV) of seeds, fertilizer and use of modern technique of farming could be imparted to a larger section of the concerned parties.

Horticulture

Given the climate, environment and geographical terrain, this District is suitable for the cultivation of fruit orchards and vegetables (both seasonal and off-seasonal). Agriculture activities are still carried out with traditional means and mechanization of agriculture equipment is close to negligible. Thus, horticulture activities provide a much easier alternative to farmers as compared to farming which at present requires costly mechanization to increase its productivity.

Table 113: Horticulture activities in the Pithoragarh

Agro-Seasonal Zone	Fruits cultivated in that zone
Low range (1000 meters and below)	Mango, litchi, beer, lemon and its kinds, papaya, grapes and banana
Medium range (Between 1000 and 2500) meters	Pear, plum, almonds, Peach, walnut and pomegranate
High range (2500 meters and above)	Apple, pear, cherry, almonds, chestnut and apricot

An elevation of above 1000 meters is suitable for winter season fruits like apples, pears, walnuts, almonds and apricots. Thus given the substantial variety of production of fruits and vegetables in this District, there exist a huge potential for the processing and packaging units.

Though there are 10 nurseries functioning but they're not up to their potential capacities. Unavailability of cold storage facility is also a huge infrastructural problem. A District level initiative towards promotion of fruit preservation and fruit processing units in the region will help in mitigating the above mentioned problems. On the institution front, a fruit & vegetable association needs to be established for dissemination information at local level about the technical know-how and new cultivation techniques.

Small and Medium Industries

Interactions with District Industrial Center and National Bank for Agriculture and Rural Development DIC & NABARD official revealed that Pithoragarh can be classified into six regions with the following potential:

Table 114: Key recommendations from NABARD

Development Block	Potential Sector
Bidh Pithoragarh	Soap stone powder, building materials, screw & nut boards, Furniture and Tin boxes, Tyres, radio and TV repairing, knitting, Cement related and mini flour mills etc.
Moonakot	Flour mills, readymade garments, carpet making, agri-equipments, engineering work, furniture and repairing etc.
Kanali-jheena	Dead Burnt Magnesite (DBM) , Soap stone, food preservation, furniture, tin box, bucket creation, spice processing, bakery, knitting, agri-equipments
Didihaat	Woolen handloom, mobile & TV repairing, cement, tin box, spice processing
Dharchula	Woolen Handloom, Flour mills, Oil mills, photo framing, Iron engineering, bakery, food preservation, bee-keeping, furniture and Ringal (type of dwarf bamboo) related work
Mushiyari	Woolen Handicraft, incense stick making, medicinal plants, knitting etc.

In this light, it was suggested that focus on infrastructure for establishment of value added wood & wool based industries is imperative. Skill development in garment designing and production, woolen handlooms and handicraft, carpet making etc. will be useful.

Mining and Mineral based industries

A number of minerals like copper, limestone, dolomite, soapstone and magnesite are found in the District. Several beneficiation studies have been undertaken in the region and it was found that Magnesite is abundantly available near the Chandak, Devsthal, Tadi-gaon and Aam-sthal. It was estimated that around 229 Lakh tons of magnesite deposits are there in this District.

Table 115: List of Minerals available in Pithoragarh

Mineral	Area where these minerals are found	Estimated (in Lakh tons)	Actual (in Lakh tons)	Usage
Limestone	Gangolihaat, Chonala area	600	160	Cement
Magnesite	Chandak, Puneri, Mandeygaon, Tandi-gaon, Kanalicheena	200	92	Steel refractory
Soapstone	Deval-sthal, Bhur-muni, Rai-nagar	60	35	Cosmetics, paint, lubrication, soap
Cooper, Zinc and graphite	Ascot, Rai-nagar	13	13	

Source: DIC, Pithoragarh

Magnesite mineral ore is an essential raw material for manufacturing refractory materials used by the steel industry. Pithoragarh Magnesite & Mineral's (PM&M) is one of the few companies which are operating in this area. The raw magnesite is then used for producing dead-burnt Magnesite. Scale of magnesite refractories could be developed further. As per a recent estimate, the mineral reserves would be available for about next 75 years. With the potential existence in the sector, specific skill set training is required. Skill set includes identification of the ore, extraction from the mines, environment friendly techniques to dispose of the wastes (residuals), etc.

Tourism & Hospitality Sector

Pithoragarh is a treasure cove for visitors, mountaineers, botanists & pilgrims. The Mansarovar Yatra route falls through this District and is a delight for adventure enthusiasts and trekkers. Many rivers originate from the lofty Pithoragarh Mountains, thus providing ample scope for developing water sports like kayaking or river rafting. The dense forests in this region have a wide range of wild flora & fauna including elephants, tiger, peacocks, snow leopards and musk deer.

At present, Veer Chandra Garhwali self-employment program which was set up in 2002 is helping in providing basic fundamental infrastructure (in terms of adventure sports equipment's, motor garage, restaurants, tents and Yoga Meditation center) for tourism and related activities. There is huge potential for development of adventure sports like para-gliding & hand-gliding in this District. The Department of Tourism has proposed gliding points in Chandak, Munakot and Dwaj.

Training programs for local youths need to be developed keeping in mind these recent developments. Thus there is scope for expansion of this scheme and inclusion of adventure sports programs into it. Further, development of guides coupled with classes in English and other regional languages would

help the youth in communicating in tourists' vernacular. Training programs need to be diversified further to include hospitality related training programs. Online training programs would be beneficial but given the current infrastructure it is not feasible.

Other services

Interactions with NABARD and employment exchange officials revealed that since majority of the youth is unskilled, the training programs generally focus on providing basic secretarial courses like English speaking courses, computer, and Tally software and personality development classes. Other than that, a book binding workshop was also conducted for a group of 25 people in the 2011-12.

Based on our interaction with various stakeholders, some key areas which provide skill development opportunity have been provided in the table below:

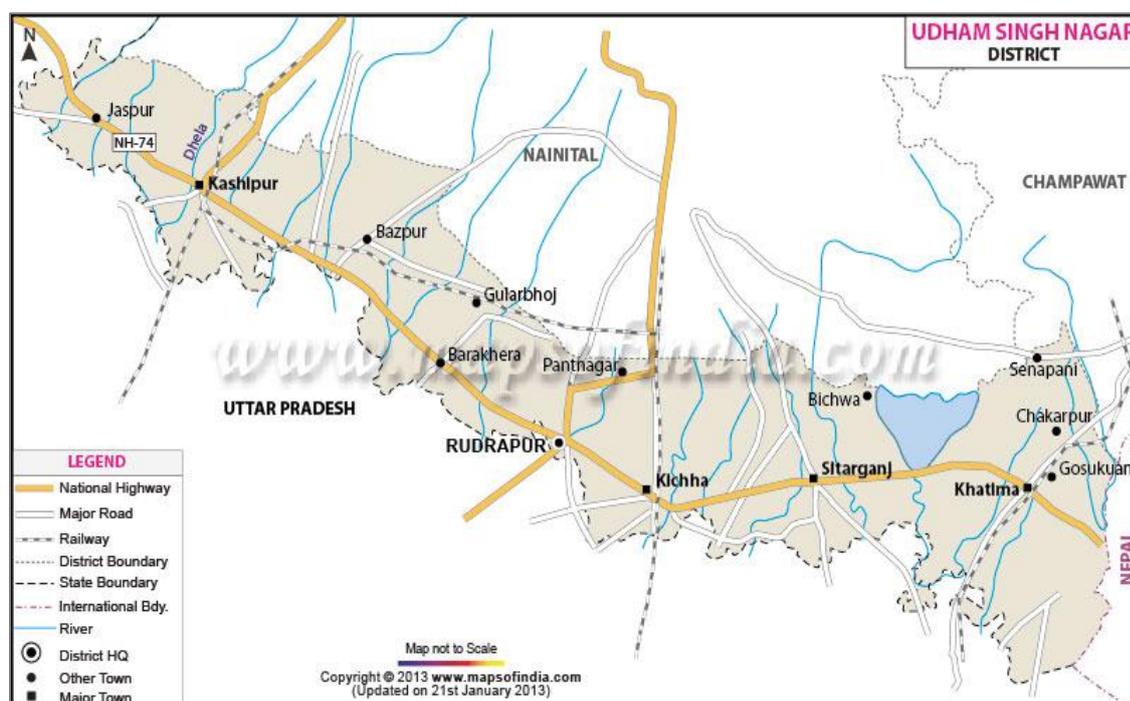
Table 116: Sector and skill requirement

Sector	Skill Requirements
Primary	Production of ginger in the District is one of the highest among the neighboring Districts within Uttarakhand; scope of scaling up the production exists. Even horticulture is a promising sector thus there is a scope for encouraging trainings on food processing, packaging and marketing.
Secondary	Focus on infrastructure for establishment of value added wood & wool based industries. Also, given the mineral repository in the District skills will be required for, identification of the ore, extraction from the mines, environment friendly techniques to dispose of the wastes (residuals), etc.
Tertiary	Mansarovar yatra path falls in this District. There is a scope for the hotel industry and adventure sports and training of guides with English language proficiency.

8. Recommendations

Government	<ul style="list-style-type: none"> ▶ Encourage farmers to develop orchards and promote fruit cultivation. Extend support on skilling and training activities on farming fruit farming practices, post-harvest fruit preservation technique, and packaging.
NSDC	<ul style="list-style-type: none"> ▶ Support training provider in training and propagate best practices of farming, cultivation, and marketing of agriculture produce.
Industry	<ul style="list-style-type: none"> ▶ Based on factor endowment and mines reserves for the next 75 years, the mining and minerals industry can take initiatives to help train youth on identification of ores, extraction from the mines, and waste disposal.
Vocational Training Providers	<ul style="list-style-type: none"> ▶ VTC in the District can introduce short term training programmes on basic levels of adventure sports, hotel management/ tourism related skills including culinary, housekeeping, waiter, bartending, trekking guides etc.; ▶ It is essential to incorporate a component of soft skill training like communication skills, personality development etc. in all courses; ▶ VTC can provide the local farmer families, training on the latest techniques for growing fruits, flowers and vegetables and managing nurseries and orchard's. Additionally short term courses on the use of mechanization in agriculture are also required to help improve the efficiency of the farmers.

6.10 Udham Singh Nagar



Source: Maps of India

1. Introduction

Udham Singh Nagar District is spread over an area of 2,912 sq. km which forms approximately 5.44 percent of the total geographical area of the State. Administratively, the District has 7 blocks and 688 villages. Udham Singh Nagar is surrounded by District of Nainital in the north, the State of Uttar Pradesh to the south, and Nepal in the East.

Table 117: Administrative profile of Udham Singh Nagar

Particulars	Udham Singh Nagar	Uttarakhand	Source
Area (in Sq. Km)	2,912	53,483	http://www.census2011.co.in/census/state/districtlist/uttarakhand.html
Percentage share of State Geographical area	5.44%	100	N.A
Number of Community Development Blocks	7	95	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWPDistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Number of Gram Panchayats	313	7256	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWPDistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Total number of inhabited	688	16,793	http://www.censusindia.gov.in/2011-prov-

villages			results/paper2/data_files/uttrakhand/8-adminunit-60-61.pdf
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2. Demography

As per Census 2011 (provisional data), total population of Udham Singh Nagar is 16.48 Lakh, constituting 16.29 percent of the State's total population. The urban population is 35.58 percent of the total population making Udham Singh Nagar largely an urban area. It ranks 8th (among total of 13 Districts in the State) in terms of sex ratio (919 females per 1,000 males). With population density of 648 people per sq. km, Udham Singh Nagar is the 2nd most densely populated District in the State, yet below the State's average of 189 persons per sq. km.

Table 118: Socio economic indicators for Udham Singh Nagar

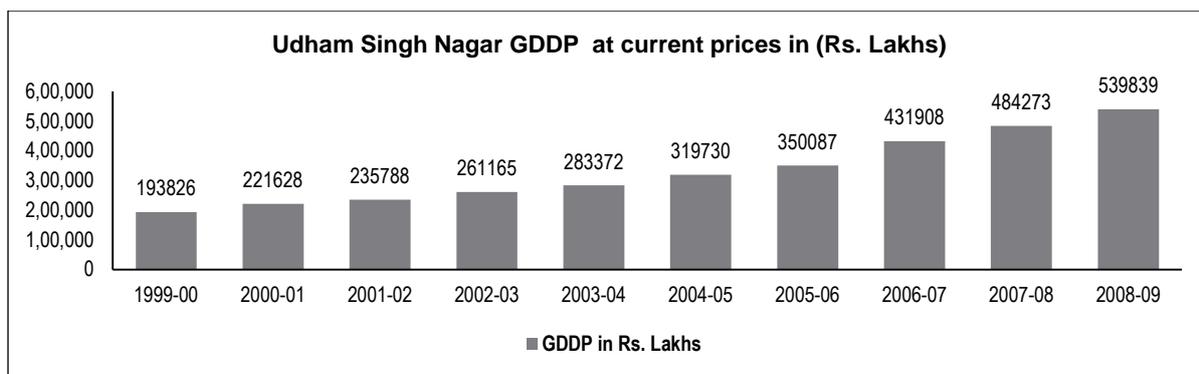
Population	Udham Singh Nagar	Uttarakhand	Source
Total population (in Lakh)	16.48	101.17	Census 2011 (provisional data)
Total population (Male) (in Lakh)	8.58	51.54	Census 2011 (provisional data)
Total population (Female) (in Lakh)	7.89	49.63	Census 2011 (provisional data)
District share in State's population	16.29%	N.A	N.A
Density of population (population/1000)	648	189	Census 2011 (provisional data)
Decadal growth of population (2001-2011)	33.4%	19.17%	Census 2011 (provisional data)
Percentage of urban population	35.58%	30.55%	Census 2011 (provisional data)
Scheduled Caste population percentage of State population	13.2%	17.90%	Census 2001
Schedule Tribe population percentage of State population	43.02%	3%	Census 2001
Sex ratio	919	963	Census 2011 (provisional data)

3. Economy

As per the data collected by the Directorate of Economics & Statistics (2008-09), Udham Singh Nagar had a Gross District Domestic Product⁶⁶ of Rs. 539,839 Lakh which amounts to 13.44 percent of the total State GDDP. The per capita income of Udham Singh Nagar for 2008-09 was valued at Rs. 33,815, which is lower than the State per capita income of Rs. 36,520⁶⁷.

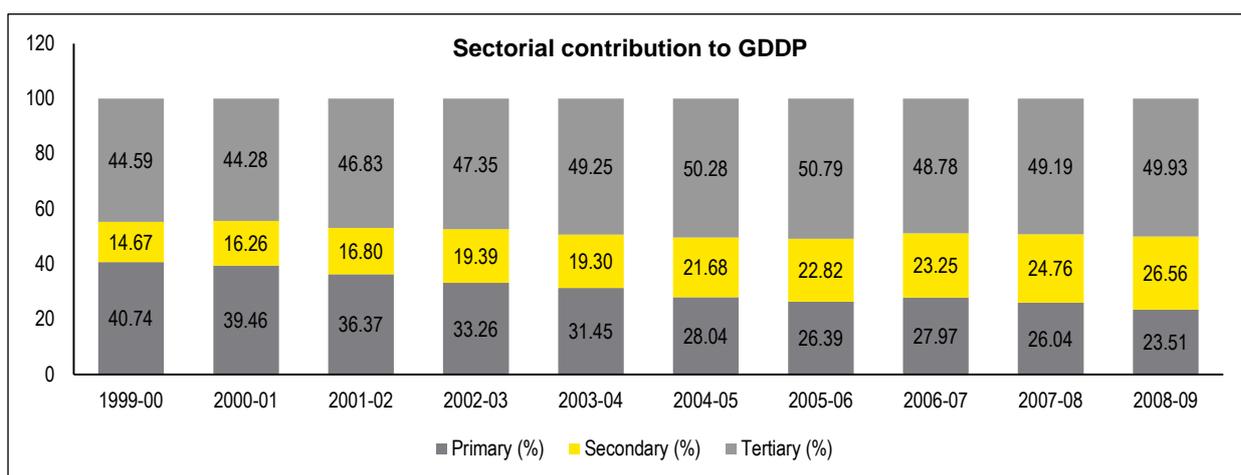
⁶⁶ *Statistical Diary, Government of Uttarakhand*

⁶⁷ <http://planningcommission.nic.in/plans/stateplan/present/Uttarakhand.pdf>



Source: Planning Commission, Government of Uttarakhand

The contribution of various sectors to the District GDP has been 23.51 percent by the primary sector, 26.56 percent by the industry sector and 49.93 percent by the services sector.



Source: Planning Commission, Government of Uttarakhand

Primary Sector

Agriculture sector employs almost 53 percent of the total workforce within the District. The total land under cultivation is 326,495 hectare (2007-2008) and only 3,027 hectare (2007-2008) of the agricultural land is not being cultivated. As can be seen from these figures, the land use for agriculture is more or less optimum due to the availability of plenty of water in this Terai region. The major crops and vegetables are sugarcane, wheat, rice potato, green-pea cauliflower, and ladies finger. The average land holding in the District is large; with 20 percent of the farmers holding land between 1-2 hectares, which has led to mechanized farming and also introduction of innovative farming techniques like poly houses floriculture and herb farming.

Secondary Sector

Udhham Singh Nagar has the highest number of registered industrial units⁶⁸ in the State (4,357 units), which employs close to 70,000 workers. The District has 21 dedicated industrial areas including two SIDCUL established industrial areas at Pantnagar and Sitarganj and one Bio-technology park. The District has various large and medium scale industries in the business of automobiles, paper manufacture, rice mills & sugar processing. The dedicated industrial parks have attracted some of the major automobile industrial players like Tata Motors, Mahindra and Mahindra, Ashok Leyland and Bajaj Motors. The expected total investment in industries is Rs, 281,304 Lakh and these registered

⁶⁸ DIC

units earn a combined profit of 13,000 crores.

Tertiary Sector

Uddhan Singh Nagar is primarily an industrial District. Places of attraction include Nanakmatta Sahib Gurdwara (a great pilgrimage center for the Sikh religion); Ataria Temple (a renowned shrine of the Goddess Atariya); Drona Sagar Girtal and Drona Sagar, well known spots associated with the story of Pandavas; Giri Sarovar Lake; and the renowned Pantnagar Fovind Ballabh Pant University of Agriculture & technology

4. Workforce Distribution

The total population of Uddham Singh Nagar in 2012 was 16.96 Lakhs which is expected to increase to 19.59 Lakhs by 2017 and 22.63 Lakhs by 2022. As per our research methodology, the incremental manpower supply will be about 4.67 Lakhs by 2022.

Table 119: Estimated workforce distribution in Uddham Singh Nagar

Year	2012	2017	2022
Total population	16,96,567	19,59,551	22,63,300
Working age population	10,50,887	12,89,166	15,81,472
Labour force	6,32,030	8,27,070	11,00,017
Work force	6,20,575	8,18,701	10,80,080
Incremental Manpower supply		1,95,040	4,67,987

As per the table 120 below, incremental demand for human resource by 2022 for top five sector would be in Manufacturing (1.27 Lakhs), Tourism, travel, hospitality & trade (0.29 Lakhs), Food Processing (0.28 Lakhs), Transportation, logistics, warehousing & packaging (0.23 Lakhs) and Education & Skill Development (0.22 Lakhs). The total demand for semi-skilled and skilled manpower by 2017 would be 0.30 Lakhs, and 0.35 Lakhs. Similar demand for semi-skilled and skilled manpower by 2022 would be 0.052 Lakhs, and 0.53 Lakhs.

Table 120: Incremental Human Resource Demand in Uddham Singh Nagar

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
Agriculture	370	129	37	18	130	37	19
Food processing	28,481	8,447	-	2,112	14,338	-	3,585
Metal and Mining	22	6	2	3	6	2	3
Manufacturing	127,432	14,900	19,662	11,521	26,303	34,709	20,337
Electricity, Gas and Water	1,248	376	169	-	485	218	-
Building, Construction &	16,099	5,691	1,124	211	7,349	1,452	272

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
Real Estate Services							
Auto & Auto Components	14,749	1,768	2,333	1,367	3,001	3,960	2,320
Tourism, travel, hospitality & trade	29,820	6,026	2,217	4298	7827	3581	5871
Transportation, logistics, warehousing & packaging	23,086	5,815	2,612	-	10,115	4,544	-
Postal and communication	3,852	-	473	1,279	-	567	1,532
Banking, Financial Services & Insurance	3,187	-	384	1,039	-	476	1,287
Real estate and Banking services	5,139	1,863	368	69	2,299	454	85
Public administration	2,885	294	941	154	317	1,013	166
Education & Skill Development	22,897	-	-	9,020	-	-	13,877
Healthcare	8,300	-	(486)	3,755	-	1,150	3,881
Other community services	1,677	236	315	236	267	356	267
Others	-	-	-	-	-	-	-
Total	289,245	45,552	30,153	35,082	72,436	52,519	53,503

During both the periods i.e. 2012 -17 and 2017 - 2022, there would be an excess supply of manpower in the minimally skilled category. Surplus labor is expected to migrate to neighboring Districts and State for employment. Based on our stakeholder interaction, some possible areas of skill gap have been provided below:

- ▶ Construction materials & building hardware: Require trained manpower to operate CNC machines; electricians; mechanic; plumbers; painters;
- ▶ Agriculture: Lack of trained manpower having knowledge on agri-business process; seed processing; bio-fertilizer medicinal and aromatic plants; herb farming; nursery operations; post-harvest storage; use of preservatives;

Table 121: Incremental Demand-Supply Gap in Uddham Singh Nagar

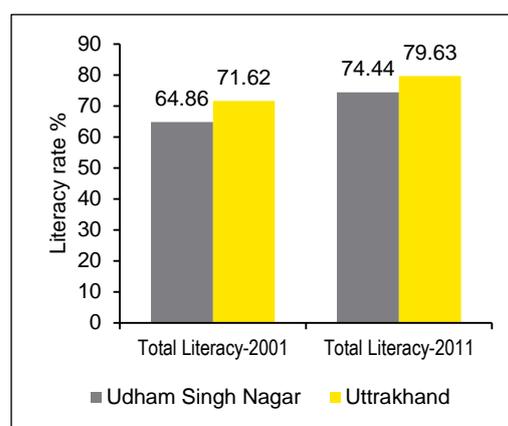
Skill Category	2012-17	2017-22
Minimally skilled	(88,835)	(119,976)

Skill Category	2012-17	2017-22
Semi-skilled	7,598	23,732
Skilled	(3,016)	1,755
Total	(84,252)	(94,489)

5. State of education

The average literacy rate as per Census 2011 (provisional data) is 74.44 percent as compared to the State's literacy rate of 79.63 percent.

Male and female literacy ratio within the District is 82.48 percent and 65.73 percent respectively which is marginally less than overall State level figures which are 88.33 percent and 70.70 percent. The literacy level in urban areas of the District is lower than the State average (77.08 percent as against 85.20 percent for State). However rural areas of the District lag behind the State average figure (it is 72.97 percent for State being 77.11 percent). In 2010-2011 the District had 8.4 percent of total number of schools of the State. In terms of the total school enrolment for the same year, the District stood at 6th rank in the State whereas the enrolment for ST and OBC in particular is rank 1st and 2nd respectively).



Literacy Rates for Udham Singh Nagar

Table 122: School Education Infrastructure in Uddham Singh Nagar

Type	Primary		Upper Primary	
	Number	Students	Number	Students
Government	810	110,716	315	45,855
Private	483	87,370	178	26,914
Total	1,293	198,096	493	72,769

Table 123: Industrial Training infrastructure in Uddham Singh Nagar

Type of Institute	Number of Institutes	Enrolment
Industrial Training Institutes	10	747
Polytechnic	3	1,784
Total	13	2,531

6. Youth Aspirations

The assessment team also held discussions with youth groups to understand their aspirations and preferred sectors of employment, wage expectations and willingness to migrate. Our key discussion points have been summarised below:

- ▶ Majority of the youth expressed their desire to get employed in industries located in SIDCUL.
- ▶ The youth were interested to do course on automobile and auto component as it is easy to find job in the Industrial area.
- ▶ The youth showed their willingness to do course in IT and IT enabled services.
- ▶ Some of them were also interested in acquiring diploma in biotechnology and food processing.

7. Development Potential and stakeholder perspective

Industries

During our interaction with the former President of the Kumaun Garhwal Chambers of Commerce and Industries ('KGCCI') we were informed that all the industries in the District were growing at an approximate rate of 10 – 15 percent per annum and there is need to support this growth with more trained manpower resources. Similar challenges regarding shortage of skilled manpower to support industrial growth were also highlighted by the General Manager, DIC; Regional Manager, SIDCUL and industry representatives met during our District visit. The industry representatives added that there is high demand for painters, electricians, and operators for Computer Numerical Control ('CNC') machines in these industries.

Industry representatives shared that there is a need to upgrade existing courses, course material, curriculum and structure of courses, with more focus on practical experience than theoretical knowledge. Industry representatives shared that most members of their chambers feel that the current work force they recruit from ITI's and other educational institutes are "trained" but not "skilled" to perform on the job. They said that in spite of their formal training in the institutes, industry has to spend considerable time and effort for all new recruits. The industry representatives also felt that there is a need to ensure that teacher training in all these institutes is strengthened, which will in turn lead to better quality of workforce.

During our interaction with the ITI faculty members we were informed that fitter courses have the highest demand, since it is among the most employable trades in the industry. While electrician courses have just been introduced, traditional courses like radio and television repair have been discontinued. The ITI faculty members also suggested that CNC machines courses should be introduced since most industries now function on these machines. During our focused group discussion with ITI students they shared that majority of the students from the previous batch who were placed in the industry, were not given the job which were promised to them and in most cases they were given other smaller jobs since they very limited practical experience, as a result students were of the opinion that ITI should focus more on providing practical training to have a better appreciation of course.

The Regional Manager, SIDCUL shared that most industries complain about the absence of an industrial tool rooms in the District. The Government has proposed setting up of industrial training rooms, once operational these will provide large scale employment at all levels from with management and technical background.

Agriculture and Allied Activities

As 67 percent of the population in the District is dependent on the agriculture sector, it is the primary source of livelihood. There are currently 4 Agri Export Zones (AEZ) in the District for basmati rice, litchi, flowers and medicinal plants. Upon discussion with the Chief Agriculture Officer it was noted that that the agri allied sector has a strong presence in the District with close to 200 seed processing plants, two bio-fertilizer plants, large number of rice, sugar and flour mills and one micro nutrient

production plant, which provides ample employment opportunities within the District. Currently only pea processing is undertaken in the District. The Chief Agriculture Officer was of the opinion that there is scope for setting up fruit processing and vegetable processing units in the District. Given the major scope for food and vegetable processing, there exists a need for training on food processor induction skill set, machine operator skills and food production supervisor skills.

Herb farming and floriculture is becoming popular in the District with an estimated 21 hectares of land currently being cultivated. Medicinal and aromatic plants like mint, lemon grass, stevia, giranium and basil have been cultivated for close to a decade thus creating scope for training programmes on bulb growing, nursery operation, chemical protection of plants, fruits and herbs, post-harvest storage and handling and use of preservatives.

Tertiary Sector

Although the District is an Industrial belt, there is potential for skilled manpower in transportation, logistics sector, IT related services, tool rooms, men power supplier, air conditioning, plumbers, electricians, machine operators, restaurants, and hotel sector.

Based on our interaction with various stakeholders, some key areas which provide skill development opportunity have been provided in the table below:

Table 124: Sector and skill requirement

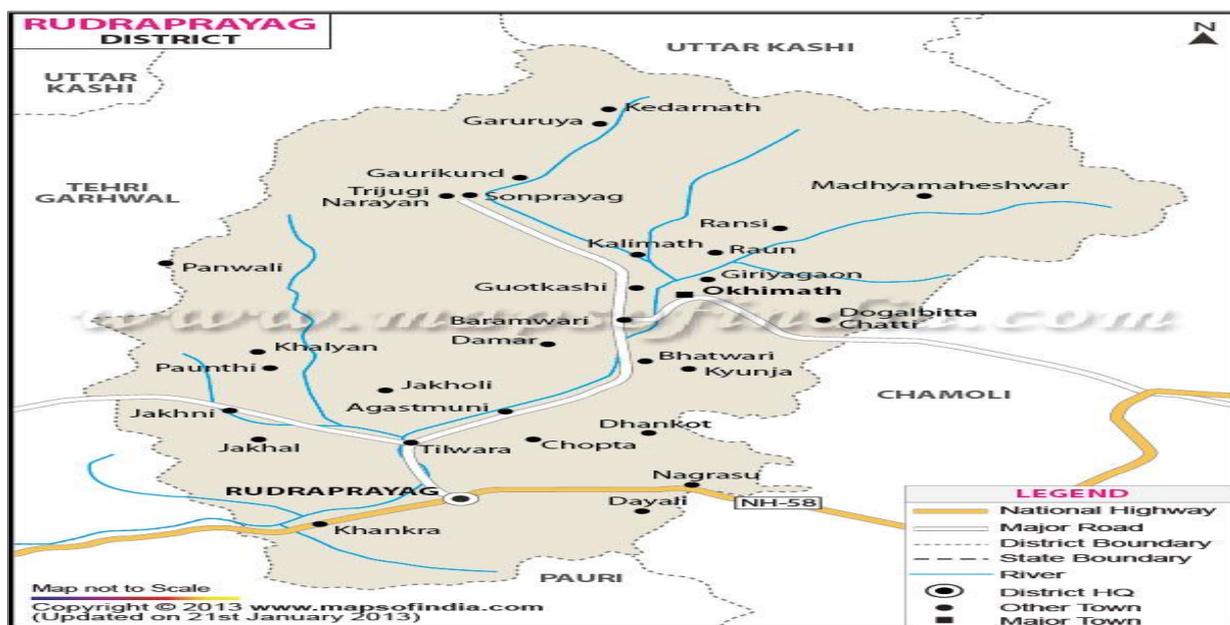
Sector	Skill Requirements
Primary	Horticulture, Floriculture, Herb farming, food processor induction skill set, machine operator skills and food production supervisor skills, farm equipment mechanic skills, poly house management, bulb growing, nursery operation, chemical protection of plants, fruits and herbs, post-harvest storage and handling and use of preservatives
Secondary	Painters, Fitters, CNC machine operators, Mechanics, Electricians
Tertiary	-

8. Recommendations

Government	<ul style="list-style-type: none"> ▶ Government can facilitate in setting up of an industrial tool room that can provide technical and management support to industries. ▶ Provide for the up gradation of the courses, techniques and machinery in the ITI's. ▶ Strengthen industry ties to encourage PPP's in skill development for different trades such as Automobile, and Electrical, and Mechanical.
NSDC	<ul style="list-style-type: none"> ▶ Support more ITI's and other training centers given that there is a huge gap in supply of skilled manpower in the District. ▶ Promote the skilling of local population on common trades such as electrician, plumber, fitter, motor mechanic etc. since the District is an Industrial hub. ▶ Promotion of institutes that provide technical training on computers, both hardware and software.
Industry	<ul style="list-style-type: none"> ▶ Industries can collaborate with the exiting training providers to develop course structure and curriculum.

<p>Vocational Training Providers</p>	<ul style="list-style-type: none">▶ Vocational training providers can provide training on new methods, techniques, and mechanization in farming. Encouraging value addition to herb cultivation.▶ Incorporate practical training as a substantial part of the existing curriculum.▶ Provide extensive training on computer skills with options for specialization in hardware and software.▶ Initiate integrated course in tourism at the institutes and colleges that provide training in ticketing, front office management, guides, interpreters, travel planners, running camps.
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6.11 Rudra Prayag



Source: Maps of India

1. Introduction

The District of Rudraprayag is spread over an area of 1,896 sq. km which is around 3.55 percent of the total geographical area of the State. Administratively, the District is divided into 3 blocks with a total of 688 villages. The District is bounded by Uttarkashi District in the north, Chamoli District in the east, Pauri-Garhwal District in the south, and Tehri-Garhwal District in the west.

Table 125: Administrative profile of Rudra Prayag

Particulars	Rudra Prayag	Uttarakhand	Source
Area (in Sq. Km)	1,896	53,483	http://www.census2011.co.in/census/state/districtlist/uttarakhand.html
Percentage share of State Geographical area	3.55%	100	N.A
Number of Community Development Blocks	3	95	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWPDistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Number of Gram Panchayats	323	7,256	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWPDistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Total number of inhabited villages	688	16,793	http://www.censusindia.gov.in/2011-prov-

Particulars	Rudra Prayag	Uttarakhand	Source
			results/paper2/data_files/uttrakhand/8-adminunit-60-61.pdf

2. Demography

As per Census 2011 (provisional data), Rudraprayag District has a population of 2.37 Lakh, which constitutes roughly 2.34 percent of the total population of the State. It is the one of the least populated Districts in Uttarakhand with only 4.19 percent of District's population inhabits the urban area.

As per Census 2011 (provisional data), Rudraprayag shows a healthy sex ratio (1,120 females per 1,000 males), which is much higher than the State's sex ratio of 963 females per 1,000 males. The District has had a reasonable decadal growth rate of 4.14 percent in population in Census 2011 (provisional data) suggests a population density of 119 sq. km making the District the eighth most densely populated District of Uttarakhand.

Table 126: Socio economic indicators for Rudraprayag

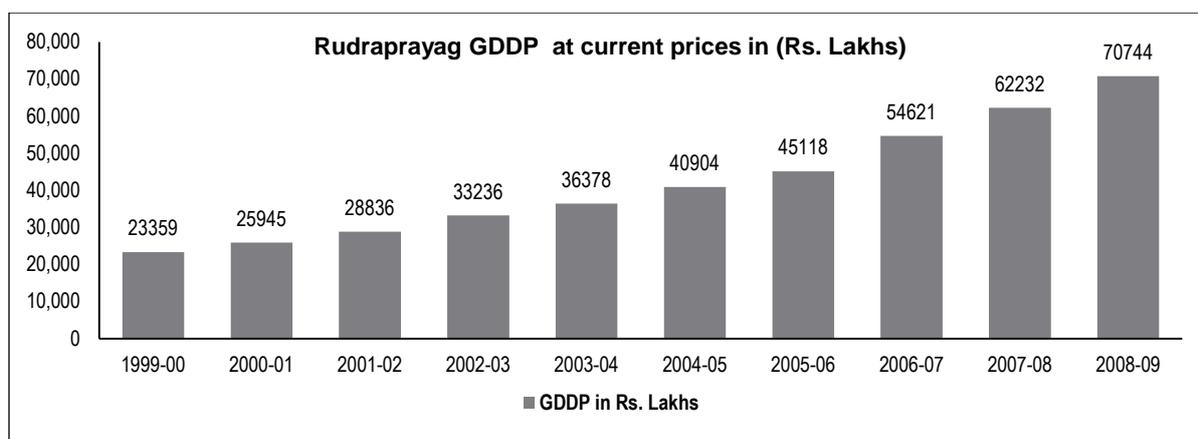
Population	Rudraprayag	Uttarakhand	Source
Total population (in Lakh)	2.37	101.17	Census 2011 (provisional data)
Total population (Male) (in Lakh)	1.11	51.54	Census 2011 (provisional data)
Total population (Female) (in Lakh)	1.25	49.63	Census 2011 (provisional data)
District share in State's population	2.34%	N.A	N.A
Density of population	119	189	Census 2011 (provisional data)
Decadal growth of population (2001-2011)	4.14%	19.17%	Census 2011 (provisional data)
Percentage of urban population	4.19%	30.55%	Census 2011 (provisional data)
Scheduled Caste population percentage of State population	17.7%	17.90%	Census 2001
Schedule Tribe population percentage of State population	0.07%	3%	Census 2001
Sex ratio	1120	963	Census 2011 (provisional data)

3. Economy

As per the data collected by the Directorate of Economics & Statistics (2008-09), Rudraprayag had a Gross District Domestic Product⁶⁹ of Rs. 70,744 Lakh which amounts to 1.76 percent of the total State GDP. The per capita income of Rudraprayag for 2008-09 was valued at Rs. 24,474, which is significantly lower than the State per capita income of Rs. 36,520⁷⁰.

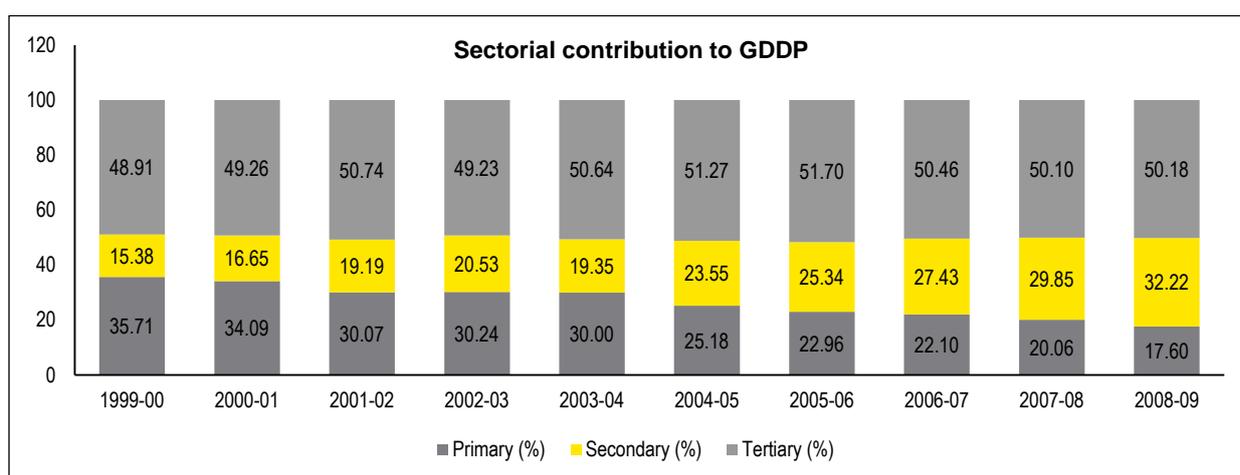
⁶⁹ Statistical Diary, Government of Uttarakhand

⁷⁰ <http://planningcommission.nic.in/plans/stateplan/present/Uttarakhand.pdf>



Source: Planning Commission, Government of Uttarakhand

Sector-wise contribution towards the GDDP is 17.60 percent, 32.22 percent and 50.18 percent for the Primary, Secondary and Tertiary sectors respectively.



Source: Planning Commission, Government of Uttarakhand

Primary Sector

Rudraprayag is predominantly an agrarian economy. Majority of the cultivators have their own land. The District has the least number of agriculture laborers (landless farmers) in Uttarakhand.

Table 127: Area, Production and Productivity of Main crops in Rudraprayag (2011-12)

Crop	Area (Hectare)	Production (Metric Ton)	Productivity (Ton/Hectare)
Paddy	9,838	13,927	14.18
Wheat	11,945	17,934	15.01

Source- DAO

As per recent data (2012-13) provided by District Agriculture officer ('DAO') only 8.11 percent of the total geographical area is cultivatable. Wheat and paddy remain the major crops across the District constituting approximately 15.01 ton/hectare and 14.01 ton/hectare respectively. In the District, the majority are small farmers who own around 78 percent of the cultivatable area but have scattered land holdings.

Apart from this, most of the tribal's in this region live in remote areas and generally indulge in activities

of making mats, baskets, flower pots and fancy bags. Ringal (type of Dwarf Bamboo), which is used to make all these products is available in abundance (in Oak forest of Garhwal Himalaya). In remote villages of this District (*Mansuna, Maikhandra, Makku Karandhar, Khod, Banj, Sari*) it is the basic source of livelihood for the socially backward castes. Rural household produces handicraft items from these materials for their own use and for sale in local market.

Secondary Sector

Rudraprayag does not have many large scale or medium scale industries. It has a lot of upcoming MSMEs instead. Their focus is primarily on mining of a number of minerals such as asbestos, magnesite, soap stone, copper, iron, graphite which are found in this District. The revenue generated by major mineral and ores by the District were Rs1,29,58,113 (2009-10) and Rs 1,44,65,967 (2010-11)⁷¹. Investment in Forest Based Products- Lisa, Wood Carving, etc., Engineering work shops, Pre cast Building Material etc. has great potential

Tertiary Sector

Rudraprayag is a small District on the holy confluence of river Alaknanda and Mandakini. It is of immense significance for the pilgrims of "Char Dham Yatra", as it is the junction for visiting Badrinath and Kedarnath Temple. As a result, providing a fundamental base for Tourism and allied activities in the District.

Due to the increase in the urban population and influx of tourist, there is a rapid demand for Hotel, Motel, Resorts, Hospitals and Service centers. However, public transport system is inadequate. A small fraction of foreign tourists visits this District. In 2005-06, out of total tourists who visited Uttarakhand only 4.36 percent⁷² also visited Rudraprayag District. Thus, growth of the tourism industry in the District has remained relatively slow. While there remains an obvious demand of potential and service demand in this sector, the local community is not aware or does not have the knowledge of developing this sector to match the demand.

4. Workforce Distribution

The total population of Rudraprayag in 2012 was 2.38 Lakhs which is expected to increase to 2.43 Lakhs by 2017 and 2.48 Lakhs by 2022. As per our research methodology, the incremental manpower supply will be about 0.32 Lakhs by 2022.

Table 128: Estimated workforce distribution in Rudraprayag

Year	2012	2017	2022
Total population	2,37,820	2,42,694	2,47,668
Working age population	1,47,222	1,59,095	1,71,925
Labour force	90,792	1,14,699	1,40,872
Work force	88,153	1,09,806	1,36,778
Incremental Manpower supply		23,907	50,080

⁷¹ Geology & Mines Unit, DI, Dehradun

⁷² ICRIER Working paper no. 217

As per the table 129 below, incremental demand for human resource by 2022 for top five sector would be in Agriculture (0.079 Lakhs), Education & Skill Development (0.071Lakhs), Tourism, travel, hospitality & trade (0.41 Lakhs), Building, Construction & Real Estate Services (0.034 Lakhs) and Food Processing (0.0 0Lakhs). The total demand for semi-skilled and skilled manpower by 2017 would be 0.021 Lakhs, and 0.05 Lakhs. Similar demand for semi-skilled and skilled manpower by 2022 would be 0.031 lakhs, and 0.071 Lakhs.

Table 129: Incremental Human Resource Demand in Rudraprayag

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
Agriculture	7,993	2,732	781	390	2,863	818	409
Food processing	3,014	895	-	224	1,516	-	379
Metal and Mining	-	-	-	-	-	-	-
Manufacturing	2,135	470	178	265	629	238	354
Electricity, Gas and Water	95	31	14	-	35	16	-
Building, Construction & Real Estate Services	3,408	1,205	238	45	1,556	307	58
Auto & Auto Components	136	20	26	15	24	32	19
Tourism, travel, hospitality & trade	4112	586	454	516	886	830	840
Transportation, logistics, warehousing & packaging	2,778	701	315	-	1,216	546	-
Postal and communication	154	-	19	51	-	23	61
Banking, Financial Services & Insurance	77	-	10	27	-	11	29
Real estate and Banking services	339	123	24	5	152	30	6
Public administration	254	26	83	14	28	89	15
Education & Skill Development	7,129	-	-	2,809	-	-	4,320
Healthcare	1,354	-	(79)	613	-	188	633
Other community services	232	33	44	33	37	49	37
Others	-	-	-	-	-	-	-

Total	33,209	6,821	2,106	5,005	8,942	3,177	7,159
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During both the periods i.e. 2012 -17 and 2017 - 2022, there would be an excess supply of manpower in minimally skilled and semi-skilled category, whereas there would be demand for skilled manpower. Based on our stakeholder interaction, some possible areas of skill gap have been provided below:

- ▶ Agriculture: Modern farm equipment's; awareness on High Yielding Variety Seeds; Cultivation of aromatic and medicinal plants; floriculture; fruit processing; Low awareness on breed improvement through Artificial Insemination;
- ▶ Tourism, travel, hospitality & trade: Lack of trained tour guides; cab drivers; hotel front office boys; Instructors for Bungee jumping; river rafting; organic farming;

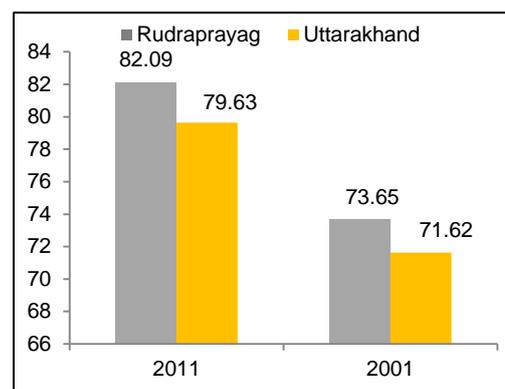
Table 130: Incremental Demand-Supply Gap in Rudraprayag

Skill Category	2012-17	2017-22
Minimally skilled	(11,662)	(10,466)
Semi-skilled	(962)	(769)
Skilled	2,648	4,340
Total	(9,976)	(6,895)

5. State of education

As per Census 2011 (provisional data), the average literacy rate is marginally better than the State's average. Average Literacy rate of Rudraprayag in 2011 is 82.09 percent vis-à-vis 73.65 percent in 2001. Gender wise male and female literacy is 94.97 and 70.94 respectively. For 2001 Census, the respective figures were 89.92 and 59.97 showing an increase in literacy level for men by over 5 percent whereas the literacy rate for women has risen by over 11 percent since 2001.

There has been steady improvement in basic education situation. As per the provisional District Elementary Education Report Card for the year 2010-11, 98.6 percent of the students were able to complete primary education and transit to upper primary level. At primary level, there are a total of 994 schools in this District but only 91 schools till 12th standard. Majority of the schools are Government funded and enrollment over the years has seen a marginal upward trend at upper primary level. Only in few schools, the medium of instruction is English.



Literacy Rates for Rudra Prayag District

Table 131: School education infrastructure in Rudraprayag

Type	Primary		Upper Primary	
	Number	Students	Number	Students
Government	572	22,049	226	12,696

Private	140	9,965	52	3,403
Total	712	32,014	278	16,099

For higher education, there are 3 Government Degree colleges and one Post-graduate College in Rudraprayag. The post-graduate Degree College offers courses in Arts, Sciences and Commerce streams. For the year 2011-12, the total students enrolled in these colleges were 3,442. In terms of streams, there is higher proportion of students in Arts and Commerce streams with the highest in arts, followed by commerce and science. Data published on the Directorate of Higher education (DHE) website shows that maximum enrolment is in Hindi Literature followed by Political Science and Geography.

Table 132: Student Strength of Government colleges in Rudraprayag for the year 2010-11

College name	Status	Established In	Girls Enrolled	Boys Enrolled	Total
Government Post Graduate College, Agastmuni	Post Graduate	1974	1,339	1,832	3,171
Government Degree College, Jakholi	Graduate	2001	61	147	208
Government Degree College, Rudraprayag	Graduate	2006	42	9	51
Government Degree College, Guptkashi	Graduate	2009	12	0	12
Total			1,454	1,988	3,442

Source: Directorate of Higher Education, Uttarakhand

On the technical front, Rudraprayag District has one Government Polytechnic Institute, which was established in 2005. Currently it provides diploma only in computer science and engineering' courses. Further, there are three registered ITIs in the District.

Table 133: Industrial Training infrastructure in Rudraprayag

Type of Institute	Number of Institutes	Enrolment
Industrial Training Institutes	4	156
Polytechnic	2	48
Total	6	204

6. Youth aspiration

The assessment team also held discussions with youth groups to understand their aspirations and preferred sectors of employment, wage expectations and willingness to migrate.

The key points are summarised below:

- ▶ The youth were interested in becoming sports instructor for bungee jumping, and river rafting. This can get employment for them in their District as well as in Himachal Pradesh.
- ▶ Youth were interested in learning post-harvest food processing technology and want to set up their own enterprise with support from government.

- ▶ Most of the youth were interested in setting up their own hotels, restaurants, dhabas, and travel agency to tap the local tourism but lack resource and infrastructure for the same.

7. Development Potential and stakeholder perspective

Tourism & Hospitality Sector

The presence of various Hindu temples makes the District a destination for religious tourism and also offers scenic beauty.

The sector provides employment in hospitality and allied activities but the remuneration in this sector remains nominal. This is mainly because the demand is only seasonal, up surging during the 'Char Dham Yatra season'. Infrastructure, connectivity and transportation facilities are the key areas, which need to be prioritized for tapping the tourism potential. Development of ropeway system in line with reducing time from reaching destinations would be beneficial.

There is scope for new hotels with modern facilities and skilled staff to attract foreign as well as domestic tourists in the region. However, the quality standards in the hotel industry it is a matter of concern in the District. There is a need to improve the quality of the hotels- both in terms of infrastructure and services to attract more tourists

Development of adventure sports service providers in the District will also boost the related ancillary activities. Interaction with the youth of the District shows that the majority of them are only searching for opportunities in the traditional sectors like army, Government jobs etc. Due to lack of awareness, large number of arts and Commerce graduates are not able to find avenues of employment. ITI education is considered costly without adequate employment opportunities. In this light, adventure sports like river rafting and bungee jumping could be evolved on a much larger scale to tap the interest of the youth aside of their traditional inclinations. Skill training for tour guides, hotel management and professional drivers is imperative in this respect.

Agriculture & Organic Farming

Since, most of the cultivation done here is through traditional means, there is a huge potential of increase in productivity by use of modern agricultural equipment. Currently, the Agricultural Department provides loans to the farmer at subsidized rate for up-gradation of equipment⁷³. Increase in awareness among women (who are majorly involved in agriculture) farmers group on modern methods of production will go a long way in increasing the productivity and reducing the manpower required.

Use of chemical fertilizers in this region is limited. Thus, most of the produce is sold under the banner of Organic Produce but the yield is comparatively low. Uttarakhand Organic Commodity Board (UOCB) was set up to promote organic farming in the State. Though there exist export markets for organic produce like basmati rice and finger millet but lack of infrastructural facilities for processing and value addition to this produce, impedes the envisaged returns. Further marketing of these products is also an issue. Branding organic agricultural products would help in creating an international brand. It is required to create awareness among the farmers and bring them under an umbrella co-operative that can be further decentralized at the local level. There is a huge scope of organized farming training among local youths. Awareness on the demand and higher market price for organic produce should also be disseminated to the local agrarian population in attempts to attract them in producing organic products at a larger and more commercial level.

While the concerned department provides various training and extension services through Krishi

⁷³ Extensive use of big machines like tractors won't be possible as landholdings aren't consolidated.

Vigyan Kendra, it was regarded as inadequate. Moreover, the educated male youth prefers to migrate to cities in search of better employment opportunities which results in all the responsibilities related to cultivation to fall on the shoulders of women. It is therefore considered requisite to develop skills of Women SHG's. The main problem in this regard has been that the property is not registered in the name women who actually indulge in all the agriculture related chores. In absence of the male head of the household, they find it difficult to garner loans from the bank for up-gradation and other purposes. Joint accounts or education on joint registry of land and property could help women employed in agriculture make decisions and improve farming practices while the men work in urban areas and major cities.

Floriculture & Fruit Processing

Floriculture could be the growth-driving activity of the District. The main issue in Floriculture in the District so far, has been the unorganized approach followed by the concerned department of not being able to prepare a roadmap for sustainable production of various medicinal and aromatic plants. There is a need of scaling up the flower market to gain a greater coverage.

Also, there is abundant production of fruits like Malta in the District. However, there exist few Government owned and sponsored go-downs for storage of these fruits. These are only actively used by Government agencies and local businessmen. However local farmers rarely avail of this benefit, due to lack of awareness. Apart from that, there is no cold storage facility due to which the farmers are not able to get remunerative prices for produce like potato and vegetables that rot or go waste over a few days.

In this regard, it is requisite that the farmers should be provided with the planting seeds at marginal rates and proper training should be provided to the herb collector for safe harvesting of endangered and rare species⁷⁴. This sector shows promise to develop from subsistence to commercialization. In this evolving process it will require professionals with technological, marketing and business skills. Imparting training to the youths with technical and scientific know-how related to agriculture is the need of the hour.

There is no fruit processing centers apart from few maltas juice processing units at private level in this District. Most of the produce is dispatched to Dehradun and other plain areas in the State. Inadequate post-harvest technology (processing, grading, processing and packaging) in the District results in lack of motivation among farmers to be entrepreneurial and indulging in non-traditional activities. There is a need for fruit processing training and post-harvest technology training. It was noted that most of the interviewed youth didn't want to be associated with agriculture related activities as they presume that it won't provide them financial security. Such trainings thus, would greatly benefit these youth by involving them into lucrative business activities within their Districts.

Animal Husbandry

Small and marginal farmers are heavily dependent on the livestock. The population of livestock is considerably significant but the productivity is low. There has been some improvement in the availability of veterinary hospitals and artificial insemination facility centre but still a lot of work needs to be done on establishing a milk-processing unit and strengthening the distribution structure. There are successful cases of Aanchal Cooperative (Dairy) and swine rearing in the District under PMEGP scheme. There is also potential in poultry farming, swine and sheep rearing.

Based on our interaction with various stakeholders, some key areas which provide skill development opportunity have been provided in the table below:

Table 134: Sectors and skill requirement

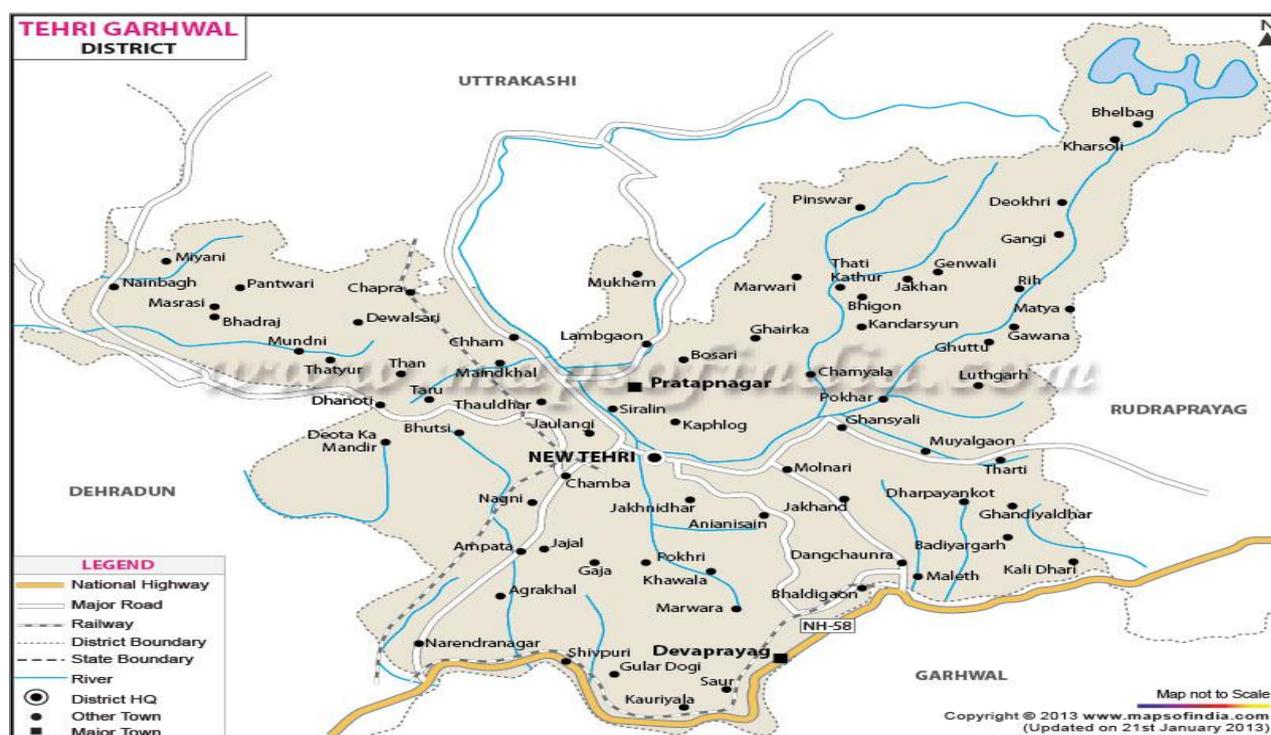
⁷⁴ *Status of Medicinal plants..... in Rudraprayag District, G.R.Gargya and L.D Gargya*

Sector	Skill Requirements
Primary	Medicinal and Aromatic plant, Sericulture and Horticulture and forest based products like Ringal (Dwarfed Bamboo). In order to produce these goods on extensive scale, youth needs to be skilled in developing forward and backward linkages.
Secondary	Focus on infrastructure for establishment of value added wood & wool based industries. Credit provision need to be smoothened.
Tertiary	Tourism though season, has a huge potential. Pilgrims come during the Yatra season but do not stay for long periods due to low quality of Hotels and Resorts, lack in variety of foods, staff problems etc. Organized approach needs to be followed with re-structuring of the existing Vocational Institute to meet the growing demand of this sector

8. Recommendations

Government	<ul style="list-style-type: none"> ▶ Promote awareness generation program on medicinal and aromatic plants. Support training programs on extraction and use of medicinal plants. ▶ Encourage to set up fruit processing plant and support training and skill development activities on commercial production and value addition done the value chain.
NSDC	<ul style="list-style-type: none"> ▶ NSDC can focus on promoting short term courses for farmers to encourage the introduction of mechanization and to help understand the use and maintenance of machinery in agriculture. These courses can be run for youth groups to train them as mechanics and electricians that could be employed in the farm mechanization industry.
Industry	<ul style="list-style-type: none"> ▶ Rudraprayag is not an industrially developed area, the MSMEs in this area can take initiatives to promote <ul style="list-style-type: none"> • scientific mining • wool processing • food processing ▶ These being a labour intensive area would help promote skills by generating employment.
Vocational Training Providers	<ul style="list-style-type: none"> ▶ Provide avenues for mass training on communication skills, computers which would enable the unemployed population to be eligible for better job opportunities with better starting salaries. ▶ VTC in the District should introduce short term training programmes on basic levels of adventure sports, hotel management/ tourism related skills including culinary, housekeeping, bartending, trekking guides etc., ▶ It is essential to incorporate a component of soft skill training like communication skills, personality development etc. in all courses. ▶ VTC can provide the local farmer families, training on the latest techniques for growing fruits, flowers and vegetables and managing nurseries and orchard's. Additionally short term courses on the use of mechanization in agriculture are also required to help improve the efficiency of the farmers.

6.12 Tehri Garhwal



Source: Maps for India

1. Introduction

Tehri Garhwal is spread over an area of 4,085 sq. km which forms approximately 7.64 percent of the total geographical area of the State. Administratively, the District has been divided into 2 subdivisions (Kirti Nagar and Tehri-Pratap Nagar), 9 blocks and 1,862 villages. Tehri Garhwal is surrounded by District of Uttarkashi in the north, Dehradun District in the West, Rudraprayag in the East and Garhwal in the South.

Table 135: Administrative profile of Tehri Garhwal

Particulars	Tehri Garhwal	Uttarakhand	Source
Area (in Sq. Km)	4,085	53,483	http://www.census2011.co.in/census/state/districtlist/uttarakhand.html
Percentage share of State Geographical area	7.64%	100	N.A
Number of Community Development Blocks	9	95	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWPDistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Number of Gram Panchayats	895	7,256	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWPDistrictMain.aspx?IState=035&StName=UTTARAKHAND)

Particulars	Tehri Garhwal	Uttarakhand	Source
Total number of inhabited villages	1,862	16,793	http://www.censusindia.gov.in/2011-prov-results/paper2/data_files/uttrakhand/8-adminunit-60-61.pdf

2. Demography

As per the Census 2011 (provisional data), the total population of Tehri Garhwal is 6.16 Lakh, constituting 6.09 percent Uttarakhand's total population. The urban population is 2.26 percent of the total population making Tehri Garhwal primarily a rural area. It ranks 5th among the 13 Districts in terms of sex ratio (1,078 females per 1,000 males). With population density of 169 people per sq. km, Tehri Garhwal is the 6th most densely populated District in the State, but below the State's average of 189 persons per sq. km. This is due to the fact that forests occupy most of the area in the District.

Table 136: Socio economic indicators for Tehri Garhwal

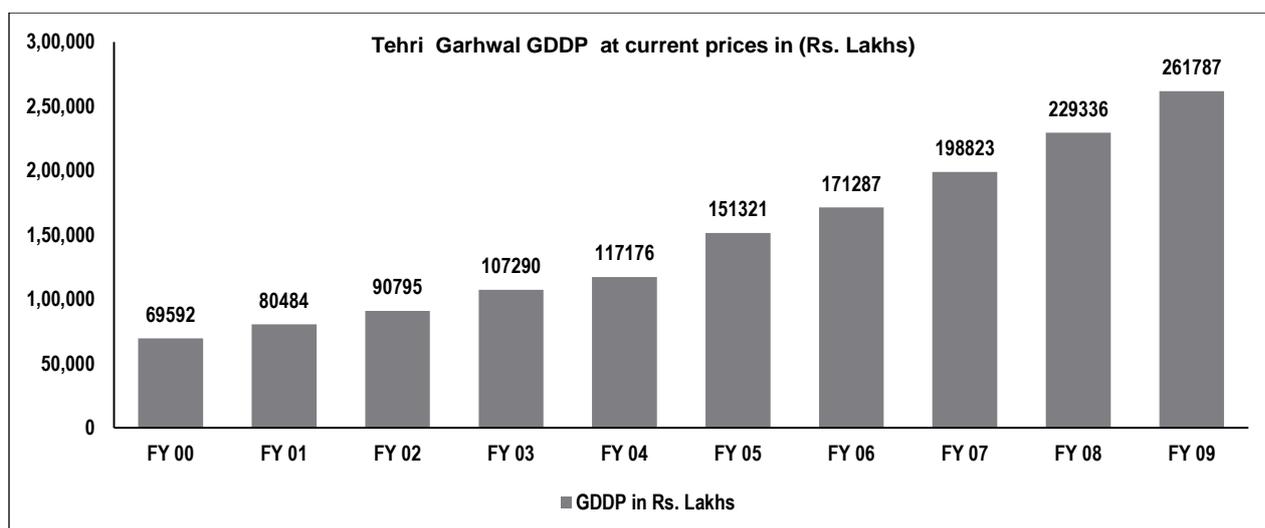
Population	Tehri Garhwal	Uttarakhand	Source
Total population (in Lakh)	6.16	101.17	Census 2011(provisional data)
Total population (Male) (in Lakh)	2.96	51.54	Census 2011 (provisional data)
Total population (Female) (in Lakh)	3.19	49.63	Census 2011 (provisional data)
District share in State's population	6.09%	N.A	N.A
Density of population	169	189	Census 2011 (provisional data)
Decadal growth of population (2001-2011)	1.93%	19.17%	Census 2011 (provisional data)
Percentage of urban population	11.37%	30.55%	Census 2011 (provisional data)
Scheduled Caste population percentage of State population	14.4%	17.90%	Census 2001
Schedule Tribe population percentage of State population	0.27%	3%	Census 2001
Sex ratio	1,078	963	Census 2011 (provisional data)

3. Economy

As per the data collected by the Directorate of Economics & Statistics (2008-09), Tehri Garhwal had a Gross District Domestic Product⁷⁵ of Rs. 261,787 Lakh which amounts to 6.52 percent of the total State GDDP. The per capita income of Tehri Garhwal for 2008-09 was valued at Rs. 33,999, which is lower than the State per capita income of Rs. 36,520⁷⁶.

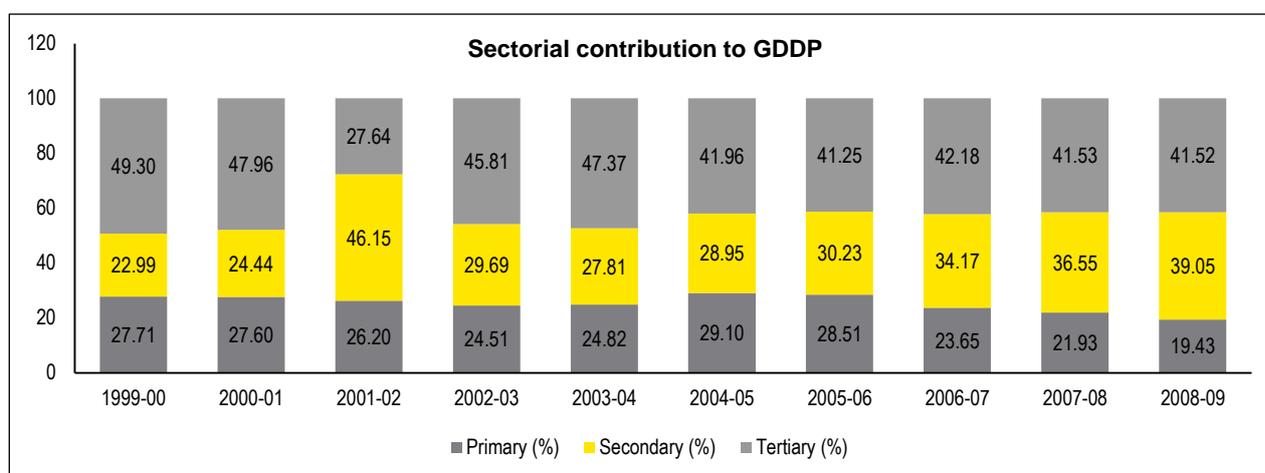
⁷⁵ *Statistical Diary, Government of Uttarakhand*

⁷⁶ <http://planningcommission.nic.in/plans/stateplan/present/Uttarakhand.pdf>



Source: Planning Commission, Government of Uttarakhand

The contribution of various sectors to the District GDP has been 19.43 percent by the primary sector, 39.05 percent by the industry sector and 41.52 percent by the services sector.



Source: Planning Commission, Government of Uttarakhand

Primary Sector

As per Uttarakhand Agriculture Statistics Report published in 2009-2010, almost 89 percent of the land in the District is covered under forest and only 5.48 percent of the total geographical area of land was brought under cultivation in the District. The landholding per individual in the District is 0.11 hectares whereas the size of average landholding is 0.87 hectares. Around 95 percent of the rural population is dependent on agriculture for their livelihood. Rice and wheat are the primary crops with a gross cropped area of around 22,000 hectares (though only one third of this area is cropped using irrigation). Ragi, Maize and Barley are primarily grown without any irrigation. Apart from cereals, other major crops include pulses, fruits & vegetables.

Secondary Sector

As per the District Industrial Center, there are 6,231 registered industrial units. The estimated average number of daily workers employed in these registered small scale industrial units is 14,374. Currently there are no medium or large scale industry and public sector undertaking in the entire District. Some of the prominent micro and small enterprises are agro-based (703 units), readymade garments (1883 units), wooden based furniture (323 units), engineering units (217 units), and repairing service (352 units).

Tertiary Sector

Tehri Garhwal is one of the popular Districts for its natural beauty. There is very good scope of tourism base service industry like hotel, restaurants, adventure sports, river rafting, and trekking. Place of attraction includes:

Table 137: Key tourist attraction in Tehri Garhwal

Location	Tourist Attraction
New Tehri	Overlooks a massive artificial lake and a Dam
Narendra Nagar	Offers a fine view of the Ganga and the beautiful Doon Valley
Chamba	Offering a splendid view of the snow-capped Himalayas and the serene Bhagirathi valley
Dhanaulti	Located amidst thick, virgin forests of Deodar, Rhododendron and Oak, has an atmosphere of perfect peace & tranquility
Kunjapuri	Contains an old temple dedicated to the goddess Kunjapuri Devi which is visited by a number of people every year.
Dev Prayag	Raghnath Temple; Baital Kund, Brahm Kund; Surya Kund and Vasisht Kund; the Indradyumna Tirth, Pushyamal Tirth, Varah Tirth ; Pushpavatika ; Baitalshila and Varahishila ; the shrines of Bhairava, Bhushandi, Durga and Vishveshvara ; and a temple dedicated to Bharat.
Nagtibba	Offers trekking opportunities and adventure sports
Khatling Glacier	Sight of Khatling glacier is spectacular

4. Workforce Distribution

The total population of Tehri Garhwal in 2012 was 6.17 Lakhs which is expected to increase to 6.23 Lakhs by 2017 and 6.29 Lakhs by 2022. As per our research methodology, the incremental manpower supply will be about 1.62 Lakhs by 2022.

Table 138: Estimated workforce distribution in Tehri Garhwal

Year	2012	2017	2022
Total population	6,17,587	6,23,514	6,29,497
Working age population	3,82,540	4,10,167	4,39,790
Labour force	2,35,949	3,05,018	3,98,438
Work force	2,31,365	3,00,655	3,90,697
Incremental Manpower supply		69,069	162,489

As per the table 139 below, incremental demand for human resource by 2022 for top five sector would be Agriculture (0.19 Lakhs), Education and Skill Development (0.18 Lakhs), Tourism, travel, hospitality & trade (0.16 Lakhs), Building, Construction & Real Estate Services (0.14 Lakhs), and Transportation, logistics, warehousing & packaging (0.094 Lakhs). The total demand for semi-skilled and skilled manpower by 2017 would be 0.072 Lakhs, and 0.13 Lakhs. Similar demand for semi-skilled and skilled manpower by 2022 would be 0.11 Lakhs, and 0.19 Lakhs

Table 139: Incremental Human Resource Demand in Tehri Garhwal

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
Agriculture	19,283	6,593	1,884	942	6,906	1,973	987
Food processing	1,014	301	-	75	510	-	128
Metal and Mining	95	23	9	13	25	10	14
Manufacturing	7,771	1,697	643	956	2,305	873	1,298
Electricity, Gas and Water	1,432	432	194	-	556	250	-
Building, Construction & Real Estate Services	14,162	5,006	989	185	6,466	1,277	239
Auto & Auto Components	249	34	45	26	47	62	36
Tourism, travel, hospitality & trade	16,979	2,151	2,038	2,049	3,445	3,796	3,500
Transportation, logistics, warehousing & packaging	9,425	2,298	1,032	-	4,205	1,889	-
Postal and communication	854	-	105	284	-	126	340
Banking, Financial Services & Insurance	159	-	21	57	-	22	59
Real estate and Banking services	854	310	61	11	382	75	14
Public administration	924	94	301	49	101	324	53
Education & Skill Development	18,365	-	-	7,235	-	-	11,130
Healthcare	2,849	-	(167)	1,289	-	395	1,332
Other community services	526	74	99	74	84	112	84

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
Others	-	-	-	-	-	-	-
Total	94,939	19,013	7,254	13,245	25,031	11,183	19,214

During both the periods i.e. 2012 -17 and 2017 - 2022, there would be an excess supply of minimally skilled manpower, whereas there would be demand for semiskilled and skilled manpower in both the categories. Based on our stakeholder interaction, some possible areas of skill gap have been provided below:

- ▶ Tourism, travel, hospitality & trade: Shortage of manpower who could communicate in English effectively; travel guide; front offices boys of hotels and restaurants;
- ▶ Agriculture: Low awareness on advantages of organic farming; inadequate knowledge of cultivation practices of flowers; less use of High Yielding Variety of Seeds;
- ▶ Construction materials & building hardware: Lack of skill in wool processing, shearing, and carding using modern equipment's;

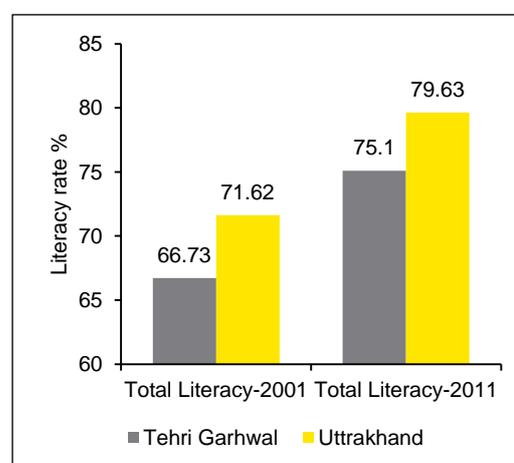
Table 140: Incremental Demand-Supply Gap in Tehri Garhwal

Skill Category	2012-17	2017-22
Minimally skilled	(38,692)	(54,160)
Semi-skilled	1,424	4,018
Skilled	7,711	12,150
Total	(29,557)	(37,992)

5. State of education

The average literacy rate as per Census 2011 (provisional data) is 75.10 percent as compared to the State's literacy rate of 79.63 percent.

Gender wise male and female literacy is 89.91 percent and 61.77 percent respectively, whereas the State level figures stood at 88.33 percent and 70.70 percent respectively. The literacy level in urban areas of the District is higher than the State average (88 percent⁷⁷ as against 85.20 percent for State). However rural areas of the District lag behind the State average figure (it is 73.40 percent for State being 77.11



Literacy Rates for Tehri Garhwal District

⁷⁷ <http://www.census2011.co.in/census/district/577-tehri-garhwal.html>. Accessed on 04 March 2011.

percent) Census 2011 (provisional data).

Table 141: School education infrastructure in Tehri Garhwal District

Type	Primary		Upper Primary	
	Number	Students	Number	Students
Government	1,474	58,504	551	33,189
Private	282	24,560	75	6,609
Total	1,756	83,064	626	39,798

As per provisional District Elementary Education Report Card (2010-2011) the District had 10.5 percent of total number of schools of the State. Currently there are 9 Government degree colleges offering course on Hindi, English, History, Economics, Geography, Political Science, Sociology, and Environmental Studies and one Government run Industrial Training Institute (ITI) offering courses on Fitter, Data Entry operator, Electrician, Mechanical Motor, Vehicle Driving, Electronic Mechanic, Wiremen and Hindi Typing.

Table 142: Industrial Training infrastructure in Tehri Garhwal District

Type of Institute	Number of Institutes	Enrolment
Industrial Training Institutes	12	449
Polytechnic	1	248
Total	13	697

6. Youth Aspirations

The assessment team also held discussions with youth groups to understand their aspirations and preferred sectors of employment, wage expectations and willingness to migrate. Our key discussion points have been summarised below:

- ▶ There is lack of awareness on employable courses among the youth community as the female students want to become teachers and male students aspire for Government jobs.
- ▶ Instead of taking direct agriculture related activities, male youth preferred to undertake agriculture only with modern equipment's and less labor intensive techniques. Their inclination is much towards learning agro, and food processing technology.
- ▶ There is a need to align the existing courses offered by the ITI with industry needs and requirements to ensure better employability.

7. Development Potential and stakeholder perspectives

Horticulture and Floriculture

During our interaction with the representatives of the Agriculture Department, the following points were highlighted:

- ▶ With stumpy availability of crop land, diversification in agriculture is required to develop alternative sources of livelihood. Alternative areas of diversification are horticulture farming, spices and condiments and organic farming. Current yield levels can be effectively raised in a stable and sustainable manner by adopting organic farming methods, use of high yielding variety of seeds,

and modern farming equipment's.

- ▶ Organic products have a parallel market, which if captured in strategic manner can generate employment opportunities in the District. Skilled workforce will be required in promoting organic farming methods and developing forward linkages for marketing of these products;
- ▶ Sorting, grading and processing of food products is another area requiring skilled workforce;
- ▶ Climatic conditions of the District provide adequate opportunities for commercial floriculture farming. The District is en-route to religious tourism and provides potential for growth in floriculture business. Market demand especially from pilgrimage centers of Haridwar and Rishikesh provides opportunities for growth and employability in future.

Industry and allied sector

Given the absence of medium and large industrial set-ups in the District, there is great potential for food and agro-processing industry, woolen processing units, hosiery units and handicrafts industries in the District. Some of the MSMEs identified by the District Industrial Centre that have potential for growth and employment are as follows:

- ▶ Food and agro-based processing industries – Agro based industries such as fruit pulp sauce, ketchup, pickles, puree, grains & cereals processing unit, food packaging units with eco-friendly packaging material;
- ▶ Handloom and handicraft industries – Wool processing unit, readymade garments centre;
- ▶ Automobile – automobile repair shop, service centers;
- ▶ Forest based- paper products, wood carvings, raisin based products (turpine).

Food processing industry has potential to generate large scale employment in the District. Our discussion with industry representatives highlighted that based on the availability of raw material in the District, there is potential scope for growth in fruit pulp enterprise, grains and cereal processing unit, and food packaging industry. Lack of skilled manpower in processing facilities makes it difficult to scale up production. On our interaction with General Manager, District Industrial Centre, it was suggested to develop capacity of manpower in the District through Government Technical Institutions. Existing ITI and training centers lack capability to impart training on specific skills related to food processing. However, new ITI's formed under the Public Private Partnership mode have introduced a course on horticulture, that has potential to train people on horticulture and allied activities. Since Tehri Garhwal has a potential for growth in food and agro-food processing industries, a skill based course from ITI can go a long way in generating skilled manpower for languishing horticulture sector.

Dhalwala area in Rishikesh has huge potential to be developed as a common facility centre for wool processing and cleaning. Wool industry has not been developed in an integrated manner. Industry representatives feel that there is gap in skilled manpower for processing raw wool to final product. Generally wool processing consists of 7-8 process i.e. skirting, shearing, carding, roving, spinning, wind and/or skeining. Emphasis was laid on providing training on spinning, which is considered to be technical and complex of all the process. There is severe gap of skilled manpower in this process and it requires at least 6 months in getting proficient in spinning. Currently, skilled manpower is outsourced from Ludhiana and Panipat to meet the industry requirement. Similarly for hosiery and handloom units, there is requirement for skilled manpower in running knitting machines and adding design to the final product. There is especially shortage of the master foreman to run these units.

Services and allied sector

During our interaction with the principal and students of the inter girls college both stressed on the need for imparting training on spoken English. As per the principal, there is shortage of English teachers that can impart soft skills related training which could enhance the employability of students in the tourism industry (travel guide, front offices of hotels and restaurants where interaction with foreign tourists is expected).

Based on our interaction with various stakeholders, some key areas which provide skill development opportunity have been provided in the table below:

Table 143: Sector and skill requirement

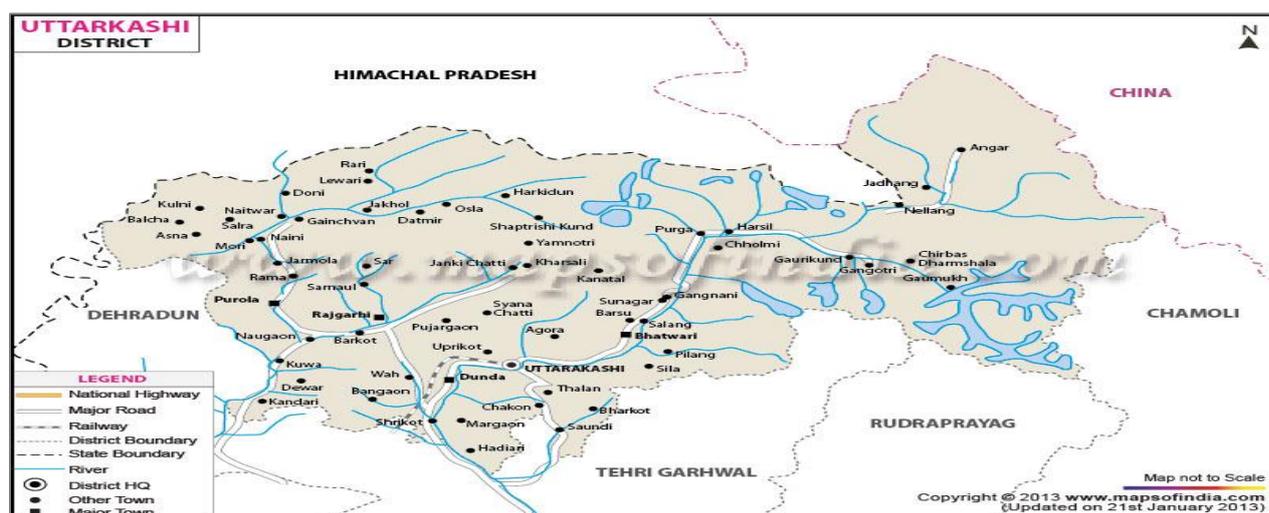
Sector	Skill Requirements
Primary	There is scope of diversification of agriculture to create different structures of employment. Potential for growth and development exists in setting up food and agro-food processing units. Temperate climate of the District provides excellent opportunities for commercial floriculture. Training and skill development course is required to develop the capacity of the farmers in horticulture and floriculture methods. Training focus should also be on developing market linkages with buyers.
Secondary	Food processing and agro based industry has huge potential for growth. Currently this sector is not well developed but there is good potential for developing and building market linkages with nearby cities like Dehradun, and Rishikesh. Wool processing units have potential and can be promoted in with cluster approach across the District through training on modernized techniques for wool processing. There is scope for skill development in farming practices for fruit crops and processing of raw wool into a final product
Tertiary	There is shortage of skilled manpower in tourism and hospitality sector. Existing ITI and Vocational training centers are not sufficient to meet the training demand of industries. Skill development would be required in soft skills for tourism and hospitality sector. Effort should be made in strengthening the existing educational institution and Government colleges.

8. Recommendations

Government	<ul style="list-style-type: none"> ▶ Promote training and skilling activities of wool and woolen based products in collaboration with National Institute of Design. ▶ Strengthen industry ties to encourage PPP's in skill development. ▶ Promote eco-tourism in the District by developing new tourist spots and marketing its existing tourist attractions. Further the Government can introduce new policies to attract big hospitality firms to set up hotels in these locations. Upgrade infrastructure like roads, transport, rest houses etc.
NSDC	<ul style="list-style-type: none"> ▶ NSDC can focus on promoting short term courses for farmers to encourage the introduction of mechanization and to help understand the use and maintenance of machinery in agriculture. ▶ Promote herb farming and facilitate trainings for related skills.
Industry	<ul style="list-style-type: none"> ▶ Industries can collaborate with the exiting training providers to develop course structure and curriculum. ▶ Major hospitality firms in the State and the country should be encouraged to set up properties to help promote the District as a tourist destination. This provides opportunities for introducing various skilling programs for cooks, waiters, house-keeping and other hotel/ restaurant management roles.

Vocational Training Providers	<ul style="list-style-type: none">▶ Training on new methods, techniques, and mechanization in farming. Encouraging value addition to herb cultivation.▶ Training on new methods, techniques, and mechanization in the hosiery and wool industry.▶ It is essential to incorporate a component of soft skill training like communication skills, personality development etc. in all courses.▶ Incorporate practical training as a substantial part of the existing curriculum of technical courses.▶ Skilling and up gradation of existing skills related to automobile repair and household electronic service can be provided.
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6.13 Uttarkashi



Source: Maps of India

1. Introduction

Uttarkashi District is spread over an area of 7,951 sq. km which forms approximately 15 percent of the total geographical area of the State. It is set on the banks of Bhagirathi River at an altitude of 1,158 meters. Most of the terrain is mountainous and dotted with high rising ridges, hills, and plateaus. Administratively, the District is divided into 6 subdivisions (Mori, Purola, Navgoan, Dhoonda, Chinyalisaud, and Bhatwandi), 6 blocks and 707 inhabited villages. The District lies high in the Himalayan range and houses the source of Ganga and Yamuna rivers that attracts thousands of Hindu pilgrims. Uttarkashi is surrounded by State of Himachal Pradesh in the north, Dehradun District in the West, Tehri Garhwal & Rudraprayag in South and Chamoli in the east.

Table 144: Administrative profile of Uttarkashi

Particulars	Uttarkashi	Uttarakhand	Source
Area (in Sq. Km)	7,951	53,483	http://www.census2011.co.in/census/state/districtlist/uttarakhand.html
Percentage share of State Geographical area	14.87%	100%	
Number of Community Development Blocks	6	95	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWPDistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Number of Gram Panchayats	295	7256	National Rural Drinking Water Programme, State Statistics 2012-2013 (http://indiawater.gov.in/IMISReports/NRDWPDistrictMain.aspx?IState=035&StName=UTTARAKHAND)
Total number of inhabited villages	707	16,793	http://www.censusindia.gov.in/2011-prov-results/paper2/data_files/uttarakhand/8-adminunit-60-61.pdf

2. Demography

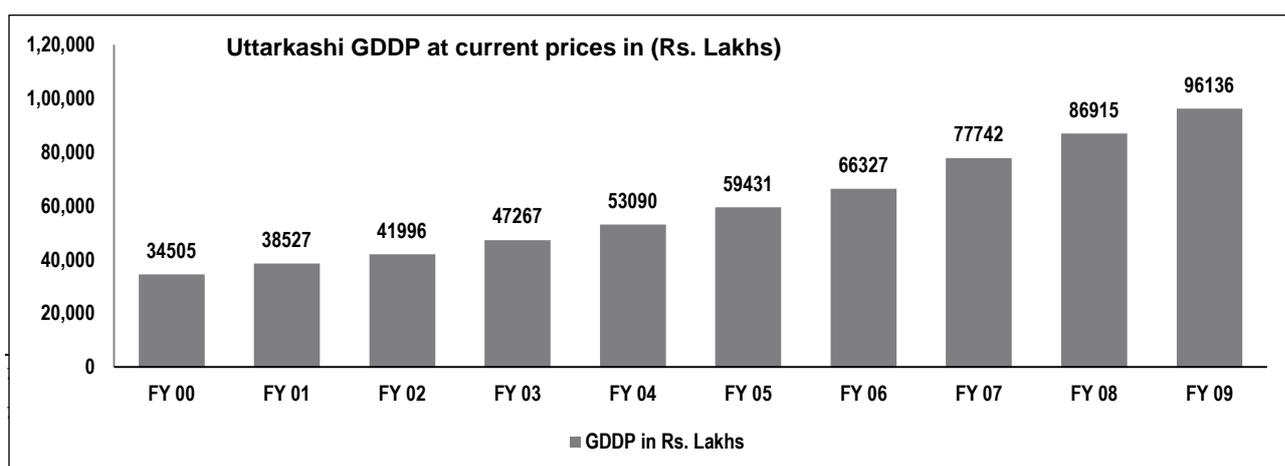
As per Census 2011 (provisional data), total population of Uttarkashi is 3.29 Lakh, constituting 3.25 percent of the State's total population. The urban population is 7.35 percent of the total population making Uttarkashi primarily a rural area. It ranks 9th (among total of 13 Districts in the State) in terms of sex ratio (959 females per 1,000 males). With population density of 41 people per sq. km, Uttarkashi is the least densely populated District in the State, much below the State's average of 189 persons per sq. km. This is owing to the fact that forests occupy bulk of the area.

Table 145: Socio economic indicators for Uttarkashi

Population	Uttarkashi	Uttarakhand	Source
Total population (in Lakh)	3.29	101.17	Census 2011(provisional data)
Total population (Male) (in Lakh)	1.68	51.54	Census 2011 (provisional data)
Total population (Female) (in Lakh)	1.61	49.63	Census 2011 (provisional data)
District share in State's population	3.26%	N.A	N.A
Density of population (per sq. km)	41	189	Census 2011 (provisional data)
Decadal growth of population	11.75%	19.17%	Census 2011 (provisional data)
Percentage of urban population	7.35%	30.55%	Census 2011 (provisional data)
Scheduled Caste population percentage of State population	22.90%	17.90%	Census 2001
Schedule Tribe population percentage of State population	1.05%	3%	Census 2001
Sex ratio	959	963	Census 2011 (provisional data)

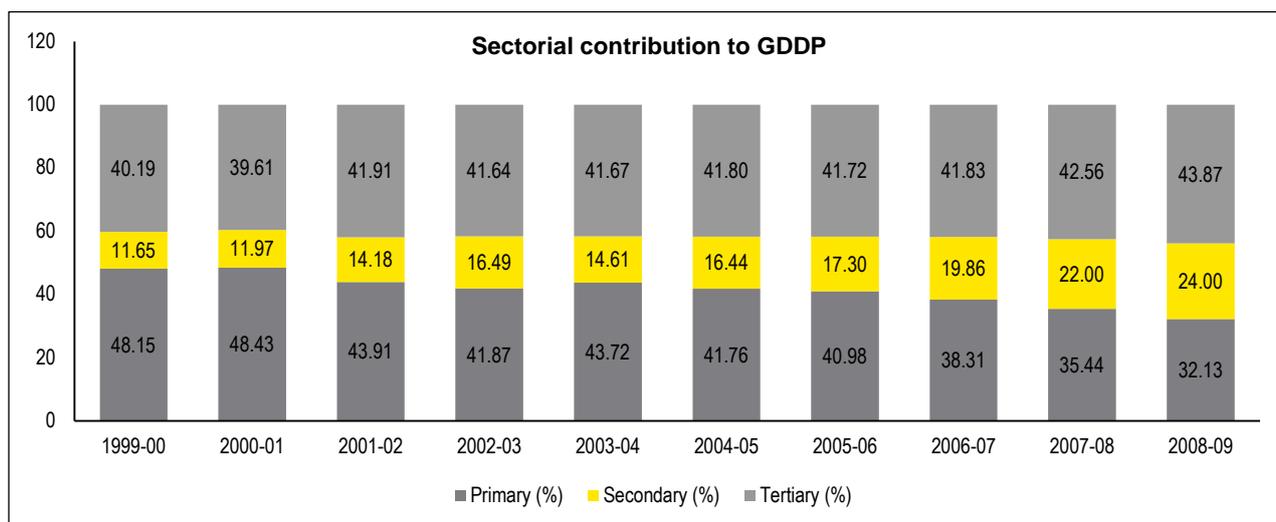
3. Economy

As per the data collected by the Directorate of Economics & Statistics (2008-09), Uttarkashi had a Gross District Domestic Product⁷⁸ of Rs. 96,136 Lakh which amounts to 2.39 percent of the total State GDP. The per capita income of Uttarkashi for 2008-09 was valued at Rs. 25,379, which is significantly lower than the State per capita income of Rs. 36,520⁷⁹.



Source: Planning Commission, Government of Uttarakhand

The contribution of various sectors to the District GDP has been 32.13 percent by the primary sector, 24 percent by the industry sector and 43.87 percent by the services sector.



Source: Planning Commission, Government of India

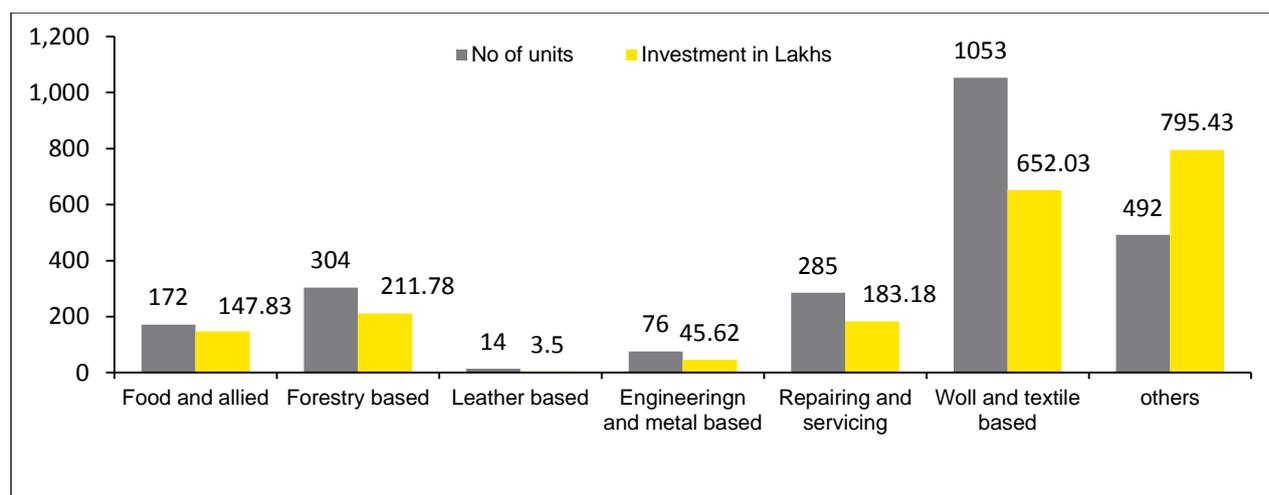
Primary Sector

As per Uttarakhand Agriculture Statistics Report 2009-10, almost 88.6 percent of the land in Uttarkashi District is covered with forest; only 3.38 percent of the total geographical area is available for cultivation. Rice, wheat, maize, and Millet are the primary crops. Main pulses grown in the District are rajma, black gram, gahat, and soya bean. Out of the total geographical area of 30,975 hectares, only 6,241 hectares is irrigated i.e. 20.15percent, whereas 79.85percent of the area is rain fed. The District economy is primarily dependent on agriculture and allied activities. As per the report 69 percent of the irrigated area has an average landholding of less than 1 hectare and 17 percent between 1-2 hectares highlighting small land holding within the District.

Secondary Sector

Industrialization in the District as compared to other Districts in the State's is very low. There is not a single large and medium enterprise; much of it can be attributed to difficult terrain and hilly topography. As per the District industrial center there are 2,349⁸⁰ (registered industrial units, with an estimated number of 4,685 daily workers employed in small scale industries. Till 2010-2011 the total investment by the industries stood at Rs 2,941.32 Lakh. Some of the prominent micro, small and artisan units are readymade garment and embroidery (610 units), wooden based units (189 units), agro-based processing units (102 units), woolen silk & artificial thread based clothes (45 units), handloom (29 units), and handicraft (26 units). An analysis of the total units against investment has been presented in the graph below:

⁸⁰ <http://dcmsme.gov.in/dips/DIPSR%20-%20Uttarkashi.pdf>. (Accessed on 10 January 2013)



Source: District Industrial Center, Uttarkashi

Tertiary Sector

The terrain produces some of the rarest views of beautiful landscapes which attract religious as well as adventure tourists. The District acquires importance because of two significant pilgrimage centers i.e., Gangotri, and Yamunotri. Apart from these, other places of attraction include Vishwanath temple, Shakti temple, Govind National Park, Gangnani, Maneri, Hari Ka Dun, Dayara Bugyal, and Harsil. Under the Virchand Singh Garhwali Programme, unemployed youth have received subsidy support for self-employment

4. Workforce Distribution

The total population of Uttarkashi in 2012 was 3.33 Lakhs which is expected to increase to 3.52 Lakhs by 2017 and 3.72 Lakhs by 2022. As per our research methodology, the incremental manpower supply will be about 0.83 Lakhs by 2022

Table 146: Estimated workforce distribution in Uttarkashi

Year	2012	2017	2022
Total population	3,33,370	3,52,416	3,72,551
Working age population	2,06,016	2,28,638	2,53,743
Labour force	1,26,498	1,63,475	2,09,843
Work force	1,23,525	1,59,097	2,04,912
Incremental Manpower supply		36,977	83,345

As per the table 112 below, incremental demand for human resource by 2022 for top five sector would be Education and Skill Development (0.098 Lakhs), Tourism, travel, hospitality & trade (0.035 Lakhs), Building, Construction & Real Estate Services (0.033 Lakhs), Food processing (0.032 Lakhs), Manufacturing (0.031 Lakhs). The total demand for semi-skilled and skilled manpower by 2017 would be 0.016 Lakhs, and 0.061 Lakhs. Similar demand for semi-skilled and skilled manpower by 2022 would be 0.028 Lakhs, and 0.088 Lakhs

Table 147: Incremental Human Resource Demand in Uttarkashi

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
Agriculture	252	88	25	13	88	25	13
Food processing	3,299	982	-	245	1,657	-	414
Metal and Mining	12	3	1	2	3	1	2
Manufacturing	3,101	690	261	388	908	344	511
Electricity, Gas and Water	648	195	88	-	252	113	-
Building, Construction & Real Estate Services	3,325	1,175	232	44	1,518	300	56
Auto & Auto Components	279	38	50	29	52	69	40
Tourism, travel, hospitality & trade	3,505	498	388	440	754	710	716
Transportation, logistics, warehousing & packaging	2,667	645	290	-	1,195	537	-
Postal and communication	150	-	18	50	-	22	60
Banking, Financial Services & Insurance	126	-	17	45	-	17	47
Real estate and Banking services	544	197	39	7	243	48	9
Public administration	863	88	282	46	95	303	50
Education & Skill Development	9,857	-	-	3,883	-	-	5,974
Healthcare	1,942	-	(114)	879	-	269	908
Other community services							

Sector	Total	Incremental demand: 2012-2017			Incremental demand 2017-2022		
		Minimally skilled	Semi-skilled	Skilled	Minimally skilled	Semi-skilled	Skilled
	320	45	60	45	51	68	51
Others	-	-	-	-	-	-	-
Total	30,891	4,645	1,637	6,115	6,816	2,826	8,851

During both the periods i.e. 2012 -17 and 2017 - 2022, there would be an excess supply of manpower in all the skill categories. Most of it will be in minimally skilled category and semi- skilled category. Surplus labor is expected to migrate to neighboring Districts and State for employment. Based on our stakeholder interaction, some possible areas of skill gap have been provided below:

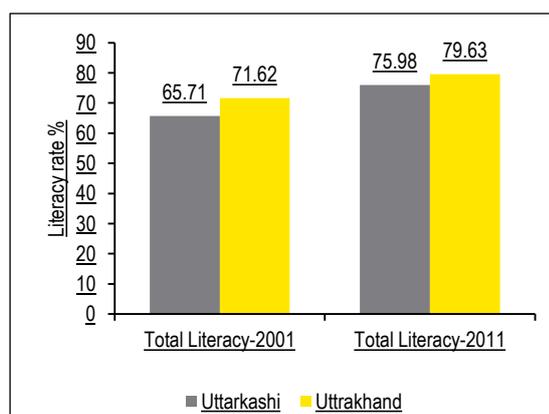
- ▶ Agriculture: Lack of capacity to develop fruit orchards; inadequate knowledge of modern farm practices; Wool production still carried on traditional means; lack of skill in wood craft, product design, and fineness.
- ▶ Tourism, travel, hospitality & trade: Need of skilled manpower as instructors for adventure sports; Inadequate trained manpower who can communicate; skilled nature interpreters; Waiters; Cooks; Front Office Boys.

Table 148: Incremental Demand-Supply Gap in Uttarkashi

Skill Category	2012-17	2017-22
Minimally skilled	(19,463)	(23,049)
Semi-skilled	(3,456)	(3,553)
Skilled	(1,660)	(1,273)
Total	(24,579)	(27,875)

5. State of education

The average literacy rate as per Census 2011 (provisional data) is 75.98 percent as compared to the State's literacy rate of 79.63 percent. Gender wise male and female literacy is 89.26 percent and 62.23 percent respectively. State level figures stood at 88.33 percent and 70.70 percent respectively, showing marginally more literate males in the District as compared to State average. The literacy level in urban area of the District is higher than the State average (89.12 percent as against 85.20 percent for State). However rural area of the District lags behind the State average figure (it is 74.90



Literacy Rates for Uttarkashi District

percent for State being 77.11 percent).

Table 149: School education infrastructure in Uttarkashi District

Type	Primary		Upper Primary	
	Number	Students	Number	Students
Government	764	29,291	316	16,222
Private	142	15,977	21	2,228
Total	906	45,268	337	18,450

In 2010-2011 the District had 5.48 percent of total number of schools of the State. In terms of the total school enrolment for the same year, the District stood at 10th rank in the State whereas the enrolment for ST and OBC in particular was higher (rank 7th and 5th respectively).

Table 150: Industrial Training infrastructure in Uttarkashi District

Type of Institute	Number of Institutes	Enrolment
Industrial Training Institutes	6	207
Polytechnic	1	483
Total	7	690

6. Youth Aspirations

The assessment team also held discussions with youth groups to understand their aspirations and preferred sectors of employment, wage expectations and willingness to migrate. Our key discussion points have been summarised below:

- ▶ The youth were keen in learning post-harvest and food processing technology.
- ▶ The youth shared that they would like to become adventure sports instructor, and nature guide
- ▶ The youth showed their eagerness to learn soft skills especially spoken English so that they can communicate with international tourists.
- ▶ Majority of them aspire to go for higher studies in the field of medicine, engineering, nursing, and defense and administrative jobs.

Discussion with college students and teachers highlighted that the current educational institutions are not in a position to deliver quality education and meet the demands for foreign tourism. There is an immediate need to develop soft skills for those employed in the hospitality sector. Person employed in front offices, travel agencies, restaurants, and hotels need training on communication skill to cater to foreign tourists.

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7. Development Potential and stakeholder perspective

Horticulture

Horticulture seems to have potential in the light of limited growth and development in agriculture related activities. Uttarkashi is located at an altitude of 1200 meters and is ideal for growing fruits like apples, oranges, pears, litchi's, plums and walnuts. Out of the 6 sub-divisions, Nawgaon sub-division is famous for its apples all over the country. It produces three varieties of apple i.e. Royal Delicious, Golden Delicious, and Red Delicious. The production of apple in the District has increased from 31,000 metric ton in 2009-2010 to 45,203 metric ton in 2010-2011. Even the cropped area for apple has increased from 7,509 hectares in 2009-2010 to 7,714 hectares in 2010-2011. Farmers in the District have showed great interest but lack necessary capacity and training to scale up apple orchards. With adequate training and technical inputs on apple farming, this sector has potential to generate large scale employment in the District

Uttarkashi has the highest the number of sheep in the State's. Sheep rearing for meat and wool products are the alternatives to traditional farming in the District. District industrial representative suggested that there is huge potential for developing wool based enterprise in the Dhunda. Traditionally sheep rearing is carried by the Bhotia community, a predominantly nomadic tribe in Uttarakhand. Currently, the sheep are sheared locally without using any carding and cleaning machine. The entire production is done manually with little mechanization. Upon discussion with local industry representatives it was highlighted that there is shortage of skilled labor force and use of appropriate technology. As a result the final products produced by the wool enterprise lack finesse and design and also highlighted the need improvement for better marketability and sale in the open market. In this regard the DIC had organized a skill based training programme in collaboration with National Institute of Design.

District Industrial Center has suggested setting up the following industries based on factor endowments such as abundance of forest, medicinal plants, large number of sheep's, and interest of the rural communities which includes development of medicinal based raw material collection and processing center in Bhatwadi and Navgaon; readymade garments and wool based products enterprise in Dhunda.

Forestry and allied sector

With the immense forest coverage in Uttarkashi, there is huge potential for the development of forest resources based industry, while taking due care to maintain the ecological balance and compliance with laws relating to forest conservation and environmental protection. Industries that can be promoted are wood carvings, furniture, and ply board, products from agro-waste, craft work from *ringal* (dwarf bamboo). In addition there is enormous scope to develop industries based on Non-Timber Forest Produce (NTFP), forest rasin and fiber. General Manager, DIC shared his concern over the current institutional arrangement for furniture based industry. Currently, it is banned to produce furniture based products directly in the District. Instead it is transported to Rishikesh and auctioned, and gets transported back to the District. This increases the cost of the product considerably and affects the buying behavior of consumers. Action should be taken to reverse the trade process to encourage furniture based artisan in the District. Possible skill development areas include in product design and development of market linkages.

Services and allied sector

"Veer Chand Garhwali Programme" has been a successful self-employment model for generating employment in the tourism sector. Tourism representative from the District suggested increasing the budget amount to increase its outreach and promote employment in the District. There is also a need to develop manpower and hold capacity development programmes.

Our interaction with the District Tourism Board representatives highlighted the need for following:

- ▶ Need for skilled manpower as instructors for various types of adventure sports. Currently, either they have to outsource skilled manpower from Himachal Pradesh;
- ▶ The District does not provide adequate infrastructure support for adventure sports like rock

climbing, river rafting, parasailing, and snow skiing

Also with the presence of Nehru Institute of Mountaineering in the District, there is huge potential for growth in adventure tourism.

Based on our interaction with various stakeholders, some key areas which provide skill development opportunity have been provided in the table below:

Table 151: Sectors and skill requirement

Sector	Skill Requirements
Primary	With limited scope in agriculture due to small land holdings, agro based and food processing industry has potential for growth. Relevant skills are required in horticulture development, and use of modern cultivation techniques to improve productivity.
Secondary	Wool based industry, food and agro- food processing industries has growth potential. Large sections of the population are involved in sheep breeding and production of wool. Wool industry needs to be developed in an integrated manner. Skill development on wool processing and designing of wool based products is required.
Tertiary	Religious and adventure tourism forms the main activity of the District economy. Improvement in adventure tourism infrastructure would give rise to demand for a number of services like sports instructors, hotels, restaurants, and transportation related services. Existing educational and ITI institutes needs to be strengthened keeping in view the need for skilled manpower to cater for tourism and hospitality related services.

8. Recommendations

Government	<ul style="list-style-type: none"> ▶ Promote tourism in the district by developing new tourist spots and marketing its existing tourist attractions. ▶ Upgraded ITI and Polytechnic infrastructure including course restructuring so that the youth can find employment in SIDCUL and neighboring State.
NSDC	<ul style="list-style-type: none"> ▶ NSDC can focus on promoting skilling of local artisans involved in hosiery, designing woolen garments, shawls, wooden craft so that the products can be sold in domestic as well as international market. ▶ Promote skilling on agro and food processing technology as the District has huge number of food processing micro and small enterprises.
Industry	<ul style="list-style-type: none"> ▶ Industries should explore possibilities of setting up food processing units as the District produces good variety of apples, oranges, pears, litchi's, plumps, and walnut. ▶ Forest resource based industries should set up institutional arrangements with the Forest Department to promote wood based craft.
Vocational Training Providers	<ul style="list-style-type: none"> ▶ VTC can provide the local farmer families, training on the latest techniques for growing fruits, flowers and vegetables and managing nurseries and orchard's. ▶ Provide training on computer skills especially Microsoft Office and basic hardware infrastructure awareness. ▶ Provide training on soft skills to cater to Domestic as well as International tourist. ▶ VTC can set up short term training courses to develop Para instructors for adventure sports. ▶ VTC can provide short term courses on BPO and KPO so that youth can find employment in the back office of IT companies.

1. Annexure I: List of Respondents

Almora

1. Mr. Chanar Ram, District Magistrate, Almora;
2. Mr. Shankar, Chief Development Officer, Almora;
3. Dr. K. K. Joshi, Chief Veterinary Officer, Almora;
4. Dr. Arya, Horticulture Department, Almora;
5. Dr. Abhay Saxena, Chief Agriculture Officer, Almora;
6. Ms. Latika Singh, Agriculture and Soil Conservation Officer, Almora;
7. Ms. Kavita Rani, General Manager, District Industries Centre
8. Mr. GS. Tilara, Industrial Training Institute, Almora.

Bageshwar

9. Mr. Roshan Lal, CDO, Bageshwar;
10. DR. Ila Panth, Officer, DSTO, Bageshwar;
11. Mr. Veer Singh, Assistant Engineer, DRDA, Bageshwar;
12. Mr. Rajendra Kumar Panth, District Employment Officer, Employment Office, Bageshwar;
13. Mr. Raveen Pant, LDM, State Bank of India, Bageshwar;
14. Mr. B.C Pathak, DIC, Bageshwar;

Chamoli

15. Mr. Mohinder Singh Tomar, CDO
16. Mr. Shikhar Saxena, General Manager, DIC
17. Mr. Kishore, LDM
18. Mr. Abhinav Nautiyal, District Agriculture Officer
19. Mr. Ramesh Tiwari, Manager, Mangalamaya Hotel

Champawat

20. Mr. Mohindar Singh Tomar, CDO Collector, Champawat;
21. Mr. Shikhar Saxena, General Manager DIC, Champawat;
22. Mr. Kishore, LDM, State Bank of India, Champawat;
23. Mr. Abhinav Nautiyal, DAO, Agriculture Office, Champawat;

Dehradun

24. Mr. R.S. Tolia, ex-Chief Secretary Uttarakhand
25. Mr. Om Prakash Gupta, Principal Secretary, Agriculture & Horticulture, Dehradun
26. Mr. S.S. Sandhu, Principal Secretary, Tourism & Energy, Dehradun;
27. Mr. Shailesh Bagauli, Additional Secretary Technical Education, Dehradun
28. Mr. Purshottam Kumar, District Magistrate, Dehradun;
29. Mr. A. K. Tripathi, Principal ITI Niranjanpur, Dehradun;
30. Mr. Y. S. Pantgi, Director, Directorate of Economics and Statistics, Dehradun;
31. Mr. Arun Kumar Daundiya, CEO, Animal Husbandry Board, Dehradun;
32. Mr. D.S. Bagri, GMDIC, Dehradun;
33. Mr. Brijesh Kumar, Statistician, Directorate of Economics and Statistics, Dehradun;
34. Mr. Pankaj Sharma, Supervisor- MIS, Directorate of School Education, Dehradun;
35. Mr. Pankaj Nathani, Joint Director, Directorate of Economics and Statistics, Dehradun;
36. Mr. Kolatri, Assistant Labor Commissioner, Labor Department, Dehradun;
37. Mr. Ramesh Patwal, Director, IL&FS Skills School, Dehradun;
38. Mr. Pawan, CCF-IFAD Project, Dehradun;
39. Mr. D.C. Gupta, Principal, Government Polytechnic, Dehradun;
40. Mr. Binita Shah, Organic Commodity Board, Dehradun;

41. Mr. Rakesh Jain, Director, CMI Hospital, Dehradun;
42. Mr. Lepcha, PCCF Forest Conservation, Dehradun;
43. Mr. Anil Taneja, Director PHD Chambers, Dehradun;
44. Dr. Kamal, Livestock Board, Dehradun;
45. Mr. Bhaskar Pant, NABARD, Dehradun;
46. Mr. K.N. Sharma, Company Secretary, Garhwal Mandal Vikas Nigam Ltd., Dehradun;
47. Mr. Anil Joshi, HEFCO, Dehradun;

Haridwar

48. Mr. Sachin Kurle, District Magistrate, Haridwar;
49. Mr. J.P. Tiwari, Chief Agriculture Officer, Haridwar;
50. Mr. Harendar Garg, Managing Director/ Chairman Haridwar Industries Association, Cello Houseware, Haridwar;
51. Mr. Hemant Tiwari, AGM, NABARD, Haridwar;
52. Mr. M. S. Sajjwan, Principal ITI, Jagjitpur, Haridwar;
53. Mr. K.C. Joshi, Project Director DRDA, Haridwar;
54. Ms. Kaushalya Bandhu, GMDIC, Haridwar;
55. Mr. R.K. Asthana, DSTO, Statistics Department, Haridwar;
56. Mr. Uttam Kumar, Employment Officer, Employment Exchange, Haridwar;

Nainital

57. Mr. Anand Bardhan, District Magistrate, Nainital
58. Mr. P.K. Srivastava, HMT Watches, Nainital;
59. Mr. Choudhary, NABARD, Nainital;
60. Mr. Wadhawan, General Manager, Manu Maharani Hotel, Nainital;
61. Mr. Akshay Chaudhary, DRDA, Nainital;

Pauri Garhwal

62. Ms. Ravneet Cheema, Associate District Magistrate(ADM), Pauri Garhwal;
63. Mr. Mukesh Riyal, Employment Exchange Officer, District Employment Exchange, Pauri Garhwal;
64. Mr. Negi, DDM, NABARD, Pauri Garhwal;
65. Mr. Bhandari, District Information Officer, Pauri Garhwal;
66. Mr. Dipendra, Chief Development Officer, Pauri Garhwal;
67. Ms. Chitra Singh, District Statistical Officer, Directorate of Economics and Statistics, Pauri Garhwal;
68. Mr. Joshi, General Manager, District Industries Centre, Pauri Garhwal;
69. Mr. Bharat Dutt, Manager Operations, WIPRO, Pauri Garhwal;

Pithoragarh

70. Mr. B.L Rana, ADM Collector, Pithoragarh;
71. Mr. Naresh Kumar, Project Director, DSTO, Pithoragarh;
72. Md. Nazim, DRDA, Pithoragarh;
73. Mr. Lalit Mohan Shah, Officer DIC, Pithoragarh;
74. Mr. Vikas Bhatt, LDM, State Bank of India, Pithoragarh;
75. Mr. D. Kumar, DAO, Pithoragarh;

Rudraprayag

76. Mr. Navneet Pandey, ADM Collector, Rudraprayag;
77. Mr. Anupam Drivedi, District Economic & Statistical officer, DSTO,DIC, Rudraprayag;
78. Mr. Kapil Pandey, District Employment officer, Employment Office, Rudraprayag;

79. Ms. Tamta, LDM, State Bank of India, Rudraprayag;
80. Mr. Negi, DRDA, Rudraprayag;

Tehri Garhwal

81. Mr. R. S. Rawat, District Development Officer, Tehri Garhwal;
82. Mr. R.S. Negi, PA to DDO, Tehri Garhwal;
83. Mr. Neeraj Gupta, District Welfare Officer, Tehri Garhwal;
84. Mr. A. K. Singh, School Principal, Tehri Garhwal;
85. Ms. Manju Kaushik, Principal Girls Inter College, Tehri Garhwal;
86. Mr. P.C. Uniyal, Principal ITI , Tehri Garhwal;
87. Mr. Jaspal Chouhan, Tourism Officer, Tehri Garhwal;
88. Mr. Mritunjay Singh, GMDIC, Tehri Garhwal;
89. Ms. Mamta Negi, Employment Officer, Employment Exchange, Tehri Garhwal;
90. Mr. Manish Ran, DSTO, Statistics Department, Tehri Garhwal;

Uttarkashi

91. Dr. Rajesh Kumar, District Magistrate, Uttarkashi;
92. Mr. Prakash Rawat, District Development Officer, Uttarkashi;
93. Mr. B. P. Uniyal, Upper District Agriculture Officer, Uttarkashi;
94. Mr. N. Bahuguna, Assistant Agriculture Officer, Uttarkashi;
95. Mr. B.S. Rawat, Accountant, DRDA, Uttarkashi;
96. Mr. S. C. Garg, Assistant General Manager, NABARD, Uttarkashi;
97. Mr. Dinesh Kumar, Chief Agriculture Officer, Uttarkashi;
98. Mr. B. K. Pokhriyal, Mukhay Sahayak, Tourism Department, Uttarkashi;
99. Mr. Amit Kumar, Fisheries Inspector, Uttarkashi;
100. Mr. R. N. Naitiyal, Fisheries Inspector, Uttarkashi;
101. Mr. G.M. Bahuguna, Assistant Manager DIC, Uttarkashi;
102. Mr. Bhanu Prakash Dangwal, Employment Exchange, Uttarkashi;
103. Mr. M.S. Sajwan, GMDIC, Uttarkashi;

Udham Singh Nagar

104. Mr. D.S. Garbyal, Chief Development Officer, Udham Singh Nagar;
105. Ms. Anubha Jain, Employment Exchange Officer, Employment Exchange, Udham Singh Nagar;
106. Mr. P.R. Arya, General Manager, District Industries Centre, Udham Singh Nagar;
107. Mr. H.R. Nautiyal, General Manager, SIDCUL, Udham Singh Nagar;
108. Mr. Darbara Singh, President KGCCI, Udham Singh Nagar;
109. Mr. P.K. Singh, Chief Agriculture Officer, District Agriculture Department, Udham Singh Nagar;
110. Mr. Anwar Ali, Head of Department (Fitter), Industrial Training Institute Dinseshpur, Udham Singh Nagar;

2. Annexure II – Details of Institutions where focused group discussions were carried out.

Location	Name of Institute	Group	Number of students
Rudraprayag	Swaraaj Inter College- Rudraprayag	12th Grade: Girls and Boys	5
		11th Grade: Boys	26
Champawat	Rajkiya Balika Inter college Champawat.	12th Grade: Girls	30
Pithoragarh	Lakshman Singh Rajkiya Inter College Pithoragarh	12th Grade: Girls	22
Bageshwar	Victor mohan joshi smarak rajkiya inter college bageshwar.	11th Grade: Boys	10
		12th Grade: Boys	12
Chamoli	Government Inter College	12th Grade: Boys	10
Udham Singh Nagar	ITI - Dineshpur	2nd Year: Electricians Course, Boys	8
Pauri Garhwal	Pauri-Boys Government School	12th Grade: Boys	20
Dehradun	Government Polytechnic, Nainital	2nd Year: Electronics Engineering	11
Uttarkashi	Uttarkashi Polytechnic	Electronics and Pharmaceuticals Students: Boys and Girls	15
	Kirti Inter College Boys School	12th Class Science: Boys	10
Haridwar	Government ITI	Fitter, Electrician, Turner: Girls and Boys	21
Tehri Garhwal	Government ITI, New	Fitter, Turner and	12

Location	Name of Institute	Group	Number of students
	Tehri	Electrician Courses: Boys	
	Government Inter College, New Tehri	2nd Year: Girls Group	10
Almora	ITI-Almora	Welder and Fitter Course Boys	8

3. Annexure III : HR requirements (demand) for each Districts and sectors – 2012

Sector	Uttarkashi	Chamoli	Rudrapur	Tehri Garhwal	Dehradun	Pauri Garhwal (Garhwal)	Pithoragarh	Bageshwar	Almora	Champawat	Nainital	Haridwar	Udham Singh Nagar	Total
Agriculture	118,222	125,149	81,670	198,495	153,553	194,590	143,399	98,422	219,938	74,224	180,591	254,042	298,417	2,140,711
Tourism, travel, hospitality and trade	3,435	5,899	4,043	13,516	77,276	15,163	9,093	3,693	10,745	5,237	36,103	66,106	50,332	300,642
Construction materials building hardware	4,237	7,181	2,698	9,210	50,111	10,044	10,507	5,790	7,007	3,637	25,421	90,621	60,219	286,683
Building, construction & Real Estate Services	4,977	8,844	5,112	21,196	49,291	12,118	10,145	4,832	11,584	3,997	19,281	38,140	24,117	213,632
Education & Skill Development	7,209	10,306	5,218	13,438	38,541	17,676	13,241	4,160	13,884	2,820	19,404	30,158	16,747	192,803
Public administration	5,402	5,569	1,593	5,775	35,243	8,424	5,166	2,549	7,640	1,912	16,430	12,644	18,085	126,431
Healthcare	1,420	1,597	991	2,085	37,841	2,628	1,700	588	2,497	1,112	5,509	12,940	6,071	76,978
Transportation, Logistics, warehousing &	1,099	2,307	1,380	4,013	12,509	2,136	2,573	1,404	2,638	2,782	13,618	14,729	11,395	72,582

Sector	Uttarkashi	Chamoli	Rudrapur	Tehri Garhwal	Dehradun	Pauri Garhwal (Garhwal)	Pithoragarh	Bageshwar	Almora	Champawat	Nainital	Haridwar	Udham Singh Nagar	Total
packaging														
Food processing	1,782	1,793	1,611	539	2,500	1,088	5,274	325	7,986	3,045	13,793	17,539	15,138	72,413
Real estate and Banking services	1,041	1,053	649	1,633	17,432	1,912	1,769	548	2,606	652	3,946	29,005	9,837	72,082
Unorganized sector	1,162	3,001	838	1,903	17,370	2,365	962	358	2,948	827	3,671	12,842	6,083	54,333
Postal and communication	350	855	354	1,964	16,380	3,860	1,215	529	2,027	802	3,288	7,005	8,862	47,491
Banking, Financial Services & Insurance	1,318	1,452	807	1,669	11,491	2,864	1,478	606	1,809	504	5,757	8,607	5,968	44,331
Metal and Mining	85	426	219	567	15,661	155	584	796	679	426	18,353	999	817	39,767
Automobile/auto components	308	311	250	275	13,868	1,259	389	314	484	245	5,685	5,121	7,840	36,348
Electricity, Gas and Water	982	4,357	330	2,170	7,464	2,442	1,832	470	1,533	678	2,878	2,924	1,890	29,950

4. Annexure IV : HR requirements (demand) for each Districts and sectors - 2017

Sector	Uttarkashi	Chamoli	Rudraprayag	T. Garhwal	Dehradun	P Garhwal	Pithoragarh	Bageshwar	Almora	Champawat	Nainital	Haridwar	Udham Singh Nagar
Agriculture	118,474	137,502	89,664	217,778	153,659	276,557	147,649	108,047	240,989	74,658	240,353	335,722	298,787
Construction materials building hardware	7,338	10,542	4,832	16,981	114,391	18,808	17,916	8,630	10,757	5,364	54,203	238,229	187,651
Tourism, travel, hospitality and trade	6,940	11,344	8,155	30,495	196,849	39,059	23,401	7,116	20,709	9,079	92,008	164,137	80,152
Education & Skill Development	17,066	24,416	12,347	31,803	91,242	41,852	31,332	9,848	32,865	6,673	45,944	71,405	39,644
Building, construction & Real Estate Services	8,301	14,750	8,520	35,359	82,246	20,214	16,922	8,054	19,315	6,669	32,151	63,663	40,216
Transportation, Logistics, warehousing & packaging	3,765	7,680	4,158	13,438	37,157	7,025	8,657	4,678	8,467	9,414	38,161	37,906	34,481
Food processing	5,081	5,190	4,625	1,553	7,188	3,136	15,279	961	23,023	8,728	39,739	33,420	43,619

Sector	Uttarkashi	Chamoli	Rudraprayag	T. Garhwal	Dehradun	P Garhwal	Pithoragarh	Bageshwar	Almora	Champawat	Nainital	Haridwar	Udham Singh Nagar
Healthcare	3,363	2,650	2,344	4,933	89,586	6,222	4,023	975	4,142	1,420	13,044	30,638	14,371
Public administration	6,265	6,461	1,846	6,699	40,883	9,771	5,993	2,959	8,864	2,221	19,060	14,671	20,970
Real estate and Banking services	1,584	1,430	988	2,487	26,539	2,911	2,693	743	3,537	887	6,007	44,158	14,976
Auto & Auto Components	587	900	386	524	39,871	1,947	594	929	921	704	10,833	14,755	22,589
Unorganised sector	1,482	3,826	1,070	2,429	22,160	3,016	1,228	457	3,762	1,057	4,684	16,385	7,761
Postal and communication	500	1,225	507	2,818	23,539	5,544	1,745	762	3,654	1,146	4,723	10,051	12,714
Banking, Financial Services & Insurance	1,444	1,592	884	1,828	12,575	4,394	1,616	662	2,775	550	8,832	13,203	9,154
Metal and Mining	97	496	219	662	22,401	263	994	928	679	426	28,079	1,463	840
Electricity, Gas and Water	1,630	5,603	425	3,602	9,597	3,141	2,357	515	1,682	744	3,702	3,760	3,139

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