



Establishing an Employer Led Labour Market
Secretariat (ELMS) Project

FINAL LIST OF OCCUPATIONS ON CONSTRUCTION, AGRICULTURE & TOURISM (CAT) SECTOR

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Following Steps followed for Occupations Identification and Finalization for

Process:

- 1) Inventory of occupation collected.
- 2) Agreed Criteria of most demanding Occupation rating in SWG and select occupation
- 3) Brainstormed for most demanding occupations identification in CAT sector association in all seven provinces
- 4) Sharing of Selected occupation with the provincial level EAs CAT sector members for Validation
- 5) Finalization of Occupation, with short description and level required in SWG meeting

Sector Working Group (SWG) Member List



Construction SWG Members

Name	Designation
Mr. Gore Sherpa	FNCCI SWG Member
Mr. Saurav Sharma	CNI SWG Member
Mr. Satya Narayan Prajapati	FNCSI SWG Member
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Name	Designation
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Name	Designation
Ms. Sarita Lama	FNCCI SWG Member
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Construction, Agriculture and Tourism (CAT) Sector Expert

Name	Designation
Mr. Ramesh Shakya	Construction Sector Expert
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Mr. Prabesh Aryal	Tourism Sector Expert

Summary Sheet of CAT Sector Occupations:

 Construction sector			
SN	Proposed Occupation Title	Proposed Level	Few Observations
1.	Construction Lab Technician	Level -3	<ul style="list-style-type: none"> ▪ It is new occupation, ▪ Needed to ensure the quality of construction materials, ▪ Needed to select as per the description given in the materials, ▪ Needed to ensure the construction strength or output, ▪ Till now, OP, NOSS and academic courses are not found in the system. ▪ This is multi task occupation, ▪ The title will be Civil Construction Worker or Construction Technician,
2.	Site Supervisor	Level -2 (Civil sub-overseer)	<ul style="list-style-type: none"> ▪ Level will be Civil Construction Supervisor or Level -2, ▪ It supervises the basic construction process and labour performance in the site, ▪ OP is available and Academic course of TSLC level is available. ▪ Needed multi task worker in electrical field, ▪ This type of workers needed in the construction phase of industry and buildings,
3.	Electrician	Level -2	<ul style="list-style-type: none"> ▪ Separately NOSS are available for building electrician and industrial electrician. ▪ It is new occupation title,
4.	Batch plant operator	Level -2	<ul style="list-style-type: none"> ▪ This is needed to operate different construction equipment and plants, ▪ The OSS and NOSS are not found in the system. ▪ It is also scarce in the labour market, ▪ These are useful workers in different construction sub-sectors,
5.	Excavator operator	Level -2	<ul style="list-style-type: none"> ▪ NOSS is available, it developed only for the skill testing purpose.
6.	Welder	Level -2	<ul style="list-style-type: none"> ▪ As the new technologies is being introduced, Wood is replaced by metals like black pipes, square pipes, stainless steels are replaced. ▪ So it only not fabricates new steel structures but also general repairs and maintenance of basic tools and heavy equipment and plants, ▪ NOSS L-2 is available, ▪ It is required in all construction sub-sectors.

7. Scaffolder	Level -2	<ul style="list-style-type: none"> ▪ New technologies are emerging and new materials like aluminum tubular pipes are being used for scaffolding. ▪ This type of workers uses special and right techniques and technologies during scaffolding and prevent from accident. ▪ Scaffolder_Bamboo-Timber OSS L-1, Scaffolder –Tubular OSS L-1 are available ▪ It is required in building construction, bridge construction, and Hydro-power construction sub-sectors.
8. Carpentry and interior decorator	Level -2	<ul style="list-style-type: none"> ▪ In changing context, there is an increasing trend of use of wood carvings for interior decoration. The Carpenters not only places form work before concrete casting but also makes furniture and wood carvings using new designs and technologies ▪ OP L-2 available , Construction carpenter OSS L-2, Furniture maker OSS L-2 are available ▪ It is mostly required in building construction sub-sector.
9. Aluminum fabricator	Level -2	<ul style="list-style-type: none"> ▪ In the change context, quality works need to be delivered in short time period. So use of aluminum is increasing. The worker in this field selects the right sections as per specification and fabricates the elements. ▪ OP L-2 is available ▪ It is mostly required in Building construction and bridge construction sub-sector.
10. Plumber	Level -2	<ul style="list-style-type: none"> ▪ It is multi task worker needed for ▪ Selecting right material (HDPE, PVC, UPVC, GI etc.) for water supply, waste water and drainage pipe connection ▪ Selecting right fittings (bend, elbow, sockets, reducers etc.) and suggests accessories for hot and cold water systems. ▪ Fixing sanitary apparatus as per drawing ▪ It connects pipelines, installs hot and cold water supply and drainage system in private and public buildings. It also performs repair and maintenance work. ▪ NOSS L-2 is available. ▪ It is required in building construction, water supply and sanitation and irrigation sub sectors.



Agriculture Sector:

1.	Herbal Farm Technician	Level-2	<ul style="list-style-type: none"> ▪ Needed to provide care and management herbal plant, ▪ Needed to domesticate and produce wild herbs and medicinal plants, ▪ OP of level -1 and short course available, not meets the employer's requirement. ▪ It is multi task occupation needed to process both vegetable and fruits.
2.	Fruits and Vegetables processor	Level-2	<ul style="list-style-type: none"> ▪ Needed to preserve and process surplus vegetable and fruits to reduce farmers loss, ▪ OP and OSS are not found, ▪ Separate short course of fruit and vegetable processor are available. ▪ It is civil agriculture farm worker, ▪ It is also multi task performer,
3.	Agriculture Farm Technician	Level-2	<ul style="list-style-type: none"> ▪ Needed for the all types of agricultural farm, ▪ Agriculture JTA and short course of community agriculture assistant are available, ▪ OP, OSS, and NOSS are not available. ▪ These are multi task performer to raise nursery and floriculture and land scape, ▪ Needed to provide care and management of nursery,
4.	Nursery and Landscape Technician/Gardner	Level-2	<ul style="list-style-type: none"> ▪ Needed to propagate horticultural and ornamental flowers and plants, ▪ Are also equally useful for beautification of topography and landscaping, ▪ OP of Nursery assistant, flower decorator and gardener are found, ▪ OSS NOSS are not available. ▪ Needed to prepare all types of milk products,
5.	Dairy Processor	Level- 2	<ul style="list-style-type: none"> ▪ Short course of sweet and dairy milk processor found, ▪ Not found OP, OSS and CS Dairy Processor. ▪ Needed multi task worker for all types of natural fiber and lump crafting, ▪ Needed to domesticate commercial fiber plant, their cultivation practices,
6.	Natural Fiber and Lump Crafter	Level-2	<ul style="list-style-type: none"> ▪ Perform extraction of fiber, preservation, packaging and marketing of natural fiber, ▪ Some short courses of felt, nettle and hemp fiber, jute fiber and knot crafter, banana fiber processing, nettle and hemp fiber processing and jute processing are found.

			<ul style="list-style-type: none"> ▪ OP, OSS or Competency Standard are not found in this occupation.
7.	Organic Certification Inspector	Level-3	<ul style="list-style-type: none"> ▪ Needed to certify agricultural organic products, ▪ This type of experts are scarce, ▪ Nepal and it is new occupation in our context, ▪ Till now invited in high cost from outside the country, ▪ OP, OSS and NOSS and even short courses are also not found in the country. ▪ Fish and meat has big business in the country, ▪ It needs to be promote in hygienic and systematic, ▪ Needed multi task workers to process fish and meat,
8.	Meat and Fish Processor	Level-2	<ul style="list-style-type: none"> ▪ They also perform hygienic slaughter and carcass preservation, ▪ It is new occupation and not found OP, OSS or NOSS in the system. ▪ This is also multi task worker, ▪ Needed to process both tea and coffee,
9.	Tea and Coffee Processor	Level-2	<ul style="list-style-type: none"> ▪ Multi task performer are not found in the labour market, ▪ Short training course for tea processing is found, ▪ Separately NOSS of coffee and tea processor are found. ▪ Needed multi task worker to provide care, management of livestock and poultry,
10.	Livestock and Poultry Farm Technician	Level-2	<ul style="list-style-type: none"> ▪ Prepared to commercial production of all types of livestock and poultry birds, ▪ Long course of Livestock JTA, vet JTA, and short course of CLA are found. ▪ OSS of only livestock JTA is found but NOSS is not available.



Tourism Sector

1.	Hotel Maintenance Technician	Level-2	<ul style="list-style-type: none"> ▪ There are huge number of medium and small hotel business in the country, ▪ Each hotel can't keep all type of worker in paid base, ▪ It is multi skill new occupation specially needed for medium and small hotel, ▪ It is hybrid type of technician having general knowledge of plumbing, electronic, electrical, air-conditioning for the maintenance of hotel industry. ▪ No OP, OSS & NOSS developed yet. ▪ It is multi skill new occupation, ▪ Needed to run and manage small hotel/Inn, ▪ They welcome guests', check them in and out, keep account, ▪ They also perform housekeeping and prepare common Nepali food items, ▪ No OP, OSS, NOSS are developed yet. ▪ This is also very important occupation needed for the tourism sector, ▪ OP, OSS & NOSS are not developed yet, only short course available.
2.	Inn-Keeper	Level-3	<ul style="list-style-type: none"> ▪ Has high demand in the tourism sector, ▪ Only short course available, ▪ OP, OSS & NOSS are not developed yet. ▪ New occupation title, ▪ Multi task worker, ▪ Pre-requisite is not defined, ▪ In addition to safe driving skills; needed communication skill, grooming skills, detailed geographical knowledge of Nepal, climate, festivals, culture, humor, and presence of mind, ▪ No OP, OSS and NOSS found. ▪ Nepali foods are being popular amongst national and international tourists, ▪ Nepalese cuisine outlets are expanding its menus in the restaurant and hotels, ▪ Nepalese cook is shortage in the job market, ▪ Needs to prepare varieties of simple ethnical Nepalese food items, ▪ For this occupation only level one NOSS is available, ▪ But OP, OSS and NOSS for level -2 is not found.
3.	Trekking Guide	Level-2	<ul style="list-style-type: none"> ▪ Short course is available, ▪ OP, OSS & NOSS is not developed yet,
4.	Tourist Guide	Level-3	<ul style="list-style-type: none"> ▪ Short course is available, ▪ OP, OSS & NOSS is not developed yet,
5.	Tourist Vehicle Driver	Level-2	<ul style="list-style-type: none"> ▪ Short course is available, ▪ OP, OSS & NOSS is not developed yet,
6.	Nepali Cuisine Cook	Level-2	<ul style="list-style-type: none"> ▪ Short course is available, ▪ OP, OSS & NOSS is not developed yet,
7.	Climbing Guide	Level-2	<ul style="list-style-type: none"> ▪ Short course is available, ▪ OP, OSS & NOSS is not developed yet,

			<ul style="list-style-type: none"> Recommended minimum entry requirement +2 in this occupation.
8.	Rafting Guide	Level-2	<ul style="list-style-type: none"> Only short course is available, OP, OSS & NOSS is not developed yet, Recommended minimum entry requirement +2 in this occupation. It is a new occupation, Mechanical overseer level graduates needs to be trained,
9.	Assistant Airlines Maintenance Technician	Level-3	<ul style="list-style-type: none"> It must be at least 3rd level due to mechanical overseer needs to trained, This type of workers are very useful for airlines companies to carry out their regular aviation maintenance work, No OP, OSS or NOSS are found. New occupation, Emerging rapidly this business in the big cities,
10.	Spa and Wellness Masseuse	Level-2	<ul style="list-style-type: none"> OP, OSS & NOSS and short courses are not developed, Recommended minimum entry requirement is SEE.

Note:

- NSCO concern:** As the occupation skill standard or competency standard prepared based on the proposed occupation title and level, it ensures necessary information needed to link with NSCO system. The selected and potential occupations of CAT sectors reveals all necessary features to bond with the NSCO concern.
- NVQS concern:** So far the NVQS concern, this system is not established yet, it is still under discussion, and only conceptual understanding is made till the date. There is no several basic information of occupation like- level, their duty area and task description, clear demarcation and requirement of the occupation title and their level. Further, there are more than 4 Lakh individuals certified by NSTB in different level of the occupation as discussed with the NVQS personal. If the NVQUS system implemented inevitably it should be equivalent with the adopted system. ELMS right now cannot entertain in imaginary and uncertainty matter and should follow the existing rules and regulations of the nation. In this context it is logical to develop business and industry's competency standard toning with the NSTB and as per the own requirement of the business and industry sector.
- NSTB concern:** The selected occupations title and their level of CAT sectors are in line with the NSTB system and there is no risk of linking with national occupation skill standard. Some of the proposed new occupations are also compatible with the established NSTB system.
- Other Occupation concern:** Other occupation which are not included here will be documented in the occupation inventory of CAT sectors as per their priority and requirement.

OCCUPATIONS AND IT's DESCRIPTION



AGRICULTURE SECTOR (Agreed List):

SN	Name of occupation	Desired level
1.	Herbal Farm Technician	Level-2
2.	Fruits and Vegetables processor	Level-2
3.	Agriculture Farm Technician	Level-2
4.	Nursery and Landscape Gardener	Level-2
5.	Dairy Processor	Level-3
6.	Natural Fiber and Lump Crafter	Level-2
7.	Organic Certification Inspector	Level-3
8.	Meat and fish processor	Level-2
9.	Tea and coffee processor	Level-2
10.	Livestock and Poultry Farm Technician	Level-2

OCCUPATION DESCRIPTION:

1. Herbal farm Technician Level -2

Herbs have numerous health benefits. It may help to prevent and manage many vital health problems like heart disease, cancer and diabetes. It also stimulate the immune system and strengthen human body to resist disease and infections. In Nepal, some herbs domestic and some exotic herbs are cultivated organically and conventionally for the production of essential oils and dry herbs. The medicinal plant processing plant were found in all seven province and processing of medicinal plants has increased 10 folds in last two decades according to Arjun Chapagain 2019.

In Nepal, cultivation of herbs and herbal application has long history. Gradually, it is emerging as an important economic sector of Nepal. Additionally, herbs are major export and means to minimize the trade loss of Nepal. According to the Ministry of Forest and Environment, has initiated collecting geographical data and information on a massive scale to promote production of medicinal herbs. Ministry also plans to identify potential areas for herbs production and declare and develop them as pocket area for commercial cultivation, harvesting, storing, processing and marketing of herbs. Likewise, private sector has also invested significant amount of resources in this sector.

According to the current macroeconomic report of Nepal Rastra Bank, Nepal exported herbal product worth Rs. 1.02 billion in 2017-18. It is almost 36% more than the figure in the previous year. In the herbal export figure, export to third countries almost doubled to Rs 295.9 million while rest of the earnings were from India. It is estimated that medicinal plants and aromatic plants worth more than USD 18 million traded from Nepal mainly to India. Turmeric, pepper (Timmur), asparagus (Kurilo), cinnamon, spikenard (Jatamasi) are main exportable herbs of Nepal. Nepal trade integration strategy 2016 has recognized medicinal herbs as an important product having huge export potential. As more and more in developed countries attracted to herbal medicine and cosmetic extracts from naturally found chemical composition. Usually herbs found 3000 meter and above are considered as rich in natural beneficial chemicals.

Because of its multi-millions trade transaction and income generation potentiality, this sub sector has attracted many stakeholders of commercialization and conservation interest according to medicinal and aromatic plant directory. However, the research based data is not available, a large number of unskilled workers are engaging to cultivate, domesticate wild herbs and collect naturally available herbs directly or indirectly in the herbs production and processing enterprises according to the private sector investors. However, CTEVT has ongoing short term training package for the herbal farm worker since 2010, it does not meet the requirement of the vastly growing herbal production and processing enterprises of the private sector.

2. Nursery and land scape gardener: Level -2

Ornamental plants and floriculture is an export potential and has good scope of commercial production and distribution. The important factors which determine the growth potential are soil, climate, labour, transport and market. All most all big cities are developing very speedily to accommodate this fast growing population, cement concrete jungle is also developing at the same rate and thus people are now realizing the importance of open space, parks and garden for recreation and relaxation, peace of mind, and unpolluted air. Thus to meet these all requirements, bio-aesthetic planning is essential, which runs hand in hand in town planning. Further, the floriculture and ornamental plants garden in the country yard is an integral part of the modern life and found place in institutional and home gardening.

Nepal as a tourist destination has good market opportunities for ornamental and floriculture products. It is growing very well in our nation. These aesthetic plants are used for in-door and out-door decoration. As far as loose flower are concerned mainly used for preparation of gajara, veni, garland and bouquets. Hence, the demand of flowers and ornamentals plants are unlimited. Further, if we talk about our cultural practices like aesthetic planning, floral garden, social functions and religious functions the demand for floricultural plants is increasing and contributes better living environment.

Similarly, it plays a vital role in continuous employment creation and income generation. The volume of flower import in 2014/15 was 10, 04, 49,610 pieces and export is only 25, 40,215 pieces

according to the Floriculture Association Nepal (FAN). It shows considerable amount of trade loss of Nepal. The volume of floriculture business in Nepal is growing at the rate of 10 -15% per year. The commercial floriculture has now been expanded to more than 36 districts with over 635 private nurseries covering 80 hectares of land and engaging more than 40,000 workers. Currently, there are 5 wholesalers and 60 regular retailers. Only cut flowers contributed about 16 crores annual turnover in 2069-70 according to FAN.

Additionally, floriculture business have important role in transferring income from rich people to low income people. It is also an export potential industries of Nepal and it utilize the agro-biodiversity. Nevertheless, the production of flowers and landscaping enterprise requires good quality seeds, Germplasm, tissue culture facilities, significant capital investment, and post-harvest management skills. The nursery and floriculture investors realized that to manage all these issues properly there is a huge gap of skilled human resource.

3. Agriculture farm Technician Level -2

Agriculture is the science and business of cultivating corps and animals. It is a broad term encompassing all aspect of crops and livestock farming. According to Ministry of Agriculture and Livestock Development, Nepal is an agricultural country having 66 percent people directly engaged in farming and contribute more than 36 percent in the national GDP. Further, most of the Nepalese industries are agro-based and nearly 75% exports occupied by the agriculture and livestock production. Agriculture is the main source of food, income, and employment of Nepal according to the World Bank.

Nepal is richly awarded with agro-biodiversity. Rice, maize, millet, wheat, barley and buckwheat are the major staple food crops. Similarly oilseeds, potato, tobacco, sugarcane, jute and cotton are the important cash crops; whereas lentil, gram pigeon pea black gram, horse gram and soybean are the important pulse crops grown in Nepal. Currently commercial grain farming, commercial mixed farming and commercial plantation farming are common commercial agricultural farming system in Nepal. These agriculture farm widely engaged agriculture unskilled farm helper, junior technical assistant and junior assistant technician.

Currently, there are around 3500 agriculture graduates working in Nepal. In total, 250 agriculture graduates are being developed annually by different institutions around the country and out of which 30% are believed to go abroad either to study or for employment (Pyakuryal, 2013). Those who are working in Nepal are also reluctant to work in actual field of agriculture and livestock farm as a role models agriculture practitioner.

Accordingly, in agriculture sub-sector; the private sectors' employers realized huge gape of competent human resources of agriculture worker with strong willingness to work in real farm situation. These are general type of agriculture field technician. They work and guide junior workers in implementing better cultivation and rearing practices of agricultural crops. Private sector investors realized considerable gap of skilled agriculture workers of different level, specially, lower level technician and middle level technician has high demand in the field situation.

4. Livestock and poultry farm Technician Level -2

Agriculture is the science and business of cultivating crops and animals. It is a broad term encompassing all aspect of crops and livestock farming. According to Ministry of Agriculture and Livestock Development, Nepal is an agricultural country having 66 percent people directly engaged in farming and contribute more than 36 percent in the national GDP. Further, most of the Nepalese industries are agro-based and nearly 75% exports occupied by the agriculture and livestock production. Agriculture is the main source of food, income, and employment of Nepal according to the World Bank.

Nepal is abundantly awarded with agro-biodiversity. Instead of agricultural crops, dairy cattle/buffalo farming, swine and poultry farming, sheep/goat farming are common livestock farming system in Nepal. These livestock farm widely engaged unskilled and skilled livestock farm worker, junior technical assistant and junior assistant technician; and even veterinary technician and livestock technician.

Poultry farming is integral part of agriculture in Nepal. There are 5000 commercial poultry farms in Nepal (Practical Action-2010), Poultry business contribute about 4% total GDP and direct employment reported 1.5 lakh people. Commercial production of chicken meat in Nepal stands at 114,058 tons annually, while egg output amounts to 1.20 billion sets annually according to CBS report. There is about 47.96 million fowl population in Nepal with 28.3% laying hen, which produces 887.24 million table eggs. Average annual growth rate of hen eggs production has been 8-10%.during last ten years. Chitwan, Kathmandu and Kaski are the major district with higher number of poultry farms in Nepal (MOAC, 2014).

Currently, there are around 70 livestock and veterinary technician (2012) are being developed annually by different institutions around the country and out of which 30% are believed to go abroad either to study or for employment (Pyakuryal, 2013). Those who are working in Nepal are also reluctant to work in actual field of livestock farm as a role models livestock and veterinary practitioner.

Accordingly, in this livestock and poultry sub-sector; the private sectors' employers realized huge gape of competent human resources in livestock and poultry production and their health care of different level with strong willingness to work in real farm situation. These are basic level and general type of skilled livestock and poultry field worker. They work and guide junior workers in implementing better rearing and health care practices of livestock and poultry birds.

5. Organic Certification Inspector Level -3 (Organic certification technician)

Organic farms belief on the use of local natural resources and their management. To ensure organic methodology of agricultural production and quality of products requires special requirements. Organic certification brings opportunities for protection of local resources, soil,

crops and animals, their products and value additions, better market access, improvement of workers, conservation of soil and water and better human health. Further, the organic certification certifies the producers like seed suppliers, farmers, raw and processed food in written form by periodic on-site inspections and supervision.

Organic certification is a certification process for production and processing procedures of organic food and other organic products. Organic certification mandates that the certifying inspector must be able to review farm, livestock, and other products in accordance with set standard protocol of the national and international specific legislation. Further, inspector must be able to assess compliance of operations with standard, write report, communicate inspection result and suggest corrective actions.

The demand of organic products is increasing day by day in the national and international agricultural market. Nepal government is also emphasizing on organic products and utilization of local resources. Consequently, the demand of organic certification is gradually increasing in Nepal. Further, organic farm investors are procuring organic inspectors from the abroad in high cost. Hence, private sectors investors for organic based farm / industries are trying to get such technician in the local market.

6. Natural Fiber and Lump Crafter Level -2

Natural fibers are any hair like raw materials directly obtainable from an animal, plants or mineral source such as felt, cotton etc. it is a mass of cells in which diameter is negligible in comparison with the length. Nepal abounds in fibrous materials especially, wool, fur, cotton, Allo, jute, and straw. Their only small number can be used for textile products or other industrial purpose. Most textile fibers are slender, flexible, and relatively strong.

In our country, natural fibers have been used in the textile industry since a long time. Fibers can be extracted from the bark of some plants like jute, ramie, nettle, banana and hemp. In Nepal, people have tried to commercialize the fiber and develop high quality exportable end products.

According to Nepal textile and cloth apparel industry directory, textile and garment cloth industries of Nepal has prime role in national economy and growth of tourism sector in Nepal. This sub-sector helps to employment, livelihood income and GDP. Textile weaving mainly handy craft, homemade work and small textile processing house business are major sources of textile production. Nepal as a tourist destination textile goods have high demand. More than 55 types of handicraft, home textile and décor items exported from Nepal to 110 countries. United States and European countries are major market of these products. Textile items domestic consumption is NPR 500 million and export worth 7 million USD per year.

Textile industries of Nepal faces severe raw material availability problem. Our domestic raw materials can not satisfy the national demand. All fabrics mainly imported from China. To overcome this gap this sub-sector should boost up the domestic textile production. Therefore, private sector realized that the natural fiber and lump crafting human resources has to be greatly increased.

7. Dairy processor Level -3 (Dairy Processing Technician)

The organized dairy development activities in Nepal began only after 1952. The establishment of a Yak cheese factory in Langtang of Rasuwa district under the assistance of Food and Agriculture Organization (FAO) in 1953 is considered to be the pioneer activities in the dairy development of Nepal (FAO, 2010). Dairy is of special importance in Nepal given the high demand for products and the emergence of organized commercial activity.

Dairy provides employment for 130,000 people and contributes 9% of Nepal GDP as well as 33% of AGDP. The sector is dominated by a vast number of small-scale subsistence production units and micro and small collection and processing units; as well as a limited number of large-scale industrial processing units. However, there is a growing presence of small and micro enterprises actors responsive to emerging commercialization trends. Among the 3.8 million farming households in the country, 95% have dairy animals because of the key role they play in household subsistence and nutrition, the provision of draft power and local transport.

However, most households produce mainly for home consumption with some flush season sales. Only about 14% of milk producing households (i.e. 500, 500) are both producers and sellers. Production is characterized by flush and lean seasons, while milk prices have long been regulated to protect the small procedure. With an average daily supply shortfall of 550, 00 liters. There is significant scope for smallholders to investment to exploit opportunities, there is an emerging investment landscape including incubators for supporting the investment readiness of agri-businesses.

Nepal is one of the world few place in the world where yak milk is used for making cheese. Churpi or Durkha is hardened cheese consumed mainly in the Himalayan region of Nepal and bit by bit other part of Nepal is also found. Hard Churpi contains low fats and plenty of essential proteins and other nutrients. On the other hand, soft Churpi is used as fillings while making momo and soups and several other vegetable delicacies.

People also buy hard Churpi/ Hard cheese as dog treats. It is being exported to so many countries, including Canada, Germany, Hong Kong, India, Israel, Japan, Korea, Malaysia, Russia, Singapore, Taiwan, Thailand, UAE, UK and USA. It is becoming a regular source of income for Nepal's rural farmers. Even Churpi becomes popular aboard.

DDC is the dominant processor and seller in the market, however, there are significant number of private dairy plants in large and small-scale. Swiss cheese connoisseur Jean Paul says "Nepal has perfect conditions for it to develop as a cheese producer. It has the right climatic conditions, the grasslands and people who are traditionally into animal husbandry and big volume of milk production. Surprisingly, Nepal doesn't export cheese. Moreover, we have a surplus of 30,000 liter of liquid milk every day according to Babu Kaji Panta, Executive Director of NDDDB. This is an big opportunity to make value added varieties of milk products like Cheese, Churpi, Khuwa, Paneer, Ghee, Ice-cream and Yogurt etc. The domestic market is stagnating and driving away

investors due to lack of basic skills workers. Further, there is no standard manufacturing process and quality can fluctuate dramatically.

Iswori Prasad Adhikari of DDC explains, 'Right now, the demand exceeds the supply, especially in the case of Yak Cheese.' According to Jean, 'the export could pick up if the consistency in the hygiene, taste and the quality'. Thus, investors are interested to scale up the existing milk processor and new entrants in dairy processing plants. Further, investors are also interested to capture the opportunities by utilizing the surplus milk and prepare exportable varieties of milk products.

8. Fruits and vegetables processor: Level -2

Fruits and vegetables are considered as highly perishable commodities and are available in the some seasons and in the certain parts of the different province. It is noticed that large amount of fruits and vegetables are wasted due to the absence of facilities of proper post-harvest handling, processing, distribution and marketing. In Nepal, different studies have shown the post-harvest losses of fruits and vegetables are 20-50% (Gautam and Bhattarai, 2012). Perishable nature of most fruits and vegetables demands good post-harvest technologies and knowledge. Proper processing and value addition of fruits and vegetables grown in Nepal is an additional and complementary method of solving food needs. We can feed more people without bringing an additional land under cultivation.

Only vegetable sub-sector contributes 8.8% and fruits sub-sectors contributes 7.04% of the country's GDP. Hence, Fruits and vegetables processing enterprises are the only feasible enterprise in the context of Nepal. It is observed that post-harvest techniques and food processing industries are increasing now a days. This types of processing industries improve food nutritionally by removing toxic substances, promotion of palatability, extending shelf-life and keeping quality. These industries have the potential to expand their market size nationally and internationally, especially if there are improvement in the product quality and attractive packaging.

However the research data is not available, the dried products of vegetables and fruits, pickles and fermented products, fruits candies and Titura, varieties of sauces, jam, jellies, marmalade and varieties of fruits products, fruits juice and squash, chips and soup powder, tomato products-ketchup and sauce, indigenous products like Lapsi, Bel products and different spices products have high demand in the national and international market. In Nepal many entrepreneurs and investors are investing in these business. However, they are facing many challenges for the promotion of these industries. In the business and industry, agriculture sectors' leaders realized that the skilled workforce is one of the major constraints for the promotion of fruits and vegetables processing and creating new opportunities.

9. Tea and Coffee Processor: Level -2

Coffee is one of the most preferred beverages in Nepal. Different types of coffee based drinks, both hot and cold, is consumed at homes, restaurants, coffee houses, and other forms of eateries,

by people of all age groups. Coffee is grown with almost no use of inorganic fertilizer and pesticide. Coffee cultivation has an enormous potential to income generation opportunities as Nepalese coffee has high demand in international market. In addition, it could be an important means for soil conservation, bio-diversity maintenance and watershed balance in the mid-hills of Nepal.

The harvest period occurs once in a year, and that is when the farmers pick only the bright red coffee cherries from the coffee plant. The harvested fruit is then taken to pulping center for processing. Coffee can be processed via dry processing, wet processing or a hybrid method called semi-dry. The choice in processing often depends on the environment and resources of the growing regions; dry processing needs hot, dry temperatures and wet processing requires access to bountiful gallons of clean water. Wet processed coffees are considered to be of higher quality than dry-processed coffees, and they are much more consistent in quality.

Tea comes from a single plant species, "Camellia Sinesis". It is the small changes within the processing of tea leaves that alter the profile and characteristics, creating a variety of flavors and caffeine levels. Green teas retain similar characteristics to the fresh leaves; they are vibrant and bitter while black and oolong teas become mellow and pleasant. Black teas will undergo full oxidation while oolong teas will go through partial and green teas skip this process altogether. Following withering, the next process all teas undergo is to rolling or pressing of the leaves. The leaves are then heated, ending the enzymatic process and marking the start of the drying process. The drying process is an important preservation step. After the tea is dried, the leaves are sorted and graded by the size of the leaf.

Since tea and coffee industries are labor-intensive industries, there is a great scope for employment of rural surplus labor and reducing migration from hills to the plains and towns. Tea and coffee growing also provides opportunity to make fallow lands productive which are used marginally so far. As there is good national and international market potential for Nepalese tea and coffee, the sector could emerge as an important contributor to Nepal's inclusive economic growth and rural employment generation.

10. Fish and Meat Processor: Level -2

Meat, poultry and fishery processing refers to a series of actions applied by the farmers and other actors of the value chain to preserve their products from the time product is caught until it reaches to the consumer. It is advisable for the farmers and other beneficiaries to process their products in a proper place with good hygienic condition. Butchers and meat, poultry, and fish cutters are employed at different stages in the process that converts animal carcasses/bodies into manageable pieces of meat suitable for sale to wholesales or consumers. Meat, poultry and fish cutters commonly work in meat packing or fish and poultry processing plants, while butchers are usually employed at the retail level.

A part of their job is to cut and trim the meat by observing standard meat cuts. They then categorize meat into different parts, weight the parts and place them in sealed containers or wrap them in packages. The basic requirements for a career as Meat, Poultry and Fishery Processor

are skills and qualifications in Production, Processing, Food Production, or a related field. Meat, Poultry and Fishery Processors acquire their skills on the job through formal and informal training programs. Nearly 50 percent worked in meatpacking or poultry and fish processing plants, while most others were employed at the retail level in grocery stores, meat and fish markets, restaurants and hotels. Employments of Meat, Poultry and Fishery Processors is expected to increase in FY 2021-2022.

Minutes by: Khem Raj Kafle, Expert, Agriculture Sector

SWG and Experts, CAT sectors

June 15, 2021



Construction Sector Occupation Description

CONSTRUCTION SECTOR (Agreed List)

SN	Name of occupation	Desired level
1.	Construction Lab technician	Level-3
2.	Site Supervisor	Level -2 (Civil sub-overseer)
3.	Electrician	Level -2
4.	Batch plant operator	Level -2
5.	Excavator operator	Level -2
6.	Welder	Level -2
7.	Scaffolder	Level -2
8.	Carpentry and interior decorator	Level -2
9.	Aluminum fabricator	Level -2
10.	Plumber	Level -2

OCCUPATION DESCRIPTION

1. Construction Lab Technician Level -3

There are very less lab technicians in construction and industry sector. The main job of lab technician is to verify the content of construction materials at site against the content prescribed by factory. The next job is to determine the quality of the construction materials used in construction works. Without lab test, the construction materials like cement, sand, aggregate etc. are not allowed to use in construction work.

In present context the person with working experience in construction sector are employed as lab technicians. But they are not skillful.

In change context, there is a high quality awareness and the quality of construction work and use of quality construction materials are the responsibility of contractors. Hence, it is very necessary to have one skilled lab technician in every project.

Apart from construction industries, other industries registered (like चिउरा उद्योग, रोडा उद्योग, बालुवा उद्योग) are also concerned with quality output. So there is high demand of skillful lab technicians in construction and other industries as well.

2. Site Supervisor: Level -2

In present context there is a trend of sub- contracting the construction works. These works are supervised by non-technical person due to the unavailability of qualified supervisors. This results to the low quality and delay in construction work. Hence, this gap needs to be fulfilled by the qualified site supervisor (civil sub overseer).

As site supervisor (civil sub overseer) is the qualified technical person, s/he can read the basic drawings, quickly understand the instructions given and supervise the quality of every task/work at the construction site. In some cases s/he can also handle the basic survey instrument.

S/he is the person who monitors and supervises the day to day work in construction sites to achieve the quality work in given time frame.

Hence, for quality and efficiency of work, every construction company requires 10-15 site supervisors (civil sub-overseers) for different projects in different locations.

In small industries, timely monitoring and supervision is very important in implementation part of projects. Especially compliance of design in grill industry, interior decoration, tailoring, small hydro power projects etc. So, to deliver the quality products effectively and efficiently, there needs a qualified technician not only in big projects but also in cottage and small industries like grill industry, hydropower, and agro based small industries etc.

The labour market survey conducted by CTEVT has projected requirement of 500 assistant sub engineers for private formal sector.

3. Electrician Level -2

Electricity is the main source of energy required in industries and construction works. It is required in producing construction materials, construction works and even for operating tools and heavy equipment.

In every project safety is their priority. But there are many cases of accident happened due to the leakage of electricity. So, for safety purpose and prevent from electrical hazards and accidents, at least one qualified skilled electrician is required in every project.

In all over Nepal there are 418000 registered industries. Among them 218000 industries are in function and renewed. If only 10% industries are considered then, approximately 21000 electricians are required for small industries.

Many Hydro powers producing less than 5 megawatt are registered in FNCSI which needs electricians. Similarly, traditional mills like rice mills, bitten rice mills and other types of mills are being replaced by power mills and run by electricity. But there are no sufficient numbers of skilled

electricians in the market for repair and maintenance. So there is a high demand of electrician not only in construction sector but also in private cottage and small industry sector as well.

Nepal Government has given priority in electricity production. The 15th five year plan has expected:

- Capacity of hydropower to reach 5000 Mega Watts,
- 100% of population will have access to electricity,
- Electricity consumption per capita will reach 700 Kilo watts per hour
- Electricity leakage will have come down to 12.3 per cent.

The Labor market survey on “Analysis of Emerging Needs of Technical Human Resources in the Country by CTEVT in 2016 has projected annual requirement of 2700 electricians for private formal sector.

It is necessary to ensure the wiring, lighting and fixtures (electrical components) are as per code and work efficiently and safely. This can be done by only skilled electricians.

4. Batch plant operator Level -2

There are no Batch plant operators in the market. They are produced by the factory which produces the plant. If the person have basic mechanical, electrical and electronic concept of plant, s/he can operate other plants as well.

So, the batch plant operator could fulfill the present gap in the construction sector and there should be one plant operator in every project.

In present context new technologies are in ground and the construction and industrial sectors are fast mechanized. For example, previously batching plants are operated manually by hand. But today there are sophisticated plant with high efficiency. They controls quality and are cost effective.

Well trained Batch plant operator will support in high production with quality finishing works and control quality. This will increase work efficiency and time effectiveness. They will also replace the currently working Indian plant operators. There is an employment opportunity in foreign countries as well.

The labour market survey conducted by CTEVT has a projected the requirement of 2500 plant operators.

5. Excavator operator

Level -2

Construction sector is mechanized. Right from the bed preparation, excavators are used. There are very less license holder skilled excavator operators in the country. Every project has at least one excavator. These excavators are even sophisticated one with more advance features. There are excavators with remote control, data processing facilities.

The excavator operators completing the training and having experience of few years has an opportunity to operate (drive) other heavy equipment as well. The opportunities are in local and provincial government, private companies (entrepreneurs) and in foreign countries as well.

The existing excavator operators do not have basic knowledge and training. They are of assistant level and are learning by doing.

Likewise, the projects are facing problems in maintenance of excavators at field. As the existing excavator operators are unskilled ones, they could not perform maintenance work. So, the skilled repairer (Mistry) needs to be called from the city which results the high maintenance cost. Hence, to fulfill this gap, every project need at least one skilled excavator operator. The government has given first priority for road construction. The local government or the provincial government has owned at least one excavator for local development. But there are lack of skilled excavator operators.

Small and medium entrepreneurs also own the excavators. They use these excavators either for foundation excavation, mat construction or rent to contractors. Maximum use of these excavators save time and they are cost effective.

Hence, to increase the productivity, save time, repair and maintenance of excavators at site, the infrastructures projects has a high demand of skilled excavator operators.

6. Welder

Level -2

After the earthquake in 2015, new technology is being introduced and the building construction works are mechanized. Timber and woodworks are replaced by metals like black pipe, square pipes etc. They are used in construction of residential and public buildings, high rise buildings, trusses, heavy equipment etc.

Every projects and industries own different types of tools, equipment and plants. Most of the projects are in remote areas. But due to the unavailability of the skill technicians, they are facing problems in general repair and maintenance (welding) of basic tools, heavy equipment and plants. So every project should hire at least one skilled welder having knowledge and skills of welding different components.

In value chain business, the building elements (such as grill for windows) are supplied by small industries (grill industries). In grill industries, welding is the main work. There are different types of welding (iron welding, steel welding etc.) and different welding rods are used accordingly.

Hence, knowledge and welding skills are very much required in grill making, truss making, even in bed making for private use etc. But there is no welders in the market having such knowledge and skills of welding. Hence, there is high demand of welders in private and small industries.

7. Scaffolder Level -2

In every sector like building construction, bridge construction, there is an important role of Scaffolder. For construction works like bridge construction, building construction, scaffolding needs a special techniques. Failing to perform the correct scaffolding work, it may result to accident. So, for safety purpose the well trained Scaffolder are required.

In high rise building construction, new technologies in scaffolding is emerging which can be learned through training. Likewise, in infrastructure projects, use of truss bridges are increasing. But there are examples of truss bridges which are failed during erection. Accident took place due to the inappropriate scaffolding works. It needs right and correct technologies of scaffolding to prevent such accidents. So there is a high demand of Scaffolder having knowledge and skills in new technologies of scaffolding works.

Construction Industries with projects with capital less than Rs. 5 crores are registered under FNCSI. In such projects ply is used for formwork and MS tubular pipes are used for scaffolding which needs special techniques. With special training, the literate people can also perform quality scaffolding work. It does not need high education and after completion of the training there is an opportunity in the country and abroad.

8. Carpentry and Interior decorator: Level -2

The job of carpentry and interior decorator includes making furniture, wood carving, interior decoration and other fixtures in building, hotels, banks etc. Whereas the job of form worker is to place formwork prior concrete casting. In changing context ply board are used for the formwork. The carpentry and interior decorator can place formwork prior casting whereas the form worker cannot make furniture, wood carving and interior decoration works. Hence, the form workers are replaced by the carpentry and interior decorators and are the most demanded human resource in construction sector.

Being wood as a basic construction material it is used in all construction projects. As wooden door and window frames are replaced by aluminum, wood are used for making furniture and decorative works only.

Hence, in changing context, there is an increasing trend of use of wood carvings for interior decoration. Likewise, use of new design and technologies in furniture and fixtures are increasing in private and public buildings, restaurants, banks and other organizations. There are lots of Indian carpenters working in this sector. So, there is high demand of skilled carpentry and interior

decorator not only for making furniture and other fixtures but also for decorative wood works. The labor market survey conducted by CTEVT has a projection of requirement of 10000 carpenters.

9. Aluminum Fabricator: Level -2

After the earthquake of 2015 the trend of using light weight building materials has increased. So, the people started to use aluminum instead of wooden door and window frames. Out of 10 buildings, 7 buildings has started to use aluminum door and window frames. With this context there are more than 1200 small aluminum industries (registered and not registered) in the country. These industries has started to import the aluminum from other countries and they need qualified aluminum fabricators. But due to the unavailability of such human resource in the market, many Indian workers are employed in these industries.

In modern technology - Aluminum is the most useful material. It is light, durable and cheap and can be used repeatedly. They are used in partition to save space and time. Aluminum is also used in scaffolding, site camp, high rise buildings etc. In high rise buildings the main role of aluminum fabricators is to make scaffolding, door and windows etc.

The experts has introduced new building designs using aluminum elements and accordingly building construction fashion is changing in urban areas. The box design in housing colony, aluminum partition in office, bank and restaurants are the examples. In change context the quality work needs to be delivered in short time period. Hence, there is a huge demand of qualified and skilled aluminum fabricators in the country who can deliver the works in short given time period.

If we look at the data, hundreds of municipal building drawings are approved in the valley. These buildings have aluminum elements such as doors and windows, room partitions etc. So the aluminum industries are increasing in local level thus by demanding qualified and skillful aluminum fabricators.

10. Plumber: Level -2

Plumbers install and repair pipes that supply water and gas to, as well as carry waste away from, homes and businesses. They also install plumbing fixtures such as bathtubs, sinks, and toilets, and appliances, including dishwashers and washing machines.

Installation of hot and cold water system in private and public buildings are in increasing trend. All the pipelines must be connected correctly without leakage and must be tested prior to be concealed.

But there are very less plumbers who have idea about estimating the materials required, selecting right size of pipes and fittings, installation of drinking water system, waste water system and drainage system. Poor connection of pipes and accessories in the drinking water, waste water and drainage systems lead to leakages which results high cost in repair and maintenance. Many times it becomes difficult to find a skilled person for maintenance, unless you know the skilled persons personally.

So there is a high demand of competent plumbers having knowledge about selection of right size of pipes, fittings and installing hot and cold water system, waste water and drainage system including repair and maintenance work.



TOURISM SECTOR OCCUPATIONS (Agreed List):

SN	Name of occupation	Desired level
1.	Hotel Maintenance Technician	Level-2
2.	Inn-Keeper	Level-3
3.	Trekking Guide	Level-2
4.	Tourist Guide	Level-3
5.	Tourist Vehicle Drive	Level-2
6.	Nepalese Cuisine Cook	Level-2
7.	Climbing Guide	Level-2
8.	Rafting Guide	Level-2
9.	Assistant Airlines Maintenance Technician	Level-3
10.	Spa & Wellness Masseuse	Level-2

D. OCCUPATION DESCRIPTION

1. Hotel Maintenance Technician Level-2 (Assistant Hotel Maintenance Technician)

(Hotel Maintenance Technician keep all equipment in good repair with a minimum of downtime by providing day-to-day maintenance of the large, medium, small hotels, homestays, resorts, family run lodges. Carryout Complete maintenance work i.e. Electrical, Plumbing, Air conditioning, carpentry, masonry, painting on a timely basis by following hotel's standard operating procedures.)

Hundreds of unregistered hotels & accommodation providers are operating their business and offering their services to the domestic and international tourists across the country. As per Tourism Statistics 2019 MoTCA, there are 1289 star to tourist standard hotels and 389 homestays registered with the government of Nepal. Recruitment of qualified, experienced & designated maintenance technician of their expertise (i.e. Electrical, Plumbing, Air conditioning, carpentry, masonry, painting etc.) are general practice of 3 star and above standard hotels and they can afford it. However small hotel, lodges, homestays and family running hotels are managing their maintenance services needs by obtaining maintenance services from outsourcing companies/professionals on monthly/annual contract basis generally 10000 rupees per month plus approximately 700 rupees per visit charge or on call payment basis generally 1000 rupees per visit and end up paying huge amount of money to the service provider then having their own multi skilled maintenance technician. The reason behind relying maintenance service with outsourcing service providers/professionals by smaller hotels are largely connected with their operational cost limitations and unavailability of multi skill maintenance technician in the labor market. This seems to be easy approach for the small hotelier but in practice they are often facing

problem of promptness in service delivery besides injecting significant amount of money for maintenance services with the outsourcing service providers/professionals. To minimize and mitigate this common problem facing by most of smaller hotels, lodges, homestay and family running hotels, recruitment of multi skilled maintenance technician as fulltime employee can will ease employer's problem and concern, reduce expenditure and save ample amount of money and time at the same time it expedite service delivery and creates thousands of employment opportunities for a skilled maintenance technician in the hospitality industry.

2. Inn-Keeper Level-3 (General Hotel Management Technician)

(Inn-Keepers are responsible for keeping the smooth operation of their establishments efficient and profitable. Their roles vary depending on the size and type of Inn, hotel, bed & breakfast, lodges, homestays & small and family run hotels. This involves greet & interact with the guests, managing staffs, greet guests, check in and out guests, make and serve breakfast, clean rooms, answer phone calls, reply to emails, maintain hotel and guest account and make sure that all aspects of the guest's stay are satisfactory.)

According to Nepal Tourism Statistics 2019, MoTCA, there are 1151 tourist standard hotels and 389 homestays are registered with the government of Nepal offering 31887 beds across the country. On the top of that few hundreds of unregistered medium sized hotels, highway motels & different types of accommodation providers are operating their business and offering their services to the domestic and international tourists across the country. Predominantly small hotels, lodges & homestays are family running businesses are self-employment generation in nature where family members are engaged in different roles & responsibilities to serve their guests. Mostly small hotels and homestays offers limited service and product as the hotel/homestay owner themselves involve in serving their guests with minimal knowledge of every aspect of their business. According to Hotel Professional Federation Nepal HPFN, mostly smaller hotels/homestays offers bed and set breakfast services with some extended service of offering set lunch and dinner for their guests. In-fact the Inn-Keeper is one man show occupation in which one has to perform as the owner of small hotels/homestays perform their duties as an owner/manager, receptionist, accountant, housekeeping/cleaner, maintenance, waiter and cook in another words it can be termed as doorman to chairman. Be it larger hotels where number of employees deputed to serve the guests or smaller family run hotel/homestays where single person is offering various services, the main objectives are same which is to cater and satisfy the guests by providing the best possible services. Smaller hotels/homestays are commonly running by family members which creates self-employment opportunities have limitations (financial/practical) to recruit skilled professional employee rather owner/family members of small hotels/homestays prefer to educate and train themselves by attending various multi skill training of hospitality industry to upgrade their product and enhance their service standards to their guests. The opportunities are even widening as 200 new locations to be featured in touristic destinations by Ministry of Culture, Tourism & Civil Aviation (MoCTCA) in their list across the country with the aim to develop the physical infrastructure of these destinations for promotion of tourism. With the expansion of new tourism destinations, the new hotels and motels, restaurants and lodges are bound to proliferate and employment for the Innkeepers is expected to grow gradually. Increasing

business travel and domestic and foreign tourism will drive employment growth in this line of profession. If the owner/family members of small hotels/homestays are skilled in their occupation they will not have to deal with human resources issues with their business. It creates employment opportunity within their own business for the owner investors in one hand and in the other hand they will also have opportunity to make profit as they invest and work for their own business.

3. Trekking Guide Level-2 (Assistant Trekking Guide)

(Trekking Guides are responsible for the day to day itinerary, safety, education and entertainment of the tourist group. They are expected to work to a high level of customer service in line with company standards)

Nepal is known as mountainous country and globally recognized as destination of trekking and expedition. According to Nepal Tourism Statistics 2019, in the year 2019, Nepal recorded highest ever tourist arrival of 1197191 by air number could go up to 1.6 million unrecorded Indian tourist visited Nepal by land. Out of almost 1.6 million tourists 16.52 percent i.e. 197786 tourists did trekking and mountaineering activities across Nepal. As per the government rules, the trekking and mountaineering activities has to be formally organized by government registered trekking & expedition companies/agencies (2764, NTS 2019, MoTCA) involving highly professional government licensed trekking guide (17625, NTS 2019, MoTCA). Though there are almost twenty thousand licensed trekking guide working in the adventure industry (Trekking Agent Association of Nepal TAAN), availability of desired skilled and proficient trekking guide is yet another challenges facing by the industry as the adventure activities are seasoned based activities. In most situation, trekking & expedition operators are compelled to book the trekking guide 3-4 month in advance risking their investment, besides being not sure whether the tourist confirms their booking or not. Considering the increasing trend of tourist arrival and foresee the government prediction Nepal's tourism industry is aiming to cater 2 million tourists in upcoming years so as proportional increment of the tourist in trekking and expedition is expected. It will not only increase number of tourists but create business opportunities for private sector and job opportunities for job seekers. Simultaneously it will be great challenges for the trekking expedition companies in terms of full filling skilled human resources (trekking guide). To fulfill the demand of skilled trekking guide most trekking companies are providing on the job training like they depute junior guide/staff with senior trekking guide for the training for which huge amount of money is being invested to train the staffs. Producing trekking guide with occupation skill standard demanded by the industry will benefits the employer as they can recruit and depute directly in their business and in the other hand job seekers will have the opportunity in finding job and perform better from the day they recruited. Likewise it will compliment government and private sector's efforts of training process and modality approach from conventional to private sector friendly subsequently address current and future need of trekking guide.

4. Tourist Guide Level-3 (Assistant Tourist Guide)

(Tour guides work in the travel industry, giving guided tours to groups of visitors. They are experts on the history of the location and offer their tour groups interesting or enlightening information about points of interest at nature attractions, historic sites, museums, scenic locations, and other travel destinations. Guides may give walking tours, bus tours, or even lead river tours on a boat. Often hired by visitors' bureaus or travel companies, tour guides are typically residents of the region in which they give tours.)

Tourism has become one of the main income sources for many developing countries like Nepal. Nepal has great potential to become a top destination for tourists as the nation is famous for its snowcapped mountains, abundant flora and fauna, exciting trekking routes and rich cultural and religious diversity. According to Nepal Tourism Statistics 2019, in the year 2019, Nepal recorded highest ever tourist arrival of 1197191 by air number could go up to 1.6 million unrecorded Indian tourist visited Nepal by land. According to government statistics, out of almost 1.6 million tourists 83.48 percent i.e. 999405 including free independent travelers (FITs) tourists during their visit in Nepal were engaged in food, excursion, touring, sightseeing like activities and contributed significant foreign currency in the national economy. According to National Tourism Statistic Survey 2019, published by Ministry of Tourism, Culture & Civil Aviation MoTCA, there are 3680 registered tour operators and travel agencies engaged and involved in organizing touristic activities in Nepal. The backbone occupation vigorously involved in successfully and professionally organizing touristic activities are professional, highly knowledgeable licensed Tour Guides carrying different language skills which is 4200 in numbers according to National Tourism Statistic 2019. There are huge demand of professional Tour Guide of different language skills as tour operators are catering larger tourist group from Asian, European, American and Latin American countries. Normal practice in organizing tour and sightseeing activities a highly professional guide can professionally lead the group of 20 tourists if the number exceed requirement of equally competent guide is required additionally in order to successfully organize touring and sightseeing activities to cater the tourists. According to Nepal Association of Travel & Tour Operator NATTA) industry is facing problems for not easily available desired skilled tour guide as they are available in limited numbers only and most cases they are pre-booked 3-4 months in advance that indicates huge demand of tour guide. Looks likely tourism industry will have to face this problem in upcoming years even more as the trend of tourist arrival in the country is increasing. As the tourist arrival increased and aiming to cater 2 million tourists in the country, obviously it attract investors (private sector) for more investment and creates employment. This will be win win situation for investors as they can make profit out of it, skilled human resources will have plenty of job opportunities and government will collect taxes and foreign exchange that helps minimization of trade deficit. As travel & tour sector will have to cater more tourist in future with limited human resources (tour guide), it is dire needs of the hour and future to make avail sufficient number of tour guide carrying industry desired skill standards to perform their duties and responsibility to satisfy their guests.

5. Tourist Vehicle Driver Level-2 (Assistant Technician)

(Tourist Vehicle Driver accompany tourist right from gateway until their departure. They welcome, greet the guests, load unload guest's luggage, provide safety information, maintain and clean tourist vehicle, liaise with concerned stake holders to make memorable visit of the tourists.)

Transportation is a major component of tourism industry and the role of tourist vehicles is obviously very important to cater to the vehicle needs of the tourist right from the airport (the gateway) of their access into the country to all other destinations their itineraries bring forth till their departure. The captain of tourist vehicle is obviously the skilled professional tourist vehicle drivers who are in mist situation assisted by co-worker. Primary responsibility of the tourist vehicle driver is to provide standard and quality services to the valued visitors and to take them safely in their desired destination. According to Nepal Tourist Vehicle Association (NTVA) there are about 13000 plus tourist vehicle drivers employed in travel & tours, trekking companies, hotels, airlines, independent and tourist vehicle companies are providing services in Nepal. Increasing trend of tourist is creating employment opportunities in the tourism sector so as demand of trained and skilled tourist vehicle driver is rising. In the year 2019, some 932 vehicle driver were trained and received certificate of Hospitality Training for Tourist Vehicle (Nepal Tourism Statistics 2019, MoTCA) which has been great support for the industry in terms of skill enhancement of the tourist vehicle driver. In order to fulfill current/future need of tourist vehicle driver and to provide quality services to the tourists and to create employment opportunities for vying tourist vehicle drivers, private sector should encourage training conduction and development of Industry Occupation Skill Standard (IOSS) which will produce proficient tourist vehicle driver who can directly absorb in the industry.

6. Nepalese Cuisine Cook Level-2

(Cook are the mainstay of the food service industry. They work in different types of kitchen settings where their main task is to plan and cook different types of food. They usually work in places like restaurants, bars, hotels, casinos, cafeterias and other food-serving establishments. In other words a cook is someone whose responsibility it is to prepare and cook various appetizers, entrees and desserts of varieties of national, international, regional & ethnical cuisine; to ensure the ingredients used are fresh; to make sure the work area is clean; and to have any necessary equipment readily available. Cooks prepare and follow recipes, mix ingredients, and prepare many types of foods, using various cooking methods, such as frying, braising, steaming, baking and broiling.)

Cooks with their dedication and hard work can make their way up to chef from entry-level roles. Overtime they can shift to many other wings according to their choice like Continental, Indian, Chinese, and Nepali cuisine. Hotels in Nepal is a growing industry. From small cafes, resorts, food chains, five-star hotels, to international franchises, the field is on a growth escalator. In this line of industry, interaction with the various service providers quote on lack of skilled workers and labour migration of skilled workers to abroad (in particular cooks in hotels and restaurants). Also experienced cooks are welcomed with an attractive salary and tendency to switch job is at large. There is a high scope and demands for cook in Nepal. Job opportunities for Cooks are expected to be plentiful in upcoming years as the trend of increasing number of domestic and international tourist's rapid movement is expected in the post COVID situation. In addition to restaurant of registered hotels, resort, lodges & homestays there are approximately 2100 registered restaurant, bars, fast food outlets and cafes are offering variety of cuisine across the country in Nepal. Huge investments in this sector is done by private sector government (Department of Industry) statistics indicates there are 716 registered restaurants have made investment of 30 million rupees and above. It clearly indicate that restaurant business is lucrative business in terms of investment which creates wider employment opportunities. Cook occupation is very crucial and mainstay of hotel & eatery business. Recent increment of tourist arrival, rapid movement of domestic tourist

along with their increased disposable income are encouraging peoples to dine out so as attracting investors to invest in this sector. Touristic hobs, cities are full of hotels and restaurant where locals and professionals have abundance of job opportunities in the hotels and restaurant. Be it small or big hotels it has to have a restaurant which creates various job opportunities including a cook. Whether a hotel or homestay or Bed & Breakfast or restaurant in any geographical location, it demands a proficient cook who can cook variety of food for their guests. According to Chef's Association Nepal (CAN) there are 1200 plus qualified Nepalese Cook (Chef) registered with them and working in hotel, restaurant across the country. Comparing the availability of qualified cook with investment trend in this business, by private sector, employers are often facing the challenges of recruiting skilled cook and those retaining for long term as its being highly demanded occupation in and outside the country. Small hotel restaurant operating outside Kathmandu valley and other touristic hob cities encountering problems of high turnover of cook hence they are compelled to recruit under skilled human resources as a cook who cannot perform up to the industry standard. Those unemployed but trained job seeker with certificate in hand applying for cook's job often turned out to be under skilled. They cannot perform their duties as desired by the occupation itself and expected by the employers. Hence employers are forced to train them for longer period. Interestingly once they understand their job and starts performing they quit the job and move elsewhere. Larger hotels and restaurant also faces this problems sometime but smaller hotels are facing this problem everywhere most of the time. Cook being highly demanded occupation need to perform their duty as per the need of the employer and the industry occupation skill standard. This will be beneficial for the employer as they will have skilled qualified cook can reduce kitchen wastages and minimize operational cost of employers and ensure delivery of quality and consistency in service offered. Likewise employee will have wider job opportunity as they can prove their performance from the very beginning which is ladder path for their future career development.

7. Climbing Guide Level-2 (Assistant Climbing Guide)

(Climbing Guide is a trained professional mountaineer who guides climbers (trekkers) above 5500 Meter up in a mountain. Climbing Guide also assist the climbing party with recruitment of porters and other staff, control of porters, local purchase of food. Climbing Guide is to solve any problem that may arise to the best of his ability while ensuring that the climbers are following with specified rout. They also ensuring proper disposal of waste materials and compliance of terms of their permit including safety of the climbers (trekkers).

Naturally gifted landscape is being an important product for Nepal in capturing opportunities to promote adventure tourism even in the current situation of COVID-19, Nepal has been able to attract significant number of group of expedition that reflects Nepal is a safe destination to the world. No doubt Nepal is known as mountainous country and globally recognized as destination of trekking and expedition. According to Nepal Tourism Statistics 2019, in the year 2019, Nepal recorded highest ever tourist arrival of 1197191 by air number could go up to 1.6 million unrecorded Indian tourist visited Nepal by land. Out of almost 1.6 million tourists 16.52 percent i.e. 197786 tourists did trekking and mountaineering activities across Nepal. In year 2019, out of 1692 mountain climbers from 82 countries, 985 Summiters successfully summited 71 peaks and mountains and generated royalties of 5077950 US Dollar. As per the government rules, mountaineering expedition activities has to be formally organized with government permits by registered trekking & expedition companies/agencies (2764, NTS 2019, MoTCA) involving highly professional licensed climbing/mountain guide (10830, Nepal Mountaineering Association NMA).

Though there are almost 11 thousand climbing/mountain guide working in the adventure expedition industry, easy availability of desired skilled and proficient climbing guide is yet another challenges facing by the industry as the adventure activities are seasoned based activities. In most situation, expedition operators are compelled to book the climbing guide 3-4 month in advance risking their investment, besides being not sure whether the group confirms their expedition which is subject to government approval. Considering the increasing trend of tourist arrival and foresee the government prediction Nepal's tourism industry is aiming to cater 2 million tourists in upcoming years so as proportional increment of the tourist in trekking and expedition is expected. It will not only increase number of tourists but create business opportunities for private sector and job opportunities for job seekers. Simultaneously it will be great challenges for the trekking expedition companies in terms of full filling skilled human resources (climbing guide). Since climbing guide occupation is highly skilled and demanded and accredited occupation by the government high degree of professionalism & skill is required in performing their duties as they act as the ambassador of Nepal amongst expedition team. There are national and international training courses are offered for the climbing guide occupation. However employers are concerned about their occupation skill standards as they are compelled to hire assistant guide to support the expedition team which increases operational cost for the expedition operators. Producing climbing guide with occupation skill standard demanded by the industry will benefits the employer as they can depute directly in their business and in the other hand job seekers will have the opportunity in finding job and perform better from the day they have taken the job. Likewise it will compliment government and private sector's efforts of training process and modality approach to transform from conventional to private sector friendly subsequently address to fulfill the demand of current and future need of climbing guide.

8. Rafting Guide Level-2 (Assistant Rafting Guide)

(Rafting Guides meet and greet guests, load and prepare rafts, execute crash courses in rafting, give safety speeches and most importantly lead a safe and fun rafting trip. Some rafting trips can be overnight, so a rafting guide must have wilderness skills and know the terrain in the area. They are also responsible for the day to day itinerary, safety, education and entertainment of the guests.)

Rafting and kayaking (River Sports) has been very popular water based touristic activities amongst international visitors and young national and corporate domestic travelers. According to Rafting Association Nepal (NARA) most of the rafting activities are conducted in Koshi, Gandaki and Karnali rivers capturing its rapid flow of water. Besides being popular adventure activities like trekking & expedition, Nepalese rafting industry are also facing similar problems like shortages of skilled human resources. Rafting activities are also season based activities and various components (transportation, safety equipment, rafting gears, hospitality) are involved in organizing smooth, memorable and safe rafting and kayaking activities. Since rafting & kayaking are river based activities entertainment has to be done with following prescribed safety protocols. The center point of the rafting activities will always be highly professional, skilled and knowledgeable rafting guide. Referring to Nepal Tourism Statistics 2019 of MoTCA, there are 81 registered rafting agencies and 266 licensed river guides are organizing rafting & kayaking activities and leading the rafting group respectively. Lack of skilled rafting guide has always been challenges in the peak season for rafting companies as rafting guides are booked in advance. Tourism & Hospitality Educational Institutes like Nepal Academy of Tourism & Hospitality

(NATHM) are offering rafting guide training on routine basis however the number of licensed rafting guide has not been produced as expected by the rafting operators. Independent rafting companies and NARA itself organizing some occupational trainings to fulfill the shortages of skilled human resources. As the demand is increasing in rafting industry sizable investment is done and employment opportunities are created in rafting & kayaking sector for which Production of industry demanded occupation skill standard rafting guide will further mitigate human resource shortage problems for employer and open the avenues for aspirant job seekers for employment opportunities.

9. Assistant Airlines Maintenance Technician Level-3

(Airlines Maintenance Technician assist aeronautic engineers and carry out regular maintenance, defect rectification, aircraft avionics, electrical, electronic equipment, instrument maintenance, and base maintenance).

Government statistics shows there are 19 (9 Airlines + 10 Helicopters) domestic and 32 international airlines are operating their flight in Nepal (Nepal Tourism Statistics 2019, MoTCA). Various occupations involves in the smooth operation of aviation industry of which Airlines Maintenance Technician very important occupation that ensures safety of the aircrafts and carryout regular maintenance of airlines. According to the Airlines Operators Association of Nepal (AOAN), it is not as easy as glamorous it looks from outside, aviation industry has its own limitations and challenges. Some of its major the challenge are retention of its experienced skilled human resources and recruitment of skilled human resources as there has always been shortages of skilled human resources (pilots, crew, technician, ground handling). Airlines maintenance division is major part of aviation industry in which high degree of technically skilled human resources are always in need. Senior technician like aeronautic engineers, sub engineers are well trained and armored by their academic degree and relatively available in the job market. However airlines maintenance technicians or junior technicians are not easily available as they have to go through training which is normally being done by aviation industry on apprentice model. Nepalese aviation industry is in high demand of airlines maintenance technician and it will be more demanding as number of airlines companies are in process of adding their fleet in Nepal which creates employment opportunities to the skilled human resources. Airlines companies are outsourcing some maintenance technicians from neighboring countries which is limiting Nepalese citizen from employment opportunities and being challenging for the airlines operators and losing revenue. If we can recruit airlines maintenance technician carrying industry desired occupation skill standard huge revenue will be saved for the employer and door of opportunities will be opened for the aspirant employee.

10. Spa & Wellness Masseur Level-2 (Assistant Spa & Wellness Massage Therapist)

(Spa & Wellness Masseur massages customers and administers other body conditioning treatments for hygienic or remedial purposes: Applies alcohol, lubricants, or other rubbing compounds. Massages body, using such techniques as kneading, rubbing, and stroking flesh, to stimulate blood circulation, relax contracted muscles, facilitate elimination of waste matter, or to relieve other conditions, using hands or vibrating equipment.)

Spa & Wellness is rapidly growing business in Nepal that creates thousands of jobs. It is emerging as one of the highest revenue generating tourism product and very popular amongst tourists as it refers to medicinal tourism. It is not only popular amongst tourists but also becoming a lifestyle of

many Nepalese. Perception towards Spa & Tourism is changing as it was taken as expensive product in the past. Many countries including neighboring countries India, China, Bangladesh are generating huge revenue by promoting Spa & Wellness as medicinal tourism. Over a period of time, huge investment in Spa & Wellness business is done in this sector in Nepal. They are trying to encourage locals by making it affordable for each and every class of people by setting standards and maintaining levels. Almost all 5, 4 & 3 star hotels are offering Spa & Wellness service apart from number of large, medium & small independent spa & wellness centers are offering their services across the country that created employment for hundreds of spa & wellness professionals. Independent Spa & Wellness operators are organizing some in house occupational trainings to fulfill the shortages of skilled human resources. As the demand of is increasing in Spa & Wellness industry sizable investment is done and employment opportunities are created in Spa & Wellness industry sector for which production of industry demanded occupation skill standard Spa & Wellness Masseuse will further mitigate human resource shortage problems for employer and open the avenues for aspirant job seekers for employment opportunities.