

EXECUTIVE SUMMARY

COMPREHENSIVE STUDY ON AVAILABLE SKILL, SKILL GAP AND SKILL DEVELOPMENT POTENTIALS IN SIKKIM

I. INTRODUCTION

Employability of the growing young population is an important factor in the economic development of India and enhancing skill will lead to faster employment generation in the country. This report has been prepared by North Eastern Development Finance Corporation Ltd. (NEDFi) to study the overall skill development scenario in the state of Sikkim. The study aims to understand the characteristics of Skill Development System operational in the state, Traditional Skills of Sikkim, Aspiration and Skill Development needs of various categories of students, person engaged in vocations and unemployed persons in the state of Sikkim and the global, national and local skill requirement trends. Based on the understanding of these aspects, the study recommends strategies for accelerating the development in the skill scenario.

With a population of 6.1 Lakh which is about 0.05% of the total population of India, Sikkim is the least populous state in India and second smallest state with an area of 7096 Sq. Kms. The population of Sikkim consists of three ethnic groups, and they are Lepcha, Bhutia and Nepali. The state has a population density of 86 persons per Sq. km, which is comparatively lower than the national average of 382 persons per Sq. km. The state is divided into four districts of North, South, East and West Sikkim.

The study was initiated after consultation with National Skill Development Agency (NSDA) and Ministry of DoNER and their views, opinion and suggestions have been given due importance. The overall approach toward the study is a combination of extensive consultation with major stakeholders in the state, review of literatures on skill development, secondary data collection from various sources and extensive primary survey. As a part of secondary research, reports and articles on skill development and related areas published by the government as well as The World Bank, Asian Development Bank, International Labour Organization etc. were reviewed.

An important aspect of the study is the primary data collection and its analysis related to aspiration and skill development needs of the people involved in the skill sector. In this connection, extensive primary survey was conducted throughout all 31 blocks spread across four districts of the state. Approx. 5000 samples among four strata viz, general students, vocational students, persons engaged in vocation and unemployed persons were collected during the survey. In-depth consultation with various stakeholders, detailed interaction with all the major vocational institutions in the state including livelihood schools, senior secondary schools imparting vocational education, nodal and key government departments responsible for skill development in the state and few industries were carried out. Focus group discussions with interest groups such as teacher/trainers of vocational institutes, parents of students, were also organized. Detailed interaction with senior government officials of the state were carried out

for an insight in declared policy priorities.

II. EDUCATION AND EMPLOYMENT CHARACTERISTICS OF SIKKIM

Education is the foundation and employment (both wage and self employment) is the ultimate desired outcome of skill development. So an attempt has been made here to understand the characteristics of educational system of Sikkim in terms of Literacy Rate, Gross Enrolment Ratio (GER) at various Educational levels, School Drop-out and Retention at Primary Levels, Transition Rate and Quality of Elementary Education. Similarly, understanding of the employment characteristics of Sikkim has been developed on parameters like Labour Force Participation Rate (LFPR) and Work Population Ratio of the state along with some ideas about the total workers (main + marginal) and non workers in the state of Sikkim.

Literacy Rate: As per 2011 census the literacy rate of Sikkim is 81.42% which is higher than the country's literacy rate of 74.04%. The growth of literacy has been impressive in Sikkim in the past few decades, improving from just 57% in 1991 to 81.42% in 2011.

Gross Enrolment Ratio (GER): The Gross Enrolment Ratio (GER) of Sikkim at different schools and higher education levels is higher than that of India. At upper primary level and secondary level this value is considerably higher than the national average.

Quality of Elementary Education: The dropout rate at various school stages is reducing and the quality of elementary education is improving gradually. Annual Status of Education Report 2014 has shown that Sikkim is faring better than all India average on most of the parameters on which the quality of elementary education is normally judged. The quality of learning both in case of English and Arithmetic in Sikkim was found much better than Indian average.

Transition rate: Transition rate at various school stages such as from primary to upper primary level, elementary to secondary level and secondary to higher secondary level has shown substantial improvement in the last few years.

Labour Force Participation Rate: The Labour Force Participation Rate in Sikkim is 74.20% which is more than the average Indian Labour Force Participation Rate of 53.90%. As per 68th round of NSS report all other key indicators of labour force participation in economy such as female labour force participation rate, total unemployment rate, youth unemployment rate in rural and urban areas and female unemployment rate is better than the national average.

Worker Population Ratio: The Worker Population Ratio for Sikkim is 73.30% which is more than the national average of 52.30%. In Sikkim, total workers (main + marginal) accounts for 50.46% of the population. As per 2011 census total working population is 308138, out of which 230397 were main workers and 77741 were marginal workers. Out of total 308138 workers, 243785 are settled at rural area and 64353 are settled at urban area, 194358 are male workers and 113780 are female workers. Worker Population Ratio (WPR), which shows the employment of the 15+ population, is also higher for Sikkim, due to considerably higher WPR for women. WPR for rural areas is higher in the state, but the urban WPR is comparable to the national average.

III. CHARACTERISTICS OF SKILL DEVELOPMENT SYSTEM OF SIKKIM

The existing skill development system of Sikkim mirrors the prevailing system in practice in other parts of the country except the unique concept of Livelihood Schools running under State Institute of Capacity Building, Government of Sikkim. The TVET system, traditional skill sectors, initiatives taken by central and state government and its implementation status along with financial resources available to the nodal departments engaged in skill development are discussed here.

a. Technical and Vocational Education and Training (TVET) System of Sikkim

The TVET system of Sikkim mainly depends on the vocational education and training provided by Industrial Training Institutes (ITIs), Polytechnics, Livelihood Schools under State Institute of Capacity Building, and Senior Secondary Schools providing vocational education. Characteristics of all these institutions are discussed in subsequent sections.

Industrial Training Institutes (ITI): The 3 nos. of Industrial Training Institutes (ITI) in the state, located at Rangpo, Gyalshing and Namchi are under Labour Department, Government of Sikkim. At present the enrolment in all the three ITIs put together stands at 342 against the combined enrolment capacity of 416 which shows that even the small enrolment capacity in the ITIs has not been met. The trades in demand are Electrician, Fitter, Welder, Mechanic (Motor Vehicle) Wireman, Draftsman (civil), Surveyor, Computer Operator and Programming Assistant (COPA), Information & Communication Technology System Maintenance (ICTSM) and Basic Cosmetology. The trades which are in lesser demand are Craftsman and Food Production, Mason Building Construction, Interior Decorator and Designing, Stenography (English), Secretarial Practice, Desktop Publishing Operator and Plumber. The existing infrastructures of the ITIs are good and during interaction with the students, it was found that most of the students are satisfied and optimistic about the utility of the course. Very few students are found interested in self-employment. Also, most of the students are willing to move outside the state for better opportunities if salary is good (approximately Rs. 10,000 per month). Out of a total number of 64 staff in the ITIs, 56 instructors are on ad-hoc basis. The training and capacity building aspect of these instructors also needs to be given due importance.

Polytechnics: Advanced Technical Training Centre (ATTC) located at Bardang in East Sikkim and Centre for Computers and Communication Technology (CCCT), located at Chisopani in South Sikkim are the only two polytechnics of the state which were established under the World Bank funded 'Third Technician Education Project' of the Government of India. As per records actual enrolment in these institutes for the year 2014 were 239 though the combined enrolment capacity of both polytechnics is 405 and most of the students are from outside Sikkim. Enrolment data of the last 5 years of both the polytechnics shows a decreasing trend. Though both these polytechnics are under Human Resource Development Department, Government of Sikkim, the financial resources required for running these institutes are mainly generated from the fee charged

from the students and this makes the fee structure in both the polytechnics comparatively high. Both the polytechnics are running community college schemes and under this scheme ATTC is running courses in Retail Management and Automobile Engineering and CCCT is running courses in Tourism and Construction. During interaction with the students of both the Polytechnics, it was found that while students from Sikkim preferred conventional engineering trades, such as Civil Engineering, Mechanical Engineering, and Electrical Engineering, students from other states preferred courses in Computer Engineering, Tool and Die Making, Manufacturing Technology, Mechatronics and Electrical & Electronics Engineering.

The placement at ATTC is impressive and multinational companies like Maruti Suzuki India Ltd., Harley Davidson India, Hitachi Automotive System (India), Renault Nissan Automobile India Pvt. Ltd., Macleods Pharmaceuticals, Hyundai Motors, Tata Consultancy Services, etc. have recruited total 127 students from the institute in the year 2014.

Livelihood Schools: One of the unique characteristics of Technical and Vocational Education and Training (TVET) System in Sikkim is the presence of 41 Livelihood Schools under State Institute of Capacity Building spread across Sikkim. The aim of livelihood schools under SICB is to develop capacity among the unemployed and enable them to sustain themselves economically. Livelihood schools are currently providing training in 19 different trades, the course duration of which ranges from 3 months to 12 months depending upon the trade. Presently total enrolment of students in 41 Livelihood Schools is 1500 out of which 596 are male and 904 are female. From the year 2012-13 onwards the enrolment trend of these Livelihood Schools is showing a decline. These schools are mobile in nature and after completing training of students in one area in any particular trade it shifts to another area where there is demand for training in that trade. SICB conducts training at these 41 Livelihood Schools through private training partners. Trainees of Livelihood School are provided a monthly stipend of Rs. 2500 during duration of the course which is a major motivation for unemployed youth of financially weaker section of the society. Most of the students are found satisfied with the quality of training provided in these Livelihood Schools. Inclination of the students towards employment is more than self-employment for which they are willing to migrate to other places. Statistics of the last 3 years shows that there is high self-employment potential in trades like Agriculture and Horticulture, Animal Husbandry, Driving, Cutting and Tailoring while employment potential is more in trades like Hospitality & Tourism, Computer Software, Beautician and Spa, Security Guard, Retail Management and Food and Beverages. Placement and Self-employment in trades such as Construction, Electrical and Power Electronics and Automobile Repairing is found less when compared to the above stated trades. Livelihood Schools have also recently started the re-skilling of existing workforce of the power department of state government in electrician trade.

Vocational Education in Senior Secondary School: Currently, vocational education is being offered in 52 senior secondary schools and its operation has

been outsourced to SIBIN Group, a private service provider. Currently only 3 vocational streams, namely Information Technology, Retail and Tourism are being offered, and during visits it was found that, only 2 out of the 3 streams available are being taught. From the primary survey conducted among the students it was found that most of the students are interested in pursuing higher education after completion of senior secondary level but that is a constraint due to the limited number of seats available in institutions providing higher education in related streams. Moreover, schools are not properly equipped for providing specialized vocational education as it will need major investment in workshops, laboratories, equipment etc. along with advanced teaching aids and tools. Though there are many streams of vocations which can be useful for the students, increasing the number of vocational streams in these schools is not a feasible option as the school authorities are struggling to manage the one or two streams that are currently being offered. In view of these limitations, the schools may establish strong apprenticeship training tie up with prospective employers that will not only provide on the job training which is very important but also give the students an opportunity to be absorbed as employees with those employers.

b. Traditional Skills of Sikkim

The traditional skill sectors of Sikkim mainly include skill related to handloom and handicraft products of the State such as Thangka Painting, Carpet Weaving, Wood Carving, Handloom Weaving, Mask Making, Cane and Bamboo Crafts, Lepcha Hat Making and Hand Made Paper unit etc. The products are of high quality and enjoy huge demand, both nationally and internationally. There is a proper institutional mechanism for the promotion of these traditional skills in the form of a separate Directorate of Handicrafts & Handloom (DHH) under Government of Sikkim. The DHH with its main training centre at Gangtok has an impressive growth rate with 32 branch training centres, 680 trainees, 13 production units with approximately 270 paid workers and 260 personnel including officers and support staff.

The courses are of sufficiently long duration and each course is conducted by separate master trainers who are alumni of the same training centre. From discussions with the trainers it was known that, most of the students who complete such training are sufficiently skilled to undertake a profession by virtue of either self-employment or employment in their related trades. Many of them are absorbed in Sikkim Handloom and Handicraft Corporation under DHH as daily waged worker whereas a significant number of trainees opt for self-employment and open their own units. Some become either part of self-help groups/co-operative societies or form their own self-help group. So the range of engagement opportunity for person trained in traditional skill sectors by DHH is fairly broad and most of them are able to have decent livelihood options after completion of the course.

It may be mentioned here that most of the trainees of the centres are either uneducated or have minimal educational qualification. Age is also not a bar for joining the training courses provided by the centre. Many of the trainees also start

earning while still learning at the centre by making products related to their trade for either Sikkim Handloom and Handicraft Development Corporation or some other vendors. Most of the trainees interviewed during the primary survey expressed their satisfaction with the quality of training imparted. They are oriented towards self-employment and many of them are looking for some financial assistance to start their own ventures.

Self-Help Groups form a major part of the skilled people in Traditional Skill Sector. As a part of the study, Focus Group discussions (FGD) with around 26 nos. of SHG groups were conducted. During the discussion, it was found that the major hurdles faced by these SHGs are insufficient market linkages, sales, distribution and financial support available to them.

c. Initiatives of the Central Government & State Government for Skills Development in Sikkim

Currently, apart from the nodal Ministry in Skill Development & Entrepreneurship, the skill development efforts of Central Government are spread across 19 separate Central Ministries. In the state of Sikkim most of these ministries have a presence with their schemes and programmes and implementation status of these are discussed in the subsequent sections.

Under the initiatives of Ministry of Agriculture there are 17 Farmers Schools and one State Agriculture Management and Extension Training Institute (SAMETI) which organize training on organic farming. Indian Council of Agricultural Research (ICAR) has one National Research Centre on orchids and 4 numbers of Krishi Vigyan Kendra. There is also a College of Agricultural Engineering & Post-Harvest Technology. Horticulture Mission for North East and Himalayan States has achieved significant progress in the state with an area expansion of 2477.82 hectare, organic farming in 9750.00 hectare and 4 numbers of nursery. Training on cane and bamboo was imparted to 60 numbers of youths in the FY 2012-13 under National Bamboo Mission. National Livestock Mission which was launched in the year 2014-15, has a sub mission under it for skill development and in FY 2014-15, an amount of Rs. 51.03 Lakhs has been released to Sikkim under this Mission.

Under Ministry of Micro Small and Medium Enterprise, there is a MSME-Development Institute in Gangtok, under which human resource is developed to build entrepreneurial and managerial skills under Entrepreneurship Development Programme, Entrepreneurship and Skill Development Programme and Management Development Programme. According to data available at National MSME Trainee Database, as on 07-04-2015, total number of available skilled manpower trained under MSME training institutes is 2631 and trades on which training offered are 28.

Under Ministry of Rural Development, Deen Dayal Upadhaya Grameen Kaushalya Yojana (erstwhile Ajeevika scheme) is implemented in the state via State Rural Development Agency (SRDA). SRDA is targeting to cover 8000 beneficiaries from all 4 districts as approved by Ministry of Rural Development, Government of India in October 2013. Locations have been identified to impart skill development training on Computer, Personality Development and House

Keeping. There is one Rural Self Employment Training Institute (RSETI) under State Bank of India as lead bank which has received Rs. 50 Lakhs grant from Ministry of Rural Development in FY 2012-13. Till FY 2013-14, 1098 trainees have received training in various Entrepreneurship Development Programme.

Under *Ministry of Tourism* there is an Institute of Hotel Management (IHM-Rumtek) which offers degree (B.Sc.) in Hotel and Hospitality Administration, two diploma level courses in Food Production/Food & Beverage Services and Front Office and Housekeeping. Under, “Hunar Se Rozgar Tak” programme of the ministry there are 4 courses of duration within 6 weeks to 8 weeks in -Food Production, Food & Beverage Service, Housekeeping Utility, and Bakery & Patisserie and a total number of 532 trainees received training during 2010 to 2014. During the period FY 2010-2011 to 2014-15, Rs. 71.52 Lakh has been sanctioned to IHM-Rumtek for “Hunar Se Rozgar Tak” scheme under Capacity Building for Service Providers. The institute also conducted training in Home Stay for Tourism Department in 2013-14 under which 354 trainees were trained.

Under *Ministry of Human Resource Development*, Community College Scheme and Vocationalization of Higher Secondary Education Scheme are being implemented. Community College scheme is implemented in both the polytechnics of Sikkim (ATTC and CCCT) and Vocational subjects of IT, Tourism and Retail have been introduced in 52 senior secondary schools of the state under Vocationalization of Secondary Education Scheme.

The flagship training scheme of *Ministry of Labour and Employment* such as Craftsmen Training Scheme (CTS), Apprenticeship Training Scheme (ATS) and Skill Development Initiative Scheme for Modular Employability Skills (MES) are being implemented in Sikkim. CTS scheme is implemented in 3 ITIs of the state, where 19 trades are being offered to the students. In FY 2012- 13 the no. of trainees in private and government organization under ATS were 18. The SDI-MES Scheme is being implemented through 9 registered private Vocational Training Providers and 3 ITIs. However, only 4 VTPs were found currently active in the state with an enrolment of 1365 trainees and total fund of Rs. 81.02 Lakh.

Ministry of Housing and Urban Poverty Alleviation, under its National Urban Livelihood Mission is conducting a programme of employment through Skill Training & Placement (ST&P). The identified Livelihood Opportunity courses for the state of Sikkim are- Automotive Industry (Driving, Automotive Repair etc.) , Beauty Culture & Hair Dressing, Electrical , Electronics, Hospitality , Information & Communication Technology , Retail Service , Tea & Food Processing , Paint , Construction , Security , Travel & Tourism, Soft Skills , Courier & Logistics and Spa & Wellness.

Under *Ministry of Textile*, an Apparel & Garment Making Centre has been planned at Gangtok under North East Regional Textile Promotional Scheme at an estimated cost of Rs. 18.18 crore. Under Integrated Handloom Development Scheme [Component: Skill Up-gradation] from FY 2011-12 to 2012-13, total 25 groups were trained. In addition, 11 training programmes conducted on areas

of Angora shawl weaving, Cane and Bamboo Training, Stone & Wood Painting, Thangka Painting, Chuktuk & Gyapa Weaving, Rari & Lukuni weaving, and Traditional Dress Making. Under, Integrated Skill Development Scheme for Textiles & Apparel Sector 2 districts of Sikkim are covered under Jute Sector.

Ministry of Chemicals and Fertilizers conducts training for north eastern region at Central Institute of Plastic Engineering & Technology (CIPET) situated at Guwahati. In the year 2013, three (3) students of Sikkim were placed under short term (6 months) vocational training programme under CIPET. Moreover, M-DoNER and Ministry of Social Justice and Empowerment also sponsors vocational training programme for NER students at CIPET-Guwahati.

Under *Ministry of Women And Child Development* Short Stay Home (Skill Improvement for Rehabilitation) scheme has been implemented and total number of beneficiaries under the scheme were 72 during FY 2013-14. For the same year total number of beneficiaries under SABLA - Rajiv Gandhi Scheme for Empowerment of Adolescent Girls (MES modules) were 9811.

Under Special Central Assistance to Tribal Sub-Plan under *Ministry of Tribal Affairs*, Rs. 437.00 lakh has been allocated and released to Sikkim and out of this the skill development component was Rs. 44.00 lakh. In Sikkim the plan is implemented by Welfare Division of Social Justice, Empowerment and Welfare Department. Under TRIFED scheme, Skill Up-gradation & Capacity Building for Minor Forest Product Gatherers has been organized for 1000 honey gatherers and 115 hill grass growers and State Institute of Rural Development (SIRD) is the implementing agency.

Ministry of Development of North Eastern Region (M-DoNER), under its Capacity Building and Technical Assistance Scheme (CBTA) is providing short term training (6-12 months) to the NER youths in the area of tourism, construction, hospitality, horticulture, healthcare, retail etc. In 2012-13, training was given to 1210 youths of the region to enhance their capacities for employment and self-employment. However, status for Sikkim is not available separately.

The scheme of Skill Upgradation Training Programme (SUTP) for Women under *Ministry of Youth Affairs and Sports* is implemented in Sikkim through Nehru Yuva Kendra Sangathan (NYKS). In FY 2010-11, total 691 candidates of Sikkim were trained. An amount of Rs. 3.80 lakh were sanctioned for Sikkim in 2013-14 and 2014-15 under the scheme. The target to skill 270 youths from the region under Capacity Building of Youth scheme in FY 2010-11 was achieved.

Under *Ministry of Social Justice and Empowerment*, Special Central Assistance to Scheduled Caste Sub-Plan is implemented in Sikkim by Social Justice, Empowerment and Welfare Department, Government of Sikkim. From FY-2010-11 to FY 2014-15, total Rs. 223.84 Lakh has been released. 13 candidates of

Sikkim have received training under National Scheduled Caste Finance & Development Corporation Ltd in FY 2013-14.

Ministry of Communication and Information Technology, has a National Institute of Information & Technology (NIELIT), a CAD centre and one Economic Activity Training Centre under C-DAC Kolkata. Entrepreneurship Development Programme under National Mission on Food Processing of Ministry of Food Processing Industries is handled by Department of Commerce and Industries of Sikkim. Under STAR scheme of National Skill Development Corporation, 209 candidates have been trained in Sikkim. From 2011-12 to 2014-15 total 3671 numbers of candidates had been trained under Non-Star Skill Development Initiatives. The Multi-Sectoral Development Programme under Ministry of Minority Affairs is in the initial phase of implementation in Sikkim; Mangan and Chungthang blocks are identified for this.

The state government initiatives for skill development in the state of Sikkim are mainly taken by *Directorate of Capacity Building, State Institute of Capacity Building and Directorate of Handloom and Handicrafts*. The schemes operated by the Directorate of Capacity Building are- Chief Minister's Self Employment Scheme, Grant of Training / Vocational Courses under Skill Development Scheme, Comprehensive Educational Loan Scheme (implemented through SIDICO), Chief Minister's Free Scholarship Scheme and CM's Self Reliant Mission. The Livelihood Schools in the state are administered by the State Institute of Capacity Building (SICB).

d. Funding of Skill Development in the State of Sikkim

The major institutions constituting the bulk of the Technical and Vocational Education and Training (TVET) system in Sikkim is under Labour Department and Human Resource Development Department of Government of Sikkim. Senior Secondary Schools (with vocational streams) are funded by the Department of Human Resource Development, while ITIs are funded by the Labour Department. The Polytechnics receive part of their fund from the Human Resource Development. State Institute of Capacity Building receives annual funds from Government of Sikkim for running the Livelihood Schools under it. Apart from these, Directorate of Capacity Building also receives sufficient funds from the government for carrying out its various programmes. In this section, an effort has been made to get an idea about the amount of fund received by these nodal departments and their subsequent utilization for last 3 financial years so as to ascertain the quantum of expenditure incurred by the key departments of Government of Sikkim in the area of skill development.

The 3 ITIs under Labour Department have seen increase in allocation of funds in recent times. ITI, Rangpo received funding of Rs. 164.85 Lakh in year 2011-12, which increased to Rs. 359.24 Lakh in year 2012-13. ITI, Namchi and Gyalshing received fund of Rs. 129 Lakh and Rs. 57 Lakh respectively in the year 2013-14 although these 2 ITIs did not receive any fund in the year 2011-12. However, in case of all 3 ITIs, the utilization figures given against these sanctions are not very encouraging. The funding provided to secondary schools under HRD has also seen an increase over the years. From Rs. 314.68 Lakh in 2011-12 & 2012-13, the funds received by the secondary schools went up to Rs. 874.66 Lakh in the year 2013-14. Utilization of fund received by secondary schools has been excellent at 100%. In case of Livelihood Schools under SICB, the funding has

been fluctuating in the range of Rs. 10-12 Crores for the last 3 financial years. The utilization in case of Livelihood Schools is almost

100%. The 2 polytechnics in the state ATTC and CCCT receive a grant in aid of Rs. 50 Lakh each every year from Government of Sikkim through Human Resource Development Department. The budget estimates of these polytechnics are in the range of Rs. 4 Crore to Rs. 7 Crore and the expenditure is in the range of Rs. 4 Crore-5 Crore. Directorate of Capacity Building under its Skill Development Scheme has been provided funding of Rs. 10.00 Lakh in the year 2013-14 and utilisation is 100%.

So, overall the TVET system of Sikkim incorporating ITIs, Polytechnics, Livelihood Schools, Senior Secondary Schools with vocational streams and Skill Development Scheme under Directorate of Capacity Building in the year 2013-14 had a planned expenditure of approx. Rs. 34.84 Crore and against which the actual expenditure was approx. Rs. 31.41 Crore. This figure of Rs. 31.41 Crore gives an idea about the expenses incurred by the nodal department of the state of Sikkim in the area of skill development. This figure does not take into account the expenditure incurred on skill development by other departments of Government of Sikkim engaged in Skill Development in their own domain. Taken as a whole, expenditure incurred on skill development in the state of Sikkim will be much larger than the figure of Rs.31.41 Crore in the year 2013-14.

Out of the total expenditure of Rs.31.41 Crore, expenditure under Labour Department forms 9.48%. State Institute of Capacity Building and Human Resource Development Department has the highest share of expenditure which are 31.77% and 30.43% respectively. Polytechnics incurred a major part of the expenditure which is 28.30%.

IV. ASPIRATIONS AND SKILL DEVELOPMENT NEEDS

As a part of the study, detailed primary survey was undertaken in all the 31 blocks of the state to ascertain the Aspiration and Skill Development Needs of three categories of people - (i) Students (ii) Persons engaged in Vocations & (iii) Unemployed Persons. Focus Group Discussions were held with Parents of Students, and Teachers and Trainers of institutions like ITIs, Polytechnics, Livelihood Schools and Secondary Schools on issues regarding awareness of career options among parents, views on TVET system, and other issues of teacher/trainer of TVET system.

Students: Students were classified in two groups on sample basis - (a) secondary and senior secondary level students (IX-XII) & Higher Education students excluding students in the professional courses (b) vocational students studying in institution like ITIs, Polytechnics, Livelihood Schools and Secondary Schools. The prime objective in covering the above student groups was to understand their career plans, their current status of skills and their interest (if any) in skills development along with salary expectations, migration tendency, influencer in career development, perception about utility of skill development, factors driving choice of trade and preferred course duration.

Out of the total respondent students, majority of them (62%) was found looking for a government job or job in organized sectors, 77% of the respondent students was found ready to migrate for their career and 36% expected salary in the range of Rs. 21,000-40,000 per month. It was found that, parents of the students have the highest influence on deciding career development of the students followed by their teachers. Only 14% reported to have employable skills. 51% of the students perceived that skill development is important for the purpose of employment. But a considerable number of general students does not have any idea about skill development. 59% is not aware about different government schemes of skill development programme. 78% reported to have interest in additional skill development in addition to their existing course. Most preferred areas included: Computer (Hardware + Software), Tourism + Related (Tour Guide, Hotel Management), Driving, trading. Regarding duration of course, 39% of the respondents were interested in undergoing 6 months courses, 31% were interested in one year courses and 17% were interested in three months courses. The choice of a particular trade is driven by the following factors-Interest in the Trade (53%), High Chance of Employment (23%), Social prestige (10%), Recommended by family / friends (5%), Match with previous education (4%), Easy Enrolment (3%) and other (2%).

The main objective in covering the vocational students was to understand their reason for joining vocational courses, expected salary per month, migration mood, satisfaction with present courses, interest in further skill development etc. The major reasons of joining vocational trades are- Interested in the trade (45%) and High Chances of Employment (39%). Majority (38%) wants to join the labour force after completion of their vocational course. 40% expected a monthly salary within Rs. 20,000. 78% were willing to move outside Sikkim for better career opportunity. Majority of the students were found satisfied with their trade. 78% of the sampled vocational students were interested in further skills development after completion of their present course. The survey result shows that most of the respondents (35%) are interested in courses of 1 year duration, (31%) in courses of 6 months and 13% are interested in courses of 3 months duration.

Person engaged in vocations (PIVs): Sample respondents are from person of working age group (15-59 years) in various types of vocations practiced in Sikkim. The main objective in covering the persons already working in vocational areas was to understand their satisfaction with their present fields, future aspirations, current status of skills, training received and interest in further skills development. Majority (86%) of the respondents felt that the present education level was sufficient for their existing occupation. Reasons for choosing the occupation (trade) are - 32% of the respondents stated that it was a hereditary occupation for them, 25% said that there was a demand for the occupation in Sikkim and 20% said that 'Training / Education' gained in that field was the reason for pursuing the occupation. Majority (93%) of them were found satisfied with their present vocations. If provided proper opportunities, 51% of the respondents were ready to move out of Sikkim. Reason for Willingness towards Migration are - Better chance to find job (29%), Salaries and prospects higher outside Sikkim (57%). 40% stated that the expected salary to migrate is in the range of Rs.11, 000 – Rs. 30,000.

In case of self-employed persons engaged in various vocations, majority (56%) stated financial problem to be the main difficulty in pursuing their vocation, while marketing of output and raw material problems were mentioned by 18% and 15% respectively. 53% of the sample respondent self employed persons stated financial assistance as the most important factor necessary to continue with their occupation, 22% cited marketing support and 14% mentioned assured availability of raw materials as the most important support sought by them. Out of the total respondents, 84% were untrained workers who have acquired their skill from informal route, a significant number have acquired their skill “on-the-job” and 14% have acquired the skill hereditarily. 58% of the sampled respondents were interested in further skills development. It was found that, among the respondent PIVs who were interested in further skill development, the demand of short term courses is more. They are comfortable with undergoing training mostly within the duration of 3 months. Around 83% of this interested population wants the training duration to be within a period of 3 months to 6 months.

Unemployed Persons: sample respondents were taken from unemployed person of working age group. The main objective in covering the unemployed persons was to have an understanding of their aspirations and skills development needs, existing skills levels, interest in skills development, reasons for lack of interest in

some of the respondents etc. The basic idea is that if unemployed persons (especially those with lower educational attainments) are provided with employable skills, then they can find work - thereby reducing unemployment in the state and improving the socio-economic conditions of the benefitted persons. In the primary survey, aspects like efforts made by unemployed persons to find employment, self-employment, present availability of skills among them, further skill development needs were covered. 55% of the respondents had sought employment according to the primary survey. 62% of the respondents who did not seek employment had tried their hands at self-employment. 43% of the respondents reported to possess some skills. Out of this, 49% acquired the skill through self-learning, 4% via hereditary route and the rest had undergone training in formal skill development institutes. 65% of the unemployed persons without any skills were interested in skills development. Most of them want to undergo training programme of 3 months to 6 months (44%). The major reasons of lack of interest among respondents are- Not important for career (23%), Trade of choice not available (16%), No Requirement of Skill (16%).

Focus Group Discussions with Parents: The awareness level regarding vocational trades as career options is very low among the students due to limited career guidance options. Parents are more inclined towards traditional courses of BA, B.Sc and B.Com in comparison to vocational training. The parents suggested that, proper career counseling should be available for students and parents - from Class VIII onward. Courses in personality development may be considered at the school level and publicly funded career counseling facility can be started at the block level. Most of the parents were of the opinion that, vocational streams are only for school drop outs and for lower academic performers. Parents of students from urban area were aware of different vocational institutions but their

counterparts (10%) in rural areas had limited awareness of polytechnics, ITIs and private VTPs. Awareness about livelihood school is satisfactory among the parents and in their opinion the primary motivation of students enrolling in livelihood school is the stipend offered at these schools. Parents were satisfied with government initiatives for girl's education as well as existing infrastructure of schools and colleges but at the same time expressed their concern about the quality of education system of government schools. Negative perception was found all over the state towards entrepreneurship and the reason was mainly fear of failure. It was also noticed that, parents of students from urban areas were averse towards sending their children out of Sikkim for better job prospect, however reverse is the case with parents of students from rural areas. Most of the parents opined that, the youths of Sikkim are gradually moving far from traditional skills. According to them, though traditional skills must be preserved, but they are not sufficient for earning livelihood.

Focus Group Discussion with Teachers/ Trainers: They are one of the major stakeholders of the whole skill development system and success of TVET system depends on the teacher/ trainers.

Majority of the teacher/trainers of polytechnics, were of the opinion that the institutes are required to charge high fee to cover a major part of the operational costs and to maintain the facilities. A significant part of the student bodies in both the institutions are from outside the state as the high fee structure is a discouragement for local students. The enrolment figures have shown a decline in the recent years. The trend is that many students continue their education after completing their Diploma courses. Such students can secure lateral

entry to the 2nd Year classes of Graduate programmes in Engineering (BE/ B.Tech.) Although both institutions are making coordinated efforts to place their students in industries, much need to be done to strengthen industrial tie-ups – including creating awareness about the facilities and quality of training in these facilities. With the support of the Government the two institutions are planning to upgrade the infrastructure and facilities in the future. The teacher/trainers of both the polytechnics were found to be satisfied with the remunerations and other facilities available to them.

In case of ITIs, most of the instructors are working on an ad-hoc basis in all the institutions and they are not satisfied with the remunerations and other facilities. Further, Training is not provided to the instructors. As there is no residential facility for the teachers, commuting to the institutions which are situated at remote area with no regular transportation facilities is expensive. There is no established placement system; placements are from units within the state as well as from industries located elsewhere. As opined by the teacher/trainers some of the courses like COPA have outdated syllabus and requires to be revised and suggested that new courses which are in demand in job market, like welder, turner, machinist etc. need to be introduced. Further, there should be introduction of facilities like reliable Internet connection, new machines and teaching aids.

The teachers involved in the vocational streams of Secondary Schools of Sikkim have been provided by SIBIN Group. According to the instructors, in order to perform well in the IT stream, the intending student have to get suitable grounding on the fundamentals of IT beforehand, which is presently not in practice. Further, the availability of reliable infrastructure (like assured Internet connection) is not guaranteed in many parts of the state. As a result, many students of the IT stream are facing problems while undergoing their course. Tourism is being preferred in many pockets, despite being a new course. Retail Management has few prospects in the state and only a few secondary schools are offering the stream. Availability of "On the Job" Training is an issue in many schools. Majority of teachers are from outside the state and they are working on one year contracts. They have stated that there is irregularity in payment of their salaries and increment. In addition, they are required to handle classes and works not related to their area of contract.

The Livelihood Schools are operated by Service Providers, who are responsible for all aspects of the course including providing the trainers. In many of the schools there is delay in the payment of salary to the trainers and this affects the morale of the trainer. The satisfaction of the trainers varies with service providers. Trainers do not have a defined career path, nor do they have any chances of promotion in their job. Many of the students of Livelihood Schools are not serious, as they are school drop outs according to the trainers. They also opined that, in many cases, students are unable to go outside the state to seek employment as their parents are opposed to the same. Necessary facilities to conduct practical classes for courses such as electrician, automobile repairing etc. are not available at present and trainers are required to make their own arrangements.

V. SKILL REQUIREMENT TRENDS

An analysis on skill requirement trends focuses on the demand side requirements in terms of abilities and proficiencies required across different jobs and work settings in general. An attempt is also made here to give some idea about the quantitative demand of skills in different sectors based on the figures obtained from various secondary sources. The approach here is to assess the skill requirements in the promising sectors and also take into account the national and global skill requirement trends so the working population is not only

ready for opportunities within the state but in case of limited or lack of opportunities in their chosen fields, they are suitably equipped to take up opportunities available anywhere in the world. In today's globalised world, skilling efforts should take into consideration the trends in skill requirement globally. This is more so when our country is not only aiming to become a global hub for supply of skilled manpower but also planning to become a world class manufacturing hub with the newly launched "Make in India" initiative. This requires deeper understanding of the skill requirements outside the state both nationally and globally, the changing pattern in the world of work and

current hiring trends across major industry sectors.

a. Global Skill Requirement Trends

A study done by McKinsey Global Institute in June 2012, has predicted that globally there will be a potential shortage of 38 million to 40 million high-skills workers, a potential shortage of nearly 45 million medium-skill workers and a potential surplus of 90 million to 95 million low-skills workers by the year 2020. As a result of technological advancement and globalization that have happened around the world in the past three decades, a situation is emerging where there will be few high- skills workers available and insufficient number of jobs for medium- and low-skill workers. Advanced economies are at the forefront of the technological advancement in Knowledge-Intensive Manufacturing and Information Communication Technology (ICT). Advancement in these two areas have brought sweeping changes in the employment pattern not only around the advanced economies but in developing economies too.

Adoption by advanced economies of knowledge-intensive manufacturing which is mainly based on labour saving technologies have resulted in improved productivity on one hand and decline in manufacturing employment on the other. The upshot of this is increased demand for high-skill workers, reduced demand for medium-skill workers and virtually no demand for low skill workers in manufacturing sector in advanced economies. Automation of manufacturing has led to a stabilization of the share of industrial employment in the global scenario, although the absolute numbers employed in these sectors continue to rise. China and its East and South-East Asian neighbours have become a new hub for manufacturing jobs, while employment in industry in most industrial countries is in steady decline. An additional feature of change in manufacturing is that it is increasingly necessary for producers wherever they are located to keep close to the technological frontiers of their industry. For developing countries, this suggests that manufacturing is unlikely to absorb much of their increased labour supply as unskilled, strongly labour-intensive, technological options become less viable on global markets. This shows that there will more demand for high skill workers and less demand for medium and low skilled workers in manufacturing sectors in developing economies too in future.

There is an increased demand in occupations across varied sectors of services. In industrial countries, some of the fastest growth is in business services of a managerial, technical or professional character. Also expanding are social services such as health and education, as well as hotels and catering, retail and transport. The direct effect of advancement in ICT on employment are, on one hand, creation of new jobs in producing and delivering new products and services and, on the other hand, loss of jobs in redundant technologies or in firms that fail to keep pace with innovations in ICTs. Exports of services using high-speed internet connections have given rise to sectors such as Business Process Outsourcing (BPO) and Knowledge Process Outsourcing (KPO) in developing countries like India. The services sector is growing fast in not only advanced economies but in developing economies like India and China leading to growth in employment.

It is very important to have an understanding of jobs having global demand so that the youths can train themselves with employable skill and institutions skill providing training can align their courses with the global demand. Prominent among global industries which are facing acute manpower shortages currently are Construction, Oil & Gas and Petrochemical Refineries, Energy, Engineering, Hospitality, Manufacturing, Information & Communication Technology (ITC) and Mining.

b. Effect of Innovation on New Evolving Skill Sets

An ILO Report on Changing Pattern in the World of Work says that the process of innovation and diffusion of new information and communication technologies (ICTs) that took off in the 1990s constitutes a radical transformation of the means of production, distribution and exchange. It has already profoundly affected international trade and investment, the movement of capital and labour, and many work processes and products. It has also accelerated the shift towards services and their outsourcing internationally. In turn, these factors have fed back into the further development of ICTs in a continuing circle of incremental innovations built on the breakthrough of the miniaturization of electronic circuits. The report further says that the rapid spread, ongoing development and pervasiveness of this flow of innovation is driving a massive reconfiguration of world production and distribution, as well as the management systems of enterprises and public agencies with major consequences for employment patterns.

These developments along with the growing importance of sustainable development and shift to a low carbon economy are bringing significant and rapid changes in labour markets and skill needs. These innovations have necessitated familiarization of young workers with new kind of skills so that they stay relevant in the rapidly changing economy. The new skill sets which have become critical for performance in today's innovation led economies can be broadly classified as STEM (Science, Technology, Engineering, Mathematics) skills, Learning & Innovation skills, Life & Career skills, Information Media & Technology skills and Green skills.

As the name suggests, STEM skills involve skilling in science, technology, engineering and mathematics. Learning and Innovation skills involve creativity and innovation skill, critical thinking and problem thinking skill, communication and collaboration skills. Life and Career skill consist of skill such as flexibility, adaptability, initiative and self-direction, social and cross cultural skills, productivity and accountability, leadership and responsibility etc. Information, Media and Technology skills involve information literacy, media literacy and ICT (Information Communication Technology) literacy etc. Green skills are increasingly gaining importance as the economy of the world is slowly but surely moving in the direction of low carbon economy. Green economy has got its own set of unique skill requirements. Green skills are the specific skills required to adapt products, services or operations to meet adjustments, requirements or regulations designed to stand further climate change or adopt to the impact it is already having. In case of Sikkim, which has targeted to become a fully organic state by the year 2015 and has already taken various initiatives in the past to

make the state a green state, new evolving green skills are of considerable importance.

A recent report published by The Institute for the Future (IFF) has taken a deeper look at the skills which is available at present, mapped them against the various trends that are impacting the work place and identified certain skills that we will be needing for moving forward. The key skills and capabilities which are going to be in great demand in the next few years are Sense making, Social Intelligence, Novel & Adaptive Thinking, Cross -Cultural Competencies, Computational Thinking, New Media Literacy, Transdisciplinary, Design Mindset, Cognitive Load Management and Virtual Collaboration.

c. National Skill Requirement Trends

The McKinsey Global Institute Study referred to earlier has forecasted a GDP growth rate of 7.4% per year up to 2030 (Compared with 6.6% from 1990 to 2010), and annual productivity growth of 5.9%, up from 5.0% in the past two decades. This implies that, India will move workers out of agriculture at a faster rate and will create 160 million new jobs in manufacturing and services. Services are projected to contribute 73% of the incremental value in the Indian Economy and 79% of the net new non-farm jobs in the next decade. Retail and wholesale trade and knowledge-intensive service sectors such as finance, real estate, health and social services are projected to generate 28 million jobs in the next decade, up from 20 million in the past decade. India is also likely to add 15 million jobs in manufacturing in the next decade which is nearly double the 8 million created in the past decade. This figure may further increase with Government of India's newly launched "Make in India" campaign. With this level of service sector and manufacturing job growth, the low skill jobs is likely to decline from 74% of employment in 2010 to 62% by 2020.

There is an overall increase of 23% in the hiring outlook for next year across major industry sectors of Indian economy as per recent publication of India Skill Report 2015. The highest increase is in the case of Hospitality & Travel Sector with an increase of over 50% in the hiring numbers in the coming year. This is closely followed by Core Sectors (Oil & Gas, Power, Steel Minerals etc.), and BFSI (Banking, Financial Services & Insurance) Sectors whose hiring numbers are expected to have an increase of 38% and 25% respectively. The lowest increase in hiring numbers is expected to be in sectors like Manufacturing, Telecom and Pharmaceuticals. However with "Make in India" campaign of the Government of India in full swing, the increase in hiring numbers in manufacturing may increase in coming years as the government expects the manufacturing sector to grow up to 14%. These trends throw some lights on sectors of Indian Economy which have the potential to do better in recent future in accordance with the situation prevailing today.

In the study conducted for India Skill Report 2015, employers across 11 sectors were asked about the single most important skill they look for in a prospective employee to have an idea about skills desired by them. The choices given to them were Domain Expertise, Adaptability, Interpersonal Skills & Learning Agility, Integrity & Values and Result Orientation, Numerical & Logical Ability,

Communication and Cultural Fitment. Interestingly, Integrity & Values and Result Orientation were chosen by most of the employers across industries (BFSI; BPO, KPO & ITES; Consumer Goods & Durables) as the most preferred quality in a prospective employee followed by domain knowledge. Domain Expertise was chosen as the most valued trait by the three Core Sectors (Oil and Gas, Power, Steel, Minerals etc.), Engineering & Automotive and Telecom & Allied. Communication was chosen as the most valued skill in case of Hospitality sector.

d. Sectors of Economy/Industries in which Sikkim can intensify its Skilling Effort

In order to identify the sectors of economy in which Sikkim should intensify its skilling effort, it is important to understand the major economic activities in which people of Sikkim are engaged presently as well as the key areas of economic activities identified by the state as a matter of policy priority along with the aspiration of youth in terms of preferred area in which they want to be skilled.

People of Sikkim are engaged in different economic activities; prominent among them are tourism, industries, horticulture & agriculture etc. though in recent times, more and more number of pharmaceuticals, dyes, edible products and several other industries have started coming up. As a matter of policy priorities, Ecotourism, Handicrafts and Handlooms, Silk Reeling and Processing, Precision Engineering, Electronics, Information Technology, Medicinal Plants, Floriculture, Tea, Spices, Honey and Biotechnology are key areas identified by Sikkim.

As a part of primary survey conducted for the study, special emphasis was given to understand the aspiration of the youth of the state which included general students, vocational students, person engaged in vocations and unemployed persons in terms of preferred area in which they want to be skilled. The most preferred area for skill development in case of students' are computer hardware and software, tourism related skills (tour guide, hotel management), driving, trading and sports. In case of unemployed persons the preferred areas are- computer & IT, tourism, cosmetology, driving, hotel management, catering, handloom & handicraft, cutting & tailoring and trading. In case of the other two respondent categories of Vocational Students and Persons Engaged in Vocations an attempt was made to develop an understanding of the preferred trades among them. The preferred trades for skilling among vocational students are computer & IT, tourism (including adventure tourism, tour operator), hotel management, electrician and automobile etc. In case of persons engaged in vocations, the preferred areas are- computer & IT, cosmetology, fashion designing, hotel management, driving, mechanic, handloom and handicraft and agriculture.

Some of the sectors where the skilling efforts in the state should be intensified and necessary domain skill required for such sectors have been identified in the study. Factors such as thrust areas identified by the government of Sikkim for future growth and aspiration of youth in terms of preferred area in which they want to be skilled forms the basis for identification of such sectors. It is suggested that the skilling effort of the state government should be in the sectors placed below:

Tourism,Hospitality & Travel	Tour Guide, tracking guide, Buddhist circuit tourist guide, Foreign Languages, Air Ticketing Course certified by IATA (International Air Travel Association),food & beverage services, food & beverages cooking, travel counselling, front desk services, driving, housekeeping,Bartender, restaurant manager, maintenance, etc.
Pharmaceutical & Healthcare	In pharmaceutical sector product packaging, production line management (at various stages like granulation, compression, coating, aerosol manufacturing, parenteral product manufacturing), machine handling, quality control, quality assurance, safety and maintenance etc. In health care sectors skills like use of medical technology,surgical and intervention related skills, ophthalmology related skills, medical laboratory related skills, nursing and midwifery and other paramedical skills, radiography and imaging skills, rehabilitation skills.
Agriculture & Horticulture	Upgradation of existing skills for organic cultivation especially for the use of bio-fertilizer and bio-pesticide. New skill sets of cultivation, harvest, post-harvest management,farm mechanizationand Skills relatedto organic farming, Skills transportation etc. Of transplantation,grafting, integrated pest management,organic certification, nutrient management with on-farm andoff-farm biological inputs, EM technology, construction of rural compost and vermicompost units, Skills related to Mushroom Development such as Mushroom Production Technology and Spawn Production Technology Skills related to nursery raising/management of spicesuch as cardamom, ginger and turmeric, of fruits such as orange, guava,peach, pear, plum, local varieties of apple and of vegetable such as cole crops,legumes, cucurbits, solanaceous and crucifers.
Handloom & Handicraft	Production planning for technology development, sales, marketing and distribution skills improved throughput, quality control, conversion of innovative design and processes in to practice, improved finishing of items technology development, sales, marketing and distribution skills.
Precision Engineering & Electronics & ITHardware	Manufacturing productivity improvement skills, productivity improvement tools skills, mathematical concepts , computer-aided design (CAD) techniques, computer-aided manufacturing (CAM) techniques, advanced CNC machining, advanced tool room machining,process optimisation & cutting techniques , solid modelling & drafting for machine parts, automation control for machine, project management in equipment building, equipment building & automation
Software &Information architecture,Technology	Programming skills, logical and analytical skill, software database management, customer service,client management communication skill, product development, business analysis, etc.
(Banking,Financial Insurance Services and)Sector	Retail banking, documentation and legal procedures, regulatory affairs,understanding of standard operating procedures,computer skills, accounting skills, communication skills, customer management, assetliability management, risk management product development, business analysis,marketing and selling skill, claim management,portfolio management, credit appraisal.
BPO, KPO Sector	Enquiry handling, computer skill, soft skills, analytical skills,team management, accent understanding, process flow

	understanding, IP advisory and filing, understanding patents, legal transcription, process specialist, project management, information security/quality compliance.
Building, Construction & Real Estate Services	Construction supervision skills, skills required for foreman and crane operators, electrician skills, welding skills, bar bending skills, skills required for mason, plumbing skills, carpentry skills, surveying skills, quality control testing skills, safety skills, painting skills, construction equipment operating skills etc.

VI. SUGGESTED STRATEGIES FOR SKILL DEVELOPMENT IN SIKKIM

Based on the understanding developed by studying the characteristics of TVET system, traditional skills, aspiration and skill development needs and skill requirement trends, a strategy has been set out for Skill Development in Sikkim based on the pillars of Institutional Framework, Information Network, Infrastructure Support and Incentivising Skill Development in the state of Sikkim. These four pillars can be jointly referred to as 'Four-I Framework' for Skill Development in Sikkim.

VII. RECENT DEVELOPMENTS AND INITIATIVES TAKEN BY THE GOVERNMENT OF SIKKIM

The State Government has recently taken strategic initiatives in pursuance of the vision of the State Government and Government of India in building the resurgent next generation work force. The most significant among them is the creation of a Skill Development and Entrepreneurship Department to implement the vision of skilling, development of a web portal where all applications for skill development being implemented in various department would be logged in, and setting up of a model Career Counseling Centre to be controlled by SICB with a network of eight more such centers in rural and urban areas.

Other efforts include framing a policy paper with a common vision and perspective on the manner in which skill development initiatives could be implemented in the State and constitution of a State Training Authority and Task Force which supervises and takes decision on the adoption of an Annual Training Plan and entrusting departments, industries, communities and establishments with responsibilities for assuring outcomes for self employment, industrial, community employment and internship placement in various establishments in the country, both within and outside Sikkim.