A Report on

Occupational Skills Needs Analysis in the Catchment Areas of Seven TVET Institutions

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Acronyms and abbreviations

BBS	Bangladesh Bureau of Statistics
BIDS	Bangladesh Institute of Development Studies
BMET	Bureau of Manpower, Employment and Training
B-SEP	Bangladesh Skills for Employment and Productivity
BTEB	Bangladesh Technical Education Board
CBK	Chetona Bikash Kendra
CBT	Curriculum Based Training
CBTA	Curriculum Based Training and Assessment
CDL	Community Development Library
COEL	The Centre of Excellence for Leather Skill Bangladesh Limited
DCIs	data collection instruments
DTE	Directorate of Technical Education
EC	European Commission
EUD	European Union Delegation
FGDs	Focus Group Discussions
GDP	Gross Domestic Product
GOB	Government of Bangladesh
ICT	Information Communication Technology
ILO	International Labour Organisation
IPs	Industrial Productivity Services
ISCs	Industry Skills Councils
IT	Information Technology
KCSPL	Konika Consulting Services Pvt. Ltd.
KIIs	Key Informant Interviews
LFS	labour force survey
NEET	not in employment, education or training
NGOs	Non Government Organizations
NQF	National Qualification Framework
NSDC	National Skills Development Council
NSDP	National Skills Development Policy
NTVQF	National Technical and Vocational Qualifications Framework
OJT	on-the-job training
PWDs	Persons with Disabilities
RMG	Readymade Garments
SCDCs	Standards and Curriculum Development Committees
SDC	Swiss Agency for Development and Cooperation
SPSS	Statistical Package for Social Science
SSQ	semi-structured questionnaire

STEP	Skills and Technical Enhancement Project
SWAP	Sector Wide Approach
TOR	Terms of Reference
TSC	Technical School and College
TTC	Technical Training Center
TVET	Technical and Vocational Education and Training
VTE	Vocational and Technical Education

Executive Summary

Background and introduction

Bangladesh's economic growth (in terms of the level and quality of output) especially from its manufacturing sectors including textile and garments is substantial but increasingly constrained by insufficiently available skills. Overseas workers are considered very important to the country's economy, with their remittances constituting the largest source of foreign exchange. The demand for skills by overseas employers is also increasing significantly and that, if skilled workers can be provided, wage rates and remittances would increase. Industry generally holds the view that the quality and relevance of TVET programmes are inadequate. Business decisions are yet not dependent on specific types of TVET data and rather based on a generic need to understand the demand for skills from industry and overseas and to achieve better matching of the output of the TVET system with the demand for skills from the industry. Overall, Bangladesh's TVET system is still remaining 'fragmented' and 'disorganized' and that calls for a widespread need for improved management and responsiveness to the demand for skills.

Given the country context relating to the skills availability and shortages, Skills 21 Project for ***"empowering citizens for inclusive and sustainable growth"*** is recently being implemented jointly by the ILO & EU. The new skills development programme is expected to be building on the achievements of earlier EU-ILO initiatives and will continue to modernize the TVET system in Bangladesh. With a view to improve quality of the TVET and overall skills development system, facilitate improving access to and equity within the system through TVET model institutions, and to create an enabling environment through improved governance and management, the ILO-EU Skills 21 Project emphasizes on the establishment and operationalization of the seven TVET model institutions selected from all-over Bangladesh. These institutions are envisioned as to be the role models, used as a vehicle for service delivery for, and taking the lead in strengthening other TVET institutions. Taking into account the project objectives, obtaining an accurate picture of the labour market and employment opportunities becomes vital for a demand-driven TVET system. Therefore, a skills needs assessment and analysis is considered necessary to define the basis for training interventions and to facilitate undertaking key elements of a broader TVET system, from skills to job. The overall objectives of the research are to provide an occupational skill needs analysis that covers the catchment areas of the seven preselected model TVET institutions. The results are expected to be the basis for the development of relevant qualification packages and programmes for training delivery.

National TVET Policies, Strategies and Plans

Bangladesh National Education Policy 2010 envisions a society having quality education and skills to be able to accelerate the national development process, effectively compete with the emerging global technological advancement and eradication of poverty especially through expansion of technical and vocational education. ***The National Skills Development Policy (NSDP) 2011*** is a significant outcome of the TVET reform project earlier implemented by the government supported by the EU and ILO. The NSDP is a comprehensive policy instrument guiding skills development strategies and is intended to facilitate improved coordination of all parties involved in education and training in Bangladesh. This has provided the rationalization of instituting the ***National Skills Development Council (NSDC)*** as an Apex Body headed by the government (the Prime Minister) responsible for setting the national skills development agenda.

The NSDC is to introduce appropriate policy and set specific mechanisms to improve coordination of skills development across Bangladesh.

The ***Sixth Five-Year Plan*** of the government commits to expansion and modernization of TVET to meet the market demand by improving links between training and job market. The Plan also aims at getting improved quality and relevance of TVET and thereby to increase equity in access to TVET considering market demand, and to enhance employability of the TVET graduates. The subsequent ***Seventh Five Year Plan*** has addressed the skills constraints for acceleration of economic growth of the country. Under the NSDP 2011 the ***National Technical and Vocational Qualifications Framework (NTVQF)*** has been designed to improve the quality and consistency of nationally recognized skills qualifications which has been one of the most important building blocks of the TVET reform project. Another key outcome of the current skills development reform effort is the establishment of the ***Industry Skills Councils (ISCs)*** till yet for twelve business sectors[1] to help strengthening linkages between industry and the national training system. It is aimed to ensure undertaking a tripartite approach to continuously improving the skills development system by bringing employers, workers and government representatives together.

Approach and Methodology

The research is conducted using ***a mix method approach*** combining quantitative and qualitative methods and data collection instruments to ensure appropriate data triangulation, and that the research is statistically robust, representative of targeted respondent groups and participatory. A combination of both is used to secure yielding a more complete analysis, and where they complemented each other. In collection and analysis of data, both primary and secondary sources are explored. ***Document desk review*** is used as a crosscutting tool that fits with both the type of methods. ***In-depth interviewing*** tool is applied as part of **quantitative** method through separate sets of semi-structured questionnaire surveys for different target groups. **Qualitative** methods are designed and used to facilitate respective respondent groups to draw and interpret occupational skills needs situation as well as views on those by their own to complement quantitative survey outcomes. The set of tools as part of qualitative method includes ***focused group discussion (i.e. FGD)*** and ***key informant interviews (i.e. KII)***.

The estimated sample size for the quantitative survey is 560 that reflect an appropriate confidence level (*i.e. 95% confidence level and an allowable error margin of +/-5% with an increased design effect of 1.4*). The finalized samples are distributed equally among the seven pre-selected TVET institutions and target respondents in their catchment areas (i.e. upazilas and district) ensuring adequate gender responsiveness of the respondents. The respondent groups are: i) 70 employers (69 male and 1 female), ii) 278 TVET graduates (127 employed and 151 unemployed) of them 162 male and 116 female, iii) 139 non-trained workers (98 male and 41 female), and iv) 59 TVET providers (45 male and 14 female) i.e. focal persons of the TVET institutions. A multi-stage stratified sampling technique is applied for the selection of survey respondents. For qualitative study, a total of 205 respondents (of them 124 male and 81 female) are consulted through 24 FGDs, and 26 key informants at various levels are interviewed. Professionally standard quality control protocol is adopted for data collection, EPI-info software used for data entry and SPSS/STATA used for data analysis.

[1]Twelve business sectors are: 1) Agro-food; 2) Ceramics; 3) Construction; 4) Furniture, 5) ICT; 6) Leather and Leather Goods; 7) Light Engineering; 8) Pharmaceuticals; 9) RMG & Textile; 10) Tourism and Hospitality; 11) Transport Equipment; and 12) Informal.

The research covers both the demand and supply sides of the existing labour market to assess and analyze the occupational skills needs. From demand side 70 industries i.e. employers, 127 employed graduates, 151 fresh and or unemployed graduates, 139 non-trained workers, and 24 ISC representatives of business associations are interviewed. While from supply side 7 focal persons of similar number of model TVET institutions, 52 focal from different other TVET institutions (include both government, private, and NGOs), and 6 officials of government line agencies are consulted.

Study Findings

A labour market snapshot

Bangladesh is experiencing structural changes on the labour market while many workers are leaving the agricultural sector entering the service and industry sectors. A majority of workers are still working in the informal economy characterized by inadequate earnings, low productivity and difficult conditions. The youth labour force participation rate is decreasing not only because of a rise in enrolment in secondary and tertiary education levels, but also of a worrisome increase in the proportion of young people not in employment, education and training, especially women.

Although the labour market is characterized by abundance of unskilled labour and skills shortages in transition to green economy. However, main greening shifts in the economy and the labour market have taken place strongly in renewable energy, but rather weakly in remaining other sectors. Factors accounted for such shortage of green skills include inadequate institutional support for training – mostly supply driven TVET system leading to skill mismatch and ongoing TVET reform has no green component, shortage of trainers, and inadequate job placement (i.e. an absence of active labour market policy measures and weak delivery) mechanism.

Employment opportunity

Only about 14.3% workforces presently employed are reportedly skilled since they are graduated from TVET institutes and thus certified by BTEB. Those are off the 42.9% skilled workers being trained from TVET institutes, but most having no certification from the BTEB. The remaining other workers are of skilled and semi-skilled with learning on the job, and unskilled with basic and/or with no education. An opportunity for workers with disability is found very limited. Many industries in the selected catchment areas face workforce shortage at various occupational levels. More interestingly, demand for skilled workers irrespective of their sex in all the areas is much higher than that of the semi-skilled and unskilled workers. This eventually implies strong future potentials for a greater employment opportunity of the TVET graduates with appropriate competencies. In contrast to the present level of average employment and workforce shortage among industries in the catchment areas the forecasted (added to the present) employment opportunities/demands for the next five years are indicated in the following table.

[In average person per industry]

Catchment areas	Sex of workers	Present Versus Forecasted (in addition to present demand) Workers Demand by areas, skill types and sex					
		Skilled workers		Semi-skilled workers		Unskilled workers	
		Present	Forecasted	Present	Forecasted	Present	Forecasted
Khulna	Men	3.4	14.3	Nil	12.1	Nil	24.7
	Women	23.7	43.8	Nil	22	Nil	40
Bagerhat	Men	4.3	5.6	1	7.7	5	7.8
	Women	6.2	12.3	Nil	6.5	Nil	11.3
Sylhet	Men	9.5	16.9	10.4	22.8	7.6	12
	Women	7	5	4	24	10	22.5
Gaibandha	Men	3.9	6.5	2.2	12	5	10.4
	Women	8	6.5	Nil	2	Nil	9.5
Jamalpur	Men	8.3	66.3	4	44.6	1	16.2
	Women	8	69	6	82	2	17
Rangamati	Men	11.6	8	Nil	10	Nil	6.7
	Women	20.6	17.5	Nil	15	Nil	10
Feni	Men	103.4	91.3	6.5	79	11	162
	Women	44.3	22.3	1.7	15.5	Nil	100

Discrimination and stereotypes faced by women and PWD, and ways to address them

Discrimination and stereotypes are almost common in the areas that includes a) neglects, b) wage discrimination between men and women workers, c) teasing and sexual harassment, etc. for women, and mostly neglects, restrained accessibility and wage are for PWDs. PWDs are mainly having less accessibility to employment, since their working ability are mostly undermined by the employers. The area-wise existing discrimination and stereotypes that women and PWDs face in their everyday lives provides a grave indication; while most respondents are found to be unaware of the ways and means to address the issues. There is only overcoming strategy suggested is that to undertake awareness raising activities among the employers (those who are unwilling to recruit). Apart from it, clear public policies and strategies are suggested to be in place and functional to make employers aware and legally bound to provide equal opportunities for all.

Skills needs analysis

The types of occupational skills available and required for employment in the present labour market are varied among the catchment areas. However, it does not find specific skills requirement for

disadvantaged except women. Green skills and entrepreneurships are yet not emphasized in the industries. The catchment area wise occupational skills requirements (current and future potentials), as demanded by the research respondents are presented in the detailed report, and consolidated findings are presented in the table below.

Industry Sector and Skills needs	***Industry Sector*** and Skills needs
Agro Food Processing:	***RMG and Textiles:***
1. Dairy Firm Management	31. Sewing Machine Operation
2. Food Processing and Preservation	32. Supervising
3. Rice Processing	33. Weaving (textile)
4. Puffed and Flattened Rice Processing	34. Quality Checking
5. Baking (bread and biscuits)	35. Color Master (Dyeing)
6. Food Grain Machine Operation	***Transport Equipment:***
Construction:	36. Driving Automobile
7. Electrical House Wiring	37. Automobile Mechanics
8. Plumbing and Pipe Fitting	***Tourism & Hospitality:***
9. Welding and Fabrication	38. Housekeeping
10. Auto CAD	39. Food and Beverage Service
11. Aluminum Fabrication	40. Hotel Management
12. Dairy Farm Management	41. Catering
13. Food Processing and Preservation	42. Travel and Tourism Operation
14. Civil Construction	***Informal:***
15. Building and Architecture Drafting	43. Mobile Phone Servicing
16. Tiles Setting	44. Sofa, Rickshaw Seat (with coconut fiber) Making
17. Lift Operation	45. Dressmaking and Tailoring
Furniture manufacturing:	46. Block, Batik and Printing
18. Carpentry	47. Beautician (beauty care)
19. Lacquer Polishing	48. Fashion Designing
20. Wood Working	49. Fish Culture and Breeding
Information Technology (IT):	50. Jute Bag and Box Making
21. Computer Application	51. Handicrafts (bamboo, care & other) production

Industry Sector and Skills needs	***Industry Sector*** and Skills needs
22. Graphic Design and Multimedia	52. Solar Technician
23. Web Design and Development	53. Poultry Rearing and Firming
24. IT Support Technician	54. Candle Making
25. Outsourcing	55. Embroidery Works
Light Engineering:	***Leather & Leather Goods:***
26. Refrigeration and Air Conditioning (RAC)	56. Machine Operation (footwear)
27. General Mechanics	***Pharmaceuticals:***
28. Machine Tools Operation (Machinist)	57. Medical Technology (Pathologist)
29. CNC Machine Operation (Lethe)	
30. Consumer Electronics	

Upon the choices of demand by different categories of respondent the research finds a total of 57 varieties of occupational skills, most of their availability and requirements are found to be under the 11 out of 12 ISCs already established under the NSDC; while a few skills identified that falls under other industries like jute, chemical, and healthcare.

About 37.3% TVET institutions select their training programmes based on job market survey, 59.3% select programmes based on local labour market needs analysis, 35.6% select programmes based on informal discussions with relevant industry associations, and 33.9% adopt programmes that come from relevant government decisions. While 59.3% TVET providers implement programmes targeting domestic and abroad job markets, 57.6% target employment opportunities within and adjacent districts, 30.5% target particular industry sector (used to call them demand driven), and the top group (61%) considers opportunity of self-employment first. These provide a mixed and volatile scenario on how and what basis the TVET institutions select their programmes. The overall summarized occupational skills needs with weighted average scores (assigned by all five categories of respondents i.e. employers, employed graduates, unemployed/fresh graduates, non-trained workers and the TVET providers) are presented by catchment area in the detailed report (section 5.4.3).

Considering all these issues and concerns relating to ensuring the quality and competency based vocational education and training programmes, the summarized as well as prioritized occupational skills needs by catchment areas and then the seven top priorities occupational skills needs in a gross are presented hereunder.

ISCs	No.	Occupational skills needs	Ranking of skills needs by areas						
			FEN	RAN	JAM	GAI	SYL	BAG	KHU
Informal	1	Dressmaking and Tailoring	1	2	3	4	3	3	1
	2	Mobile Phone Servicing				6	7	4	5
	3	Block, Batik and Printing			6				4
	4	Beauticians (beauty care)		5					
	5	Handicrafts (bamboo/cane/others)			5				
	6	Sofa, Rickshaw seat making						6	
Information Technology	7	Basic Computer Application	2	1	1	1	1	1	2
	8	Graphic Design and Multimedia		3	2	7			3
Light Engineering	9	Refrigeration & Air Conditioning	4						
	10	General Mechanics						7	
	11	Machine Tools Operation-Machinist	6		7			5	
Construction	12	Electrical House Wiring	3	4	4	2	2	2	6
	13	Plumbing and Pipe Fitting	5						
RMG & Textile	14	Sewing Machine Operation				3			7
	15	Weaving (textile)		7					
Transport Equipment	16	Automobile Mechanics	7				6		
	17	Automobile Driving				5	4		
Tourism & H.	18	Catering					5		
Furniture	19	Carpentry		6					

While the list of top ranked seven occupational skills (overall) along with respective weighted average scores is presented below.

Rank	Occupational Skills Need identified	Industry Sector	Gross weight (n=546) assigned	
			n	%
1	Computer Application	Information Technology	289	52.9
2	Dressmaking & Tailoring	Informal	198	36.3
3	Electrical House Wiring	Construction	154	28.2
4	Graphic Design and Multimedia	Information Technology	90	16.5
5	Mobile Servicing	Informal	74	13.6
6	Sewing Machine Operator	RMG & Textile	64	11.7
7	Automobile Driving	Transport Equipment	59	10.8

Institutional capacity of the selected TVET institutions

The capacity assessment of the seven selected model TVET institutions done using a set of criteria are: **(a)** academic-training background and preparedness; **(b)** Human Resources (HR) strengths; **(c)** infrastructural and student accommodation facilities; **(d)** local industry linkages (for dual apprenticeship programmes); **(e)** perceived primary capacity to address demand-driven occupational skills needs, and **(f)** governance and other cross-cutting. The indicative summarized results of the assessment per catchment area based on the set of above mentioned criteria (**a – f**) are as below.

[While an institution obtains 'high/++' score against all 6 criteria, the score becomes 6X2=12]

Criteria ref: as above	Capacity status (Score out of 12) of the assessed seven model TVET institutions						
	MPI Khulna	IMT, Bagerhat	PTI, Feni	BS-Kaptai PTI	TSC, Sylhet	TSC, Jamalpur	TTC, Gaibandha
a)	Medium	Medium	High	Medium	High	Medium	Medium
b)	High	Medium	High	Medium	High	Medium	Low
c)	High	Medium	High	High	Medium	Low	Medium
d)	Low	Low	Low	Low	Medium	Medium	High
e)	Low	Low	Medium	Medium	Medium	Low	High
f)	Medium	Medium	Medium	Medium	Medium	Medium	High
Score:	6/12	4/12	8/12	6/12	8/12	4/12	8/12

High (++); Medium (+); Low (none)

Possibility of business development services

Apart from physical facilities, TVET institutions provide financial supports/grants/stipends and technical assistances mainly for job placement. They also provide supports for local entrepreneurship development based on supports as asked for (not playing any proactive role). Overall 41.2% TVET institutions provide

limited stipend to the talented but poor students. The volume (i.e. amount) of such stipend supports mainly depend on the availability of funds being allocated by the government and/or any other donors, and allocations vary at large by financial years, institution types, and areas. The idea on the amount of these financing supports is yet not known, but generally the availability of funds is very limited. Alongside, about 12% TVET institutions provide grant supports and 7.8% provide loan/credits to their graduates mainly for the purpose of self-employment; but they do not attempt of or facilitate graduates in pursuing and exploring any local and/or national financing sources (i.e. Banks, NGOs and any other financing institutions) for this purpose. The support services are quite limited, and even these are not so far accessible for the IPs or migrant workers. TVET providers other than those are under the Ministry of Education extends small-scale grant supports for the youth following their graduation from the respective courses, includes Directorate of Youth, Women Affairs, Social Welfare and Oversees Employment. The research could not exploit generation of knowledge about the youth graduates' accessibility to and availability of grants/credits especially for migrant workers from the Oversees Welfare and Employment Bank established by the government. Whatsoever, the available supports are likely to be facilitative towards enhancing business development prospects locally – either those are person or association/organization driven, but are yet not planned and implemented at scale.

Constraints/barriers to improve the quality of training programmes

From their own perspectives, about 67.8% TVET institutions have sufficient number of Trainers, and 74.6% have sufficient student accommodations (i.e. classrooms, labs etc.) for providing quality training programmes. About 56% institutions have any forms of industry linkage which they presently use and/or can potentially use for apprenticeship programmes. However, like TVET providers industries/employers and graduates also self-assessed key constraints and barriers to ensure quality training programmes from their own perspectives, as stated/listed below.

Key constraints/barriers to ensure quality training programme that are identified from the		
TVET providers' perspective	**Industry/employers' perspective**	**Employees' perspective**
a) Inadequate laboratory tools and equipment **b)** Inadequate practice materials **c)** Outdated machines and training facilities **d)** Outdated course curriculum **e)** Non-industry experienced Instructors/Trainers **f)** Traditional training delivery among the trainers about modern technology **g)** Lack of knowledge among institutions about occupational skills demand	**a)** Lack of modern training with upgraded curriculum and equipment; **b)** lack of resources i.e. financial and technical to establish modern training facilities; **c)** Typical training system emphasizing only on the course completion but not on the quality that attracts employers; **d)** Course design and content selected are not based on market demand; **e)** Lack of government initiative to monitor and follow-up the TVET performance, etc.	**a)** Lack of and insufficient modern training equipment/learning resources/aids; **b)** Lack of teaching skills among trainers; **c)** Insufficient space in the training room; **d)** Less time for practical classes; **e)** Large group formation for practice; **f)** Insufficient instructors; **g)** Non-use of multimedia facilities; **h)** Outdated course contents; **i)** Lack or no linkages with industry partners for apprenticeships, etc.

Apart from the constraints/barriers as identified by the TVET institutions, there is a lack of industry linkage in general which can foster working competencies of the graduates. Association of Women Entrepreneurs almost unanimously opined that TVET institutions are not interested in investing in dual system training. This is implied equally to both public and private TVET providers.

Conclusion and Recommendations

There is clearly a mismatch of occupational skills needs/demand between employers and graduates. Occupational skills demanded and/or placed as requirement from employers are more or less specific to locations and industries of types and sizes; while occupational skills needs identified by the job holders and seekers i.e. both TVET graduates and non-trained workers are not area and/or industry specific, rather those are more widespread. While identifying occupational skills needs, the graduates and workers tend to look for employment opportunities even from a broader perspective. These are targeting both wage based and self-employment, as well as basing on the present and future potential labour market demands either locally, nationally or even overseas. The difference of thought basis between the employers and employees is drawn clearly, and which reflects on the outcomes to be leading to a distinctive mismatch between their needs and need patterns expressed. The point is that key users need to realign and contextualize the occupational skills needs as those better fit with the local demand, and at the same time programmes (whatever selected) need to be of at least national standard.

Recommendations:

Based on research findings as a whole and the analysis of a few other issues in the concluding section associated with the key findings, the following key recommendations are made that the ILO Skills 21 Programme:

- Takes into account all the top 19 programmes under eight NSDC established ISCs for the subsequent development and facilitation, within which the informal sector is found to be dominant one;
- Strongly considers to address the suggested capacity building needs of the model institutes and undertake an independent, well-structured and full-scale institutional capacity needs assessment for them to provide programme and catchment area specific needs;
- Addresses the issues/constraints as identified from different perspectives, as well as facilitates a series of dialogue with relevant ministries and departments including the BTEB to restructure/reform (if need be) and strengthen the Monitoring and Follow-up System to ensure the quality of training programme delivery;
- Takes on issues related to building formal and sustainable industry linkage per selected programme and catchment area for the purpose of dual training system;
- Facilitates the model TVET institutions for linkage building with Micro-Finance Institutions (i.e. MFIs) like NGOs and other financing institutions like Banks, etc. for promotion of business development services; and also
- Can consider for adding values to the overall TVET system in Bangladesh by adding training programmes related to care economy and green skills, since these are the future needs and tools for fighting adverse impact of climate change as well as technological aggression.

Report on the Occupational Skills Needs (OSN) Analysis in the Catchment Areas of Seven TVET Institutions

1. Background and Introduction

Country context

Located in South Asia, Bangladesh is the world's eighth-most populous country and among the most densely populated countries with 1,188 people per square kilometer. The population is very young, with just over half under 25 years of age, and there is an equal male-female split. Since independence, Bangladesh has made significant improvements in human and social development indicators, including gender equality, universal primary education, food production, and population control. It has also made improvements in healthcare: life expectancy is higher than any other country in the region (except Nepal), while infant, under-five and maternal mortality rates are better than other countries in the region. One of the biggest problems in Bangladesh is the deep and widespread poverty levels since approximately 50 million people live in poverty, on less than $2 per day. This it is primarily a rural phenomenon and 85% of the country's poor live in rural areas. Bangladesh's GDP has been growing at an average of 6% each year for the past ten years. But there is great potential for growth – Bangladesh is committed to becoming a middle-income country by 2021, its 50th year of independence, and economist Jim O'Neil believes that Bangladesh is part of the "next eleven," a set of eleven countries with a high potential of becoming the world's largest economies in the 21st century, along with the BRIC countries. Bangladesh is one of the world's leading exporters of textiles and garments, as well as fish, seafood and jute. The majority of employment is in agriculture, comprising nearly 50% of the workforce and contributing 17% of the country's GDP. T-+-*he country has diversified its economy through a growing industrial sector which contributes 29% of GDP; in 2005 more than three-quarters of Bangladesh's export earnings came from the garment industry[2].

ILO Skills 21 Programme

The "Skills 21" is a new ILO & EU Project for **"empowering citizens for inclusive and sustainable growth"**. The new skills development programme will be built on the achievements of earlier EU/ILO initiatives and will continue to modernize the Technical and Vocational Education and Training (TVET) system in Bangladesh. The Project will take forward the achievements of the ongoing projects and address the next priority areas, in particular: (i). Continuous strengthening and improving the quality of the TVET/skills development system, including development of a National Qualification Framework (NQF) that would ensure harmonization of qualification pathways across primary, secondary, technical and higher education; (ii). Establishing a more conducive legislative, regulatory and institutional environment through improved governance and management of the TVET/skills development system including, inter-alia, developing the mechanisms and elements for a Sector Wide Approach (SWAP) in the TVET/skills development sector; and (iii). Improving access to and equity within the TVET/skills development system that would include having the number of model TVET institutions increased and inclusive, environmentally conscious, quality and labour market-

[2]ref: ANALYSIS Country overview: Bangladesh August 2014 by GSMA

responsive skills development ensured. The project also aims to support collaboration between companies and relevant training providers to develop and implement demand-driven education and training programs.

The state of the problems[3]

The delivery of TVET courses is dispersed across many government and private agencies with up to 19 GOB ministries delivering some form of TVET course, either formal or informal and there is no consolidated data on the nature or scope of these programs. One of the key distinctions amongst TVET courses is whether they are affiliated or not with the Bangladesh Technical Education Board (BTEB). Affiliated or formal courses tend to be of longer duration, include structured assessments and lead to the award of national qualifications. Courses that are affiliated with BTEB have their curriculum and examinations set by BTEB.

The labour force survey (LFS) and other collections from the Bangladesh Bureau of Statistics (BBS) are considered of limited value for skills planning. The LFS, for example, provides data at only the 1-digit level and therefore cannot directly provide information that is useful for detailed demand forecasting for TVET. The assessment of the demand for skills by employers, both local and overseas, is piecemeal and ad hoc and stakeholders were unanimous in their view that demand assessment needs to be systematized and improved.

The informal economy of the country is very large, employing around 80% of the workforce; while the size of skill shortages are large relative to the numbers of graduates being produced by the TVET sector. Student applications for TVET courses are generally well in excess of the number of places available-- often anywhere between 3 to 10 times the number of available places. Bangladesh's economic growth is substantial - around 6% per year - and insufficient skills is increasingly constraining the growth as expected. As Bangladesh attempts to increase the quality of output, especially from its manufacturing sector, the level of available skills is a constraint. Textile and garment sector representatives also reported that a shortage of skilled employees is constraining the level and quality of output. Overseas workers are very important to the Bangladesh economy, with their remittances constituting the largest source of foreign exchange for Bangladesh. Some 6 to 8 million Bangladesh workers are currently overseas primarily in the Middle East and the GOB wants this stock of overseas workers to continue to increase. A number of stakeholders indicated that the demand for skills by overseas employers is also increasing significantly and that, if skilled workers can be provided, that wage rates and remittances would increase. Industry generally holds the view that the quality and relevance of TVET programs is inadequate. Business decisions are yet not dependent on specific types of TVET data and rather based on a generic need to understand the demand for skills from industry and overseas and to achieve better matching of the output of the TVET system with the demand for skills from the industry. Overall, Bangladesh's TVET system is still remaining 'fragmented' and 'disorganized' and that calls for a wide-spread support/need for improved management and responsiveness to the demand for skills.

[3]ref: ILO 2010; a proposal to strengthen TVET & skills data in Bangladesh

Study rationale and objectives[4]

With a view to improve quality of the TVET and overall skills development system (outcome 1), improve access to and equity within the TVET/skills development systems through TVET model institutions (outcome 2), and to create an enabling environment through improved governance and management of the TVET and skills development system (outcome 3), the ILO Skills 21 Programme emphasizes on the establishment and operationalization of the seven TVET model institutions selected from all over Bangladesh. These institutions are envisioned as to be role models, used a vehicle for service delivery for, and taking the lead in strengthening other TVET institutions. For these to be materialized, obtaining an accurate picture of the labour market and employment opportunities becomes vital for a demand-driven TVET system. Therefore, a skills needs assessment and analysis is considered necessary to define the basis for training interventions and to facilitate understanding key elements of a broader TVET system, from skills to job. There are a number of similar researches conducted in the past, the results of those are now updated or they have different target populations, or research. Hence, a new research is considered necessary.

The overall objective of the research is to provide an occupational skill needs analysis that covers the catchment areas of the seven model TVET institutions. The results are expected to be the basis for the development of relevant qualification packages and programmes for training delivery. The objectives, in specific, are to:

a) Provide a "snapshot" of the various industries located in the catchment area, and describe their partnerships with TVET institutions;
b) Analyse the type of skills available and relevant in the labour market as well as the current skills needs to describe the type and range of jobs, and opportunities for employment with special focus on green jobs, entrepreneurship and other demand-driven skills;
c) Identify potential institutions that implement green skills, entrepreneurship, and demand-driven programs in the catchment areas of the model institutions;
d) Assess the institutional capacity of: (a) selected TVET institutions; and (b) industries to deliver demand-driven programs with a particular focus on infrastructure, trainers and staff, management, and industry linkage;
e) Assess the possibility of business development services such as micro-financial institutions, banks, etc. available for TVET graduates to establish small enterprises and identify level of support needed for this to happen;
f) Identify labour market (a) opportunities as well as (b) discriminations and stereotypes faced by disadvantaged groups, and provide ways to address them;
g) Examine constraints/barriers to improve the quality of the training programmes from the perspective of: (a) TVET trainees/Graduates; (b) training providers; and (c) employers; and
h) To provide recommendations on potential market-driven occupations to be introduced through dual training system in the TVET institutions and industries.

[4] The Terms of Reference (ToR) of the study on OSNA of ILO Skills 21 Programme

Scope of works

Based on the objectives, a set of scopes for consultancy work are suggested through the TOR. Those briefly include: (a) desk review and secondary literatures and documents as relevant; (b) determining priority sectors to be surveyed in consultation with ILO Skills 21 Team; (c) designing and/or adopting research methods and data collection instruments taking into account the defined objectives; (d) gathering information from at least 10 enterprises/industries (50% formal and 50% informal) which come from ISCs, business associations, chamber of commerce, etc., (e) analyzing and interpreting the results, and discussing initial results with ILO International Adviser, (f) identifying the existing capacity of the TVET institutions and preparing a list of tools and equipment those match with identified occupations, and (g) presenting results to the project team, finalizing and submitting the key deliverables as relevant and agreed.

2. Review of Secondary Literature and Documents

A. Introduction

In this section presented is a succinct reflection of the state of TVET system in Bangladesh based on a review of the available documents in the context of labour market within the country while keeping an eye on the overseas market demand. The literature includes relevant policy papers, project documents, and study reports, etc. The major focus of the review has been to find a proper perspective for analysis of data in line with the objectives of the present study, in order to strengthen the skills training system as per the market demand.

Bangladesh National Education Policy (2010) and National Skills Development Policy (NSDP)–(2011)

The Bangladesh National Education Policy envisions a society, its people having acquired quality education and skills to be able to accelerate national development process and eradication of poverty. Through the expansion of technical and vocational education, the vast pool of human resource of the country will effectively compete with the emerging technological advancement in the global society. In the most recent years skills development training has received a special thrust through institutional capacity development for transforming the large pool of youth population of the country into skilled human resource for enhanced productivity in the competitive world of technology based economic growth process. Thus public and private sectors as well as the not for profit (voluntary) developmental organizations have been involved in education and training of young adults for turning them into skilled persons to match the needs of the domestic labour market and the market overseas. Skills development includes life-skills, trade courses, vocational trainings and technical education. The learners' groups are varied: non-literate, semi-literate, literate and formal graduates; and so is the mode of training i.e. formal, non-formal, informal.

Adoption of the National Skills Development Policy of Bangladesh is a significant outcome of the TVET Reform Project earlier implemented by the government (supported by European Commission and implemented by ILO). It is a comprehensive policy instrument guiding skill development strategies for both public and private sectors and is intended to facilitate improved coordination of all parties involved in education and training in Bangladesh. It provides the Vision and Direction for skills

development over the coming years, sets out the commitments and key reforms that Government will implement in partnership with industry, workers and civil society. Furthermore it has provided the rationalization of instituting the National Skills Development Council (NSDC) as an Apex Body Headed by the Head of the Government (Prime Minister) responsible for setting the national skills development agenda. The council provides an important tripartite forum where representatives of government, employers, workers and civil society can work together to provide leadership and clear direction to skills development. NSDC is to introduce appropriate policy and set specific mechanisms to improve coordination of skills development across Bangladesh.

In harmony with the above, the National ICT Policy has been formulated to extend ICT literacy throughout the country by incorporating ICT courses in secondary education and technical and vocational education and training (TVET) programmes.

In the same vein Bangladesh Youth Policy has intended to provide scope for applied education and skill development training in order to create opportunities of employment and empowerment of the youth. A special focus is on supporting the unemployed youth toward self-employment by proper utilization of local resources and provisioning of loans. Programmatically, within the above policy framework, the Department of Youth Development in the Ministry of Youth and Sports run training of 1 to 6 months' duration on various trades.[5]

B. Development Plans

The Sixth Five Year Plan observes that the impact of the public sector VTE on poverty alleviation is undermined in two ways. It mainly serves the urban young males who have completed at least the eighth grade. The rural poor, who do not survive progression to grade 9, are mostly ruled out. The failure to diversify its clientele and to make the programs more flexible, adaptable and responsive to market needs and geared to the informal economy suggests that the VTE is failing to help the poor improve their employment and income opportunities.

In this context the Plan commits to expansion and modernization of TVET to meet market demands by improving link between training and job market. It aims at extending greater benefit to the poor and women by introducing ICT and technical education to secondary level institutions. Envisaged are covering pockets of disparities and introduction of technical and vocational courses in Madrassah. Increased attention to reducing inequality by building the skills of the poor, women, and excluded groups and raising their income-earning capability through better-quality and more-relevant and inclusive education, and greater access to learning opportunities is in the vision of Bangladesh. The Sixth Plan aims at getting improved quality and relevance of TVET and thereby to

[5] Some other programmes on youth development under different ministries of the government include: Ministry of Women's and Children's Affairs provides short courses for women in areas like poultry, dairy, livestock, food processing, plumbing, and electronics . Ministry of Social welfare, Ministry of Education, the Directorate of Ansar and Village Development Party (VDP) under the Home Ministry and the Bangladesh Small and Cottage Industries Corporation also provide TVET programs. Private sector institutions are also increasing, especially in the IT sector in response to demand for skilled and semi-skilled workers at home and overseas.

increase equity in access to TVET considering market demand, and to enhance employability of the TVET graduates. Thus the Plan makes the right direction of developmental choice.

C. 7th Five Year Plan (2016 – 2020)

The subsequent 7th Five Year Plan has addressed the skills constraints for accelerating of economic growth in the country. Under the National Skills Development Policy, National Technical and Vocational Qualifications Framework (NTVQF) has been designed to improve the quality and consistency of nationally recognized qualifications.

- **The National Technical and Vocational Qualification Framework– 2011**

The NTVQF currently under implementation in Bangladesh, has been one of the most important building blocks of the Technical and Vocational Education and Training (TVET) Reform Project. The NTVQF is intended to cover the existing workforce and those entering the workforce. The framework allows for the recognition of skills workers have acquired in the informal sector, and includes post-secondary qualifications up to diploma level.

- *Industry Skills Councils (ISCs)*

A key driver of current efforts to reform skills development in Bangladesh is the need to strengthen linkages between industry and the national training system. Industry Skills Councils (ISCs) help to achieve this by bringing together the major enterprises and industry bodies within an industry sector to discuss skill development issues affecting their sector. ISCs organize industry along sector lines to provide specific advice on occupations and skills in demand, and to identify key skills priorities in sectors. They ensure a tripartite approach to continuously improving the skills development system by bringing employers, workers and government representatives together. As ISCs continue to develop, they will become the primary point of contact for skill issues within industries in Bangladesh.

Industrial Skills Councils have been established in twelve industry sectors. These are: agro-food, Ceramic, Construction, Furniture, ICT, Leather & Leather Goods, Light Engineering, Pharmaceutical, RMG & Textile, Tourism & Hospitality, Transport Equipment, and Informal sector. The ISCs have Standards and Curriculum Development Committees (SCDCs) and are all functioning in a number of ways, from arranging specialist training courses for workers to organizing public-private-donor partnerships and developing curriculum material for new occupations. Four Centers of Excellence has been established, in the leather sector, agro-food processing sector, tourism & hospitality sector and the readymade garments sector.

D. Skill Training Projects in Implementation

Because of page limit in this report presented below are only a few skills training projects that are relevant to take special note of as a part of review of available documents.

- **Skills and Training Enhancement Project (STEP)**

To enhance the access, equity, and quality of the skills development training in the country, the Government of Bangladesh launched Skills and Technical Enhancement Project (STEP) in 2010 funded by the GoB, World Bank, and the Government of Canada with the expected closing date in June 2019. The objective of STEP is to strengthen selected public and private training institutions to improve the training quality and employability of trainees, including those from disadvantaged socio-economic background.
For this, the project contributes to a stronger and more inclusive private sector training market creating better job opportunities for the poor. The programme tests and scale-up market-driven, quality skills training systems within the readymade garments (RMG) and construction sectors that will stimulate further investment in training by trainees, private training providers and employers. Sudokkho envisages creating strong, inclusive private sector training markets for the RMG and construction sectors. Working with industry partners and private training providers, the programme seeks to facilitate the training of more than 100,000 people from disadvantaged groups, including women and the extreme poor.

- **Bangladesh Skills for Employment and Productivity (B-SEP) - (2014 – 2018)**

The Bangladesh Skills for Employment and Productivity (B-SEP) Project is an initiative of the Government of Bangladesh (GoB) funded by the Government of Canada and executed by the International Labor Organization (ILO) with support from the GoB. The project aims to accelerate the current efforts being undertaken by other organizations, donors and government to make skills in Bangladesh nationally recognized, accessible to all, higher quality and directly linked to jobs. The B-SEP priority industry sectors are: 1. Agro-food Processing, 2. Tourism, 3. Pharmaceuticals, 4. Furniture Manufacturing, and 5. Ceramics. The project components are: (i). Institutional Capacity Development (Strengthening of the skills development system, policy implementation and coordination); (ii). Standard Setting, Training, Assessment and Certification (setting and implementing qualification standards, instructor development and programmes); (iii). Industry Skills Development (Building linkages between demand and the supply of skills in five priority sectors involving the private sector); and (iv). Promoting equitable access to skills by increasing opportunities for training, and provisioning of employment for disadvantaged groups, particularly women and Persons with Disabilities (PWDs) through skills training/apprenticeships and job placement).

- **Tracer Study of the Trainees under the Industry-led Apprenticeship Project (COEL Industry-led Apprenticeship Project for Leather Industry (2012 – 2014)**[6]

The Centre of Excellence for Leather Skill Bangladesh Limited (COEL), founded in 2009 by the Industrial Skills Council in the leather sector, has been assigned to implement the Industry-led Apprenticeship Project by Swiss Agency for Development and Cooperation (SDC). It started as an initiative of the Apex Industries Limited for skills development with support from the TVET Reform Project (funded by EU and implemented by ILO) to assist in the development of competency standards and curricula, training of trainers (ToT) program and development of the apprenticeship model. Today COEL is closely affiliated with the Leather Goods & Footwear Manufacturers & Exports Association of Bangladesh, and works

[6] Md. Amirul Islam & Team, SDC, October, 2014 October 2014

with different government bodies for instance BTEB, BMET etc. on the development of the country's Technical Vocational Education and Training (TVET) system and the introduction of the National Technical and Vocational Qualification Framework (NTVQF).

The study involved both quantitative survey and qualitative research, and covered only Dhaka and Gazipur districts from its first two years' intervention areas. There were three separate groups of respondents in this study, namely, i) Trainees (Machine Operators, Floor level Supervisors and Machine Maintenance Technician), ii) Training Service Provider (COEL) and iii) Industries where graduates are presently employed. The objectives of the study were as follows: a. Facilitate mapping of prospective trainees to ensure sustainable/gainful employment in leather, and b. Conduct a Tracer study to gather the whereabouts of the graduates who have completed their Industry-led Apprenticeship program at COEL and identify the factors motivating them to consider a sustainable employment in leather sector (leather goods or footwear or leather).

In the first two years of the project intervention, 3735 trainees were served through the trainings and out of them, 3553 has been placed under employment in the respective industries. Out of the 373 interviewees, 67% were unemployed before attaining the training, 32% were employed and rest 1% was self-employed. However, the scenario changed after receiving the training, 346 trainees out of 373 were employed after they successfully completed the training that represents approximately 95% employment and unemployment rate declined to 0.3% from 67% where as the self-employment rate increased to 5.1% from 1%.

3. Approach and methodology

3.1 The research design and conduction approach

The research is conducted using a mix method approach. It comprises both the quantitative and qualitative methods and data collection instruments (i.e. DCIs) to ensure that the research is statistically robust, representative of respondent groups and participatory. The underlying logic of mixing methods is that neither quantitative nor qualitative methods are considered sufficient in themselves to capture the trends and details of the situation. Therefore, a combination of both is used to secure yielding a more complete analysis, and where they will complement each other. A more rigorous rational is envisioned, because data could be seen as included, not because of they are available, but because both types of data are important to the study purpose. We also assume that qualitative data will help explore statistical results from quantitative data, or in other term quantitative outlier or extreme results can be better understood through qualitative data collection. Document desk review is used as a crosscutting tool that fits with both the methods, on where and as applicable basis. The conceptual design of the study covers and is built on the scopes suggested and results expected from both of demand and supply sides relevant.

While collection and analysis of research data, both primary and secondary sources are explored. Data analysis is done keeping the results of quantitative data at the center and then be complemented by the analysis of qualitative data. The substantial data analysis approaches, while those are collected through multiple methods, are divided into three broad stages. At the first stage, articles are read thoroughly and analyzed with the help of the data collection instruments. In addition to the structured data, unstructured

information in the form of keywords and comments are collected by the means of intensive memo writing. At the second stage, which is planned first mainly for data entry, articles are shortly reviewed and an initial classification of studies emerged on the basis of a qualitative analysis of both structured and unstructured data. At the third stage, computer aided data analysis is performed, first on the basis of structured data by the means of various statistical techniques, and thereafter, on the basis of unstructured data by the means of open coding and categorization. In addition to this, a data triangulation technique (i.e. multiple methods, tools and data sources) is applied to arrive at the conclusion in each of the result areas. In data triangulation approach, different methodological concepts (i.e. qualitative and quantitative), data collection instruments (i.e. semi-structured questionnaire survey, FGD, KII, etc.), and data sources (i.e. primary and secondary) are used to consolidate results and facilitate the analysis of findings data to arrive at the research goal.

3.2 Methods and tools used

As already indicated in the figure 1 that a number of tools, specific to both quantitative and qualitative research methods covering both of demand and supply sides, is used for primary data collection from the field. Alongside, relevant literature and documents are reviewed (please refer to the list of documents/literatures consulted in the Reference, Section 7) as a secondary source but towards exploring both the quantitative and qualitative data to complement to the overall field research findings. The following is a brief framework of the methods and tools used for the research purpose.

Respondent groups	Quantitative tools	Ref:	Qualitative tools	Ref:
Demand side:				
Industries/Employers	SSQ based face-to-face Interviewing	Annex 1	Key informant interviews (KIIs)	Annex 5
ISCs/Enterprise or Business Associations/Chamber of Commerce			Focus Group Discussion (FGD); KII	Annex 6 Annex 5
Graduates (e.g. employed, unemployed/fresh)	SSQ based face-to-face Interviewing	Annex 2		
Non-trained Workers of sampled industries	SSQ based face-to-face Interviewing	Annex 3		
Supply side:				
TVET Providers and relevant industries	SSQ based face-to-face Interviewing	Annex 4	KII	Annex 5

There are separate semi-structured questionnaires used for different target respondent groups. The common purposes of all the questionnaires are to explore informed opinions and views of the respondents but from their different perspectives. These are mainly related to occupational skills needs from the demand side respondents, and existing capacity to address those skills need from the supply side respondents. On the other hand, the qualitative tools are designed and used to facilitate respective respondent groups to draw and interpret occupational skills need situation as well as views on those by their own to complement quantitative survey outcomes. All these tools i.e. quantitative and qualitative are designed and used on the basis of the specific and relevant research objectives and scopes. The finalization of the tools used in the research is done through a sequential process of drafting, client consultation, initial tuning, field testing, and feedback incorporation from the field test.

3.3 Sampling design and sample selection strategy

Quantitative

As per ILO estimation provided through the pre-bid meeting, the study populations/beneficiaries/trainees per catchment area is around 500 youths. Thus, in 7 pre-selected models TVET institutions the trainees are summed to around 3500 youths. These trainees/youths are considered the sample populations and TVET institutions areas primary sampling units. The first consideration for determining the sample size is to ensure the statistical robustness of the survey data and representative of the respondent groups; and then the final consideration is that the estimate reflects an appropriate confidence level (i.e. 95% confidence level and an error margin of +/-5% with an increased design effect of 1.4 as agreed) of the survey in the given situation. For ensuring an equal distribution of samples per categories and institutions 22 more respondents are added. Therefore, the final *Sample Size* arrives at **560** which are equally distributed among all 7 TVET institutions and target respondents in their catchment areas. Based on the total number of estimated as well as targeted sample sizes, **Table 1** below summarizes the detail allocation of actual beneficiaries and stakeholders (i.e. respondents) surveyed (i.e. 546) in seven selected TVET institutions and their catchments areas, which is 14 less samples than the size targeted.

Table 1: ***Distribution of samples surveyed through semi-structured questionnaire (quantitative)***

Catchments	Sex	# Respondents/samples surveyed by groups and sex					
		Employer	Employed Graduate	Unemployed/ fresh graduate	Non-Training Worker	TVET Provider	Total
Khulna	Male	9	5	7	10	8	39
	Female	0	14	15	10	0	39
	Total	***9***	***19***	***22***	***20***	***8***	***78***
Bagerhat	Male	12	4	13	10	8	47
	Female	0	11	12	10	1	34
	Total	***12***	***15***	***25***	***20***	***9***	***81***
Rangamati	Male	10	15	14	8	5	52
	Female	0	1	6	11	3	21
	Total	***10***	***16***	***20***	***19***	***8***	***73***
Feni	Male	9	17	17	18	8	69
	Female	0	3	1	1	1	6
	Total	***9***	***20***	***18***	***19***	***9***	***75***
Sylhet	Male	9	18	7	19	6	59
	Female	1	3	14	0	4	22
	Total	***10***	***21***	***21***	***20***	***10***	***82***
Jamalpur	Male	10	18	11	13	4	56
	Female	0	6	11	8	1	26
	Total	***10***	***24***	***22***	***21***	***5***	***82***
Gaibandha	Male	10	6	10	20	6	52
	Female	0	6	13	1	4	24
	Total	***10***	***12***	***23***	***22***	***10***	***77***
TOTAL	**Male:**	**69**	**83**	**79**	**98**	**45**	**374**
	Female:	**1**	**44**	**72**	**41**	**14**	**172**
	Gross:	**70**	**127**	**151**	**139**	**59**	**546**

A multi-stage stratified sampling approach is used for the selection of survey samples. The TVET institutions are the primary sampling units, and then other types of samples are drawn from respective catchment areas. Different sampling frames, as per predefined strata, are developed first for the employers of types and sizes, and TVET providers of public and private. These are developed locally with the assistance/cooperation of Chamber of Commerce and selected TVET Institutions. Based on different sampling frames developed, a systematic random sampling approach is used for the selection of employers/business industries and TVET providers for the survey purpose. At the next stage, for the selection of graduates (both employed and unemployed/fresh) and non-trained workers, a simple cluster random sampling technique is used from within the industries/employers and TVET providers already surveyed.

In addition to the samples surveyed from different respondent categories, there is a total of 52 TVET providers (including the seven selected model TVET institutions; while remaining others include public and private providers as well) surveyed from seven different catchment areas. While disaggregated by areas, these are 8 from Khulna, 7 from Bagerhat, 9 from Rangamati, 8 from Feni, 9 from Sylhet, 6 from Jamalpur, and 5 from Gaibandha catchments.

Qualitative

Different respondent categories and numbers are covered through qualitative tools i.e. FGDs and KIIs used as to complement to the analysis of quantitative data (table 2). As per targets met, a total of 24 FGDs and 26 KII sessions conducted and all-together 231 participants reached. The qualitative findings are presented in respective parts of the report.

Table 2: ***Respondents of categories covered through qualitative tools***

Covered through FGDs					**Covered through KIIs**	
Respondent categories	***# Session***	***Participants***			***Respondent categories***	***# Session***
		Male	Female	Total		
Chamber of Commerce	7	53	3	56	Business Chamber leader	6
Women Entrepreneur associations	7	0	66	66	Govt. line Officials	6
BSCIC association	6	39	11	50	Principals of TVET Ins.	8
Association of others	4	32	1	33	TVET Instructors	6
Total:	**24**	**124**	**81**	**205**	**Total:**	**26**

Most of the samples for qualitative sessions are selected based on purposive sampling approach, since they are considered closely relevant with the occupational skills which the need analysis research for. The respondent categories covered through FGDs are mainly employers (i.e. employer groups) and categories covered through KIIs are mixed of employers and TVET providers.

3.4 Data collection and quality control mechanism

The Team Leader and other team members maintained constant touch with the Research Associates and Data Enumerators while data collection is done in the field. All members of the consulting team get

engaged in the monitoring of the field study activities at randomly selected places to ensure the quality. They undertake field visits in selected areas at random basis to verify and confirm the findings with the actual situation. In addition, quality of data collection is monitored over mobile communication to the team as well as the target respondents. The works of the data enumerators are constantly monitored and supervised by the Research Associates. The Research Associates check all completed questionnaires in the field and re-interview some of the respondents to be sure about the quality of data collected. In assistance with the data enumerators the research associates conduct FGDs and KIIs as well. The consultants including the Team Leader and other Team Members undertake random visits to ensure data quality control and also to encourage the respondents. The consultant also conducts the field visit to discuss the respondents, and project field personnel to enrich their understanding apart from the purpose of quality control of data collection.

3.5 Data entry, processing and analysis

Immediate after data gathering into the KCSPL Office from the field, all open-ended data are encoded by a team of professionally skilled encoders. Thereafter, all data are entered into the database using EPI-info software package under direct supervision and guidance of the Statistical Analyst. Once data entry is completed, data are cleaned following different statistical checks and tests using professional means by the Statistical Analyst himself. Cleaned datasets are processed through all data being transferred into SPSS software and then data tabulation is done as per data analysis plan (in blank tabular form with enumeration guidelines) provided by the Team Leader. Once data tabulation is done, these are shared and discussed with ILO team time to time aiming to make those corrected, well-organized and prepared for report drafting. For these to happen, several presentation and discussion meetings are held between the ILO Team and Consultants. Given the process adopted, the drafting of the report gets started following an official concurrence/clearance on the accuracy of data and its organization given by the ILO Team.

3.6 Limitations

The research design used is considered well-structured and balanced in terms of its coverage and depths. However, by its end there are two key limitations reflected and therefore duly acknowledged as in the following.

Firstly, the sampling estimate for the quantitative survey is based on population figures that there are around 500 youths in each of the seven catchment areas and accordingly the total figure is summed up to 3500. Based on this total population figure the sampling design is estimated and equally distributed among all the seven catchment areas. The limitation here is caused by the fact that the population counts used are not appropriate, actually that varies area to area at large. Therefore, the survey data used in this report as well as findings interpreted may not be truly representative of the catchment areas. Nonetheless, in a gross it provides nationally representative data while the sampling estimate is done using appropriate statistical design and that generates sufficient sampling size to be nationally representative.

Secondly, the research scopes include institutional capacity assessment of the selected TVET institutions on the ground that if they are having enough capacity to address the need for occupational skills as per present labour market demand as well as whether and what form or types of supports they require for the purpose, if there are any gaps. Accordingly, a general assessment is done; but however this has found

to be having less depth and relevance at this stage. This is because of the reason that institutional capacity assessment is itself a greatest attempt which has to be made once occupational skills needs per catchment areas (i.e. selected TVET institution) are finalized. Since this research is mainly for the purpose of identifying those skills needs, and then such needs are to be critically analyzed and scrutinized following vigorous consultation between the ILO Skills 21 Programme and the Government line agencies, then the issue of institutional capacity needs assessment will become more relevant. Given the fact, the findings related to this as presented in this report may not correspond to the actual capacity needs of the TVET institutions.

4. Study Coverage

The occupational skills need assessment and analysis bears clearer relevance with the demand and supply sides. As such the research undertaken covers both the sides but with number of stakeholders involved within each of the sides, which are as follows (Table 3):

Table 3: ***Summarized research coverage of stakeholders involved and intervened***

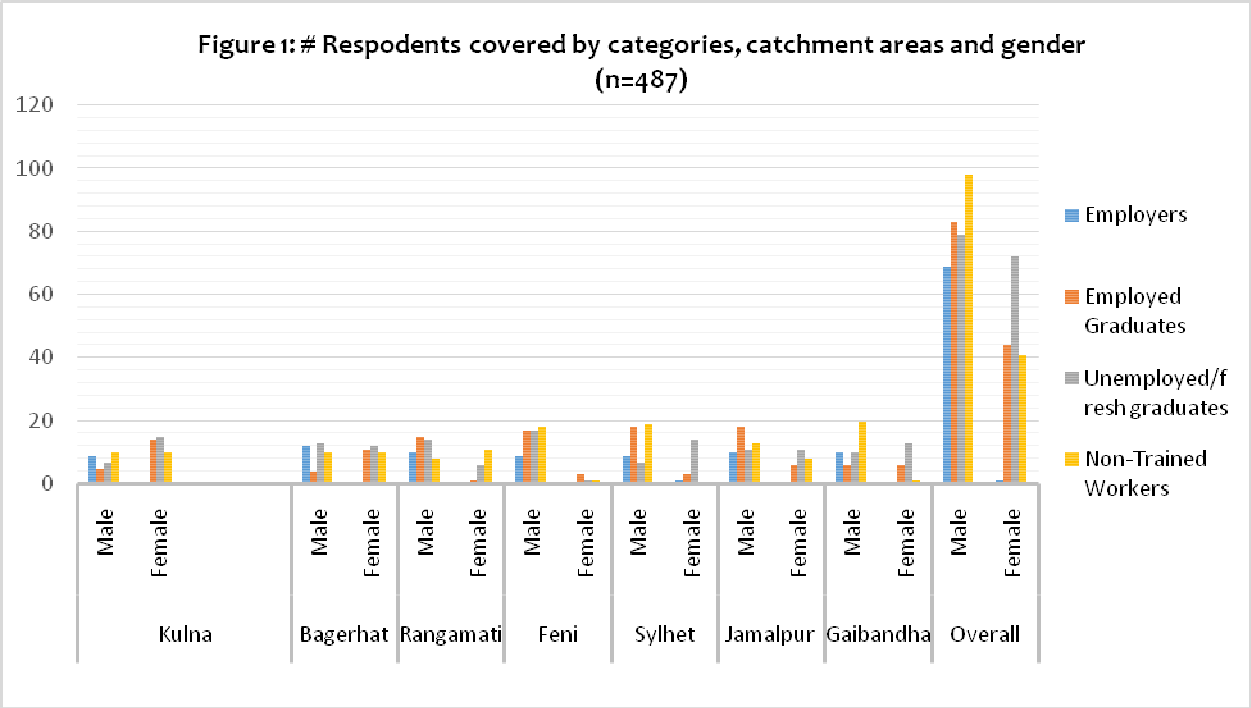
Demand side		**Supply side**	
Stakeholders	***# Intervened***	***Stakeholders***	***# Intervened***
a) Industries/employers	70	a) TVET Institutions (model)	7
b) Graduates (employed)	127	b) TVET Institutions (others)	52
c) Graduates (unemployed/fresh)	151	c) Govt. line agencies	6
d) Non-trained workers	139		
e) Business Associations/ISCs	24		

The following sub-sections are used to interpret and present the more detailed (i.e. area-wise and gender disaggregated) information on the research coverage.

4.1 Demand side

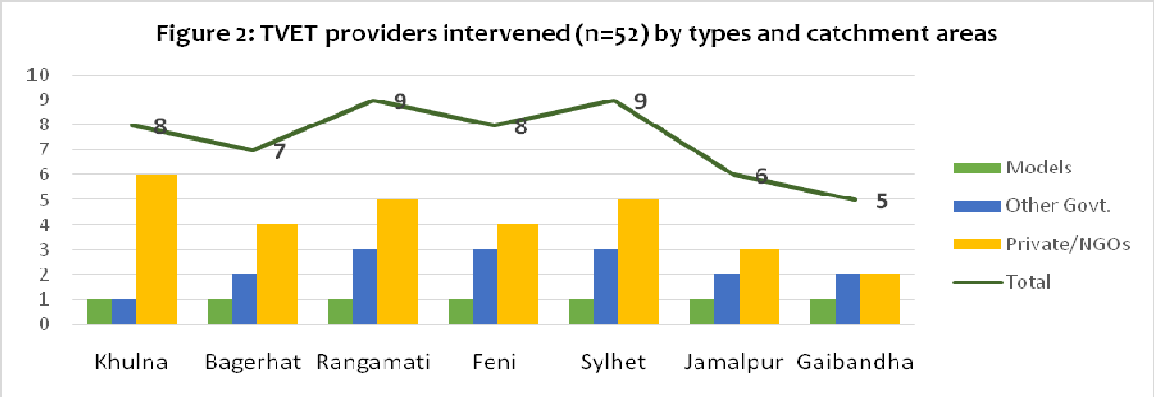
From the demand side the research covers/intervenes a total of 70 employers (i.e. industries of various sizes and types) of which most 17% from Bagerhat and lowest 13% from Khulna and Feni catchment areas. The numbers are not met as targeted per catchment area because of varied number of industries available, and in some cases those are inaccessible. The accessibility to the targeted industries is constrained, where applicable, due to lack of proper communication tool (e.g. official introduction/request letter) in hand of the interview seekers i.e. research field staff as expected either from the client ILO or the government line departments. All details of demand side respondents covered through the research by catchment areas and gender is presented in figure 1.

Graduates of types and non-trained workers all-together from the demand side are the single most respondents of the research – there is a total of 417 are interviewed. Categorically, the top most group intervened is the unemployed/fresh graduates (151), and then non-trained workers (139) and employed graduates (127). While disaggregated by respondents' sex the survey is male dominated (260 against 157 female), and area wise the representation is almost equally balanced.



4.2 Supply side

From supply side, a total of 59 TVET institutions (including seven selected models) are intervened of which top 10 are from Gaibandha and Sylhet, and lowest 8 from Rangamati and Khulna TVET catchment areas. The number of institutions met against the set target is varied because of the availability of as well as constrained accessibility to the institutions. Accessibility constraints are resulted from various reasons that include a) access permission denied due to the presence of the institution head, b) inability of the interviewers in presenting the official introduction letter from the line departments (mostly happened in the case of accessing to government owned TVET institutes), and alike. The interviewees are mostly men from the institutions; however, it does not impact on the interview results while both men and women interviewees express their views from their institution's perspectives, not from gender.



TVET institutions intervened by types (includes selected model TVET, other government owned, private and NGOs) and catchment areas are presented in figure 2. This provides that a total of 52 TVET institutions are intervened of which grossly privately owned and NGO-led institutions dominate. By catchment areas,

private/NGO-led institutions are more in Khulna and comparatively less in Gaibandha. As per research finding, government TVET institutions are dominant in Rangamati, Feni and Sylhet areas compared to other catchments.

5. Study Findings

5.1 A "Snapshot" of labour market information

National

Bangladesh is experiencing structural changes on the labour market while many workers are leaving the agricultural sector entering the service and industry sectors. A majority of Bangladeshi workers are still working in the informal economy characterized by inadequate earnings, low productivity and difficult conditions. Although, the country experienced high economic growth during the last two decades, it did not reduce working poor living below US$3 a day significantly, which remains high at 86%. On the positive side, the near-poor segment of the population started to increase in the 2010s, so far. This is, among others, an impact of an upsurge of wage and salaried workers in the formal sector. The country's employment-to-population rate is higher than the South Asia average, especially among women. Total unemployment is low with a flat growth, but youth unemployment is on a rise hovering above the region average rate. It points towards an impact of the urbanization and higher demand for decent work in the formal sector. Employment is dominated by men and inactivity on the labour market is frequent among women. Still one out of two of the total employment works in the agricultural sector with a relatively low GDP share per worker. The youth labour force participation rate is decreasing not only because of a rise in enrolment in secondary and tertiary education levels, but also of a worrisome increase in the proportion of young people not in employment, education or training (NEET), especially women. Since the labour market is not offering sufficient decent jobs many workers are seeking opportunities in other countries. Today, personal remittances have turned an important aspect of economic growth as well as reduction of working poor. The education system in terms of vocational training was struggling with stereotypical occupations. But, on the positive side, large programs were recently launched to scale up the enrolment in vocational training. Another clear deficiency of the labour market in Bangladesh is the extremely low coverage of social protection and in contribution to a pension scheme. Diverse labour market programs have a high number of beneficiaries, but targeting avoids large segment of the poorest population. A National Social Protection Strategy was launched in 2015 but its impact remains uncertain[7].

As of the most recent BIDS study[8], Education and Skill Training Share of labour force without education has gone through a substantial decline in recent years. In 2013, it was only 21% compared to 40% in 2006. Share of labour force with higher secondary or above education has risen from 8.5% to 18.9% during the 2006 - 2013 periods. In 2013, about 5.4% of labour force (0.574 million) was with technical/vocational training. The number and share with vocational/technical education was much smaller in 2010 i.e. 0.08 million and 0.14% respectively. Trained Workers from among the sub-sectors construction, RMG & textile and agro-food processing employ significant share of workers. These sectors account for 3.8, 8.4 and 2.5% of all employment respectively. Women's share is the largest in textile and RMG followed by agro food processing and healthcare. Data on share of trained workers reveal that healthcare, IT and hospitality are dependent on trained workers, the share ranging from 25% to 40%. Share of trained workers in light

[7]Ref: Bangladesh Labour Market Profile 2016 by LO/FTF Council, Analytical Unit of the Danish Trade Council for International Development and Cooperation

[8]Labour market and skill gap in Bangladesh (Macro and Micro level Study) by BIDS in 2017

engineering and shipbuilding is high, although employment share of these two is small. Share of female workers with training is high in healthcare and IT and these shares are almost the same for men and women. Nonetheless, the sectors where women's share of employment is high, namely RMG and Textile, the trained workers' share is much lower among women compared to men.

Most sectors have viewed shortage of skilled workers as one of the critical constraints to the growth of the respective sector. Projections of Labour Supply and Demand and Training Needs Labour supply (15+ years) are projected at 64.8 million in 2016 and 82.9 million in 2025. The rapid increase in projected labour demand is the result of high projections of GDP growth, which has been assumed to be sustainable with the same elasticity of employment as experienced during the last decade. Planning Commission has also estimated that during the Seventh Five Year Plan period, labour demand generation would be in excess of supply. Total training target for the 10 sectors will be 5.43 and 7.21 million respectively in the years 2020 and 2025. The projections of training target may raise a question about whether sufficient number of prospective workers will be available to opt for skill training. Evidence of skill mismatch often discourages prospective labour force to enter skill training. The situation is expected to change with the dynamic changes in the economy: (a) attainment of general education will rise and a larger share of young person's will have SSC and above level education, which will make them easily trainable; and (b) Moreover, better job availability for trained persons will encourage young person's to enter training programmes.

Green skills - National

Although the labour market is characterized by abundance of unskilled labour and skills shortage in transition to green economy. No such study in skills requirements and availability as yet. However, main greening shifts in the economy and the labour market of Bangladesh have taken place strongly in renewable energy, but rather weakly in materials management, telecommunication and transport. This weakness is primarily due to inadequate policy, institutional bottleneck (i.e. inadequate appreciation of DTE, BTEB, BMET, Ministry of Education and Labor & Employment), and implementation. Factors accounted for such shortage of green skills include inadequate institutional support for training – mostly supply driven TVET system leading to skill mismatch and ongoing TVET reform has no green component, shortage of trainers, and inadequate job placement mechanism. Skills response to meet challenge of green economic restructuring remains limited due to absence of active labour market policy measures, weak delivery mechanisms of existing institutions (i.e. training in skills for green jobs takes place informally and institutional framework, delivery channels and ad hoc skills responses remain limited)[9].

Catchment based

There are about 45 small-medium industries in Feni, 102 large-medium-small industries in Sylhet, 60 medium-small industries in Jamalpur, 45 small-medium industries in Gaibandha, 42 small-medium industries in Bagerhat, 6 small-medium industries in Rangamati, and 32 small-medium-large industries in Khulna[10]. These are of varieties of industry sectors (please refer to Annex 8). Overall research findings related to labor market say, still a major share (54.3%) of TVET graduates (generally considered skilled labourers) remains either unemployed or on look for employment. On the positive side, 29.9% are wage employed and 15.8 are self-employed given that 43.4% graduates received on-the-job training and remaining other have not. Area-wise employment rates of the TVET graduates are as follows (Table 4):

[9]Skills for green jobs in Bangladesh, Unedited background country study, 2010 – BIDS sponsored by ILO and EU

[10] Ref: sources include local BSCIC associations, Chamber of Commerce, and selected TEVT institutions

Table 4: ***Area wise employment rates (%)***

Status	***% Employment status of TVET graduates (n=278) by catchment areas***							
	Khulna	Bagerhat	Sylhet	Gaibandha	Jamalpur	Rangamati	Feni	Overall
Employed	46.4	37.5	50.0	34.3	52.2	44.4	52.6	45.7
Unemployed	53.6	62.5	50.0	65.7	47.8	55.6	47.4	54.3

Of the TVET graduates, overall the top most groups are academically qualified (24.8% at SSC, 34.9% at HSC, and 16.9% of graduate and above levels), more significantly 0.4% only at below grade V. Area wise Jamalpur has highest group (30.4%) of qualified labour, and then Sylhet (21.4%), Khulna (19.5%) and Bagerhat (17.5%). Quite consistently with the national situation local industries are male worker dominated (overall 58.3%), and area wise this is much prominent in Feni (89.5%), Rangamati (80.6%), Jamalpur (63%), and Sylhet (59.5%). While women workers are dominant in Khulna (70.7%), Bagerhat (55%), and Gaibandha (54.3%) (ref. annex 9 of table 9.1 and 9.2).

Average waiting time for getting a job (both wage and self-employment) after graduation completion from TVET institutes is more than 2 months in general, which varies at large locally (e.g. highest 4.1 in Feni and lowest 0.7 months in Rangamati). For getting wage employed 59% graduates receive only advises, 54.2% receive job sourcing, and 26.5% receive recommendation supports to the employers from respective TVET providers. While self-employment is concerned, only 25% graduates receive facilitation supports from the TVET providers to connect them with job market, and most (97.7% - multiple response) receive advises/guidance. Provision for providing grant support to the trainees from TVET providers are limited (i.e. 2.3% only) (ref. annex 9 of table 9.4, 9.5 and 9.6).

From among the graduates employed 30.7% think that they have inadequate competency to perform their jobs, while this is highest (62.5%) among the employed workers in Jamalpur and lowest (9.5%) in Sylhet. The major reasons, as reported by the graduates, are firstly they imparted training programs having lack of relevant updated knowledge (56.8%) and then a lack in the use of modern equipment during training (17%) (ref. annex 9 of table 9.7 and 9.8). The key reasons for graduates to be unemployed yet include: (i) jobs as per trades completed are not available (31.1%) in the market; (ii) lower rate (29.1%) of wages; (iii) unavailability of financing supports (20.5%) for self-employment; (iv) others (19.2%) – not specified, and (v) no supports received (14.6%) from the TVET providers (ref. annex 9 of table 9.11).

From among the workers (employed) with no institutional training 70.5% are men and 29.5% are women. Majority of them are academically at below grade V (28.1%) and then at grade V-VIII level (27.0%), at JSC level (18.0%), at SSC level (10.0%). Only a few of them (3.6%) completed HSC level and 2.9% Graduate & above level. About 41% workers have a total working experience of 2-5 years, 40% are working for 5 and above years. Overall, the average monthly income of the workers is Taka 7,403 only, and this largely varies (lowest 3,829 in Rangamati and highest 11,263 in Feni) among the catchment areas. Semi-skilled workers among others share the large market (41%) and then the unskilled (39.6%); while skilled workers have a small share (19.4%) compared to those semi and unskilled (ref. annex 10 of table 10.1 to 10.5). The area wise employment status of workers is as below (Table 5):

Table 5: ***Area wise employment rates by skill levels***

Skill levels of workers[11]	*% Workers with no institutional training (n=139) and their job levels by catchment areas*							
	Khulna	Bagerhat	Sylhet	Gaibandha	Jamalpur	Rangamati	Feni	Overall
Skilled	5.0	10.0	36.8	14.3	0.0	10.5	63.2	19.4
Semi-skilled	20.0	75.0	31.6	61.9	33.3	42.1	21.2	41.0
Unskilled	75.0	15.0	31.6	23.8	66.7	47.4	15.8	39.6

Overall, the employment of 44.5% workers is on permanent and 54.7% is on temporary basis. Location-wise this varies at large, for example the highest 90% permanent in Khulna and lowest zero in Bagerhat, and highest 100% temporary in Bagerhat and lowest 20% in Khulna. About 37.4% workers think that they have competency shortage in performing their current jobs; of them a gross majority (96.4%) thinks that formal skills training would have helped them better performing. Given the opinions, 85.6% workers show interest in imparting formal skills training based on availability of opportunity and of them 89.9% are interested in short or certificate courses and most importantly 81.5% are willing to pay for the training. In addition, only 19.4% workers are offered by on-the-job training (OJT) by their employers out of which 33.6% employers provide those skills services with their own cost. Given the constrained skills development opportunity within their work environment, 33.8% are willing to participate in OJT if offered by their employers based on shared cost (ref. annex 10 of table 10.6 to 10.11).

Green skills – catchment

Most information for this section are collected and analyzed from primary data explored through FGDs and KIIs. FGDs are conducted with associations of women entrepreneurs, chamber of commerce, association of BSCIC industrial laborer/workers and some other groups of business stakeholders; and KIIs are conducted with selected model TVET institutions, other than model but public TVET institutions, private TVET providers, representatives of district level chamber of commerce, and government line departments (i.e. officials concerned). The overall findings of Green Skills by catchment area are presented below in Table 6.

Table 6: Overall findings of Green Skills by catchment area

Catchment	*Availability and current practices of green skills*
Gaibandha	Shortage of skills in green jobs like solar panel accessories, biogas plants, and waste recycling because of absence of green industries in the locality. Additionally, no training is available for the promotion of green skills to meet the local (national as well) and overseas job market demand.
Jamalpur	The use of solar energy, biogas plants and waste recycling is visible in the area; and those have created self-employment for youths. But there is no green skill based training available.

[11]In ILO Skills 21 Programme-led Occupational Skills Needs Analysis research three NTVQF levels i.e. job classes are considered. Those do not include either of the basic skilled worker i.e. NTVQF Level 1 and medium skilled worker i.e. NTVQF level 2; instead a level below of them i.e. unskilled worker is used eventually providing it with not much worth in the study. Or, this can further be discussed with the ILO Team if both of the lowest levels i.e. 1 and 2 can be jointly termed as Unskilled Workers – if those are actually meant so. However,inclusion of those in the research seems to be important because along with other job classes i.e. semi-skilled and skilled, the potentials of unskilled workers to be one of the most potential target groups of trainees for the TVET institutes concerned might not be ignored/overlooked while a new set of CBT programs is to be added. This has been because of their representation in the selected catchment areas in terms of their number and background of formal academic qualification, for example, quite a remarkable groups of them are above JSC (28.8%) and SSC (16.6%) levels.

Sylhet	Some NGOs (e.g. Grameen Shokti, and some others) have programmes like establishment and operation of solar panel and biogas plants at household level. City Corporation has limited activities for waste recycling. Although at small scale, some industries have also established Effluent Treatment Plants (ETPs) in the city areas. However, there is a huge lack of manpower having green skills in the area. The awareness on the use of and demand for green skills are rapidly increasing in the region but training is yet not available.
Feni	Local Chamber of Commerce claims that green skills for youth are demandable but no TVET institutions or employers/industries take initiative to develop green skills; while other stakeholders have opined nothing about this.
Rangamati	The district is mainly with hilly terrains, where all areas are yet not covered by electricity supply. Given the situation, the use of solar technology can be one of the potential green skills to be promoted and scaled up. At present no TVET institutions or NGOs/private institutes and business industries are providing solar technology based training programmes. Biogas plants are not feasible in this area.
Khulna	The use of solar panel, biogas plants, and jute goods are demandable locally, especially more demand is visible for solar technology but manpower is not sufficiently (there are some initiative taken centrally to develop manpower but not equally distributed among districts) developed yet. Local training centers are not providing relevant programmes.
Bagerhat	Locally green skills like solar technology, biogas plants, waste recycling, etc. are not available for promoting green jobs. Trainings related to green skills development are not available as well.

There is no partnership role model is yet established between the industries and TVET institutions excepting quite a few formal partnership arrangement is made in Gaibandha only. The form of such partnerships can be benefiting both ways, one for TVET institutions to arrange dual apprenticeship programmes for the trainees and the other for industries to channel appropriately qualified workers for their employment. Both of the forms are yet to be developed, operationalized and scaled-up. The research finds no specific businesses or institutions who themselves promote and/or facilitate others to promote for green skills based jobs/employment opportunities at local level.

5.2 Employment opportunity (present and forecasted i.e. in 5 years next)

The local industries/employer types and sizes by areas, as per qualitative study findings, are diverse. These are consolidated as below in Table 7:

Table 7: local industries/employer types and sizes by areas

Catchment	Industry types and sizes
Gaibandha	Most of the industries in the district and its catchment areas are small and cottage based. However, there are some large industries that include sugar mills, automatic rice mills, and oil mills. Medium industries include auto rice, flower, oil, pulse mills and plastic factories; and small and cottage industries include agro food processing, handicrafts, baking, beautify care, welding workshops, block boutique, bamboo and cane.
Jamalpur	Most of the industries in the areas are small and cottage based, while there are a few large and medium in size. Large industries include fertilizer manufacturing, sugar mills, and jute mills. Medium industries include auto rice mills, pharmaceuticals, flour mills, auto rice mills; while small and cottage industries include nakshikatha, block batik, handicrafts, agro food processing, shoe manufacturing, dressmaking & tailoring, welding workshops, and electrical.

Sylhet	The district and adjacent areas have special features like tea garden and booming service sectors like tourism, education and healthcare services and traditionally industries are based on stones, bamboo, cane, agro, bio fertilizer, leather and footwear, food and fish processing, farm machineries, furniture, ceramics, plastics, rubber, glass, IT, textile, electric wiring and pharmaceuticals. Large industries include tea, ceramics, stone based, cement, tourism and hospitality. Medium industries include farm machineries, construction, light engineering and furniture; while small industries include textile, handicrafts, cottage and beauty care, among others.
Feni	There are a few large industries that include agro food processing, cotton mills, textiles, jute mills, glass manufacturing, and pharmaceuticals. Medium industries include textile, match factories, plastic factories, poultry and fish feed production; while small industries are dominant that include handicrafts, metal workshops, furniture marts, etc.
Rangamati	Only a few industries are exist in the area, among them Kornophuli Paper Mills, Kaptai Hydropower Electricity Company, and BFIDC (Bangladesh Forest Industries Development Corporation) are the large. Apart from those only five to six textile industries under small are operating. Furniture, cottage and weaving industries are increasing but fewer than those are demanded.
Khulna	The industrial city of the country. There are many large, medium and small industries in the district and its catchment areas. A few of the large industries include jute mills, cement factories, shipyard and shipbuilding companies. Medium industries include auto rice mills, iron factories, steel mills, baking factories, jute and jute goods, tourism and hospitality, block batik, dressmaking & tailoring, fishing, welding workshops, mechanical workshops, etc. While small and cottage industries include handicrafts, dressmaking & tailoring, block batik printing, RMG, motor works, bread and biscuit factories, among other.
Bagerhat	Small industries are major in the district as raw materials are available like coconut products, biogas, shrimp cultivation, fish processing, etc. There are some medium and small industries as well. Medium industries include natural fibers, auto rice mills, oil mills, pulse mills, coconut oil mills, baking factories, etc; while small and cottage industries include agro food processing, electrical and mechanical workshops, welding, mobile phone servicing, and alike.

The research (quantitative) finds that industries in Khulna are dominated by RMG, Transport and Construction sectors, industries in Bagerhat are by agro food processing and construction, industries in Sylhet are by transport equipment and informal, industries in Gaibandha are by agro food and informal, industries in Jamalpur by agro food, industries in Rangamati by textile and furniture manufacturing, and industries in Feni by agro food processing sectors. From among the industries of types and sizes, the present business condition per catchment is as presented (Table 8) below.

Table 8: ***% Present business condition of industries by areas***

Business Condition	**% Business condition by catchment areas**						
	Khulna	Bagerhat	Sylhet	Gaibandha	Jamalpur	Rangamati	Feni
Growing	66.7	25.0	50.0	50.0	60.0	20.0	55.6
Static	33.3	33.3	40.0	50.0	40.0	40.0	33.3
Shrinking	-	41.7	10.0	-	-	40.0	11.1

Present workforce employed by category of occupations in the catchment areas is as presented below (Table 9), where an opportunity for workers with disability is found very limited.

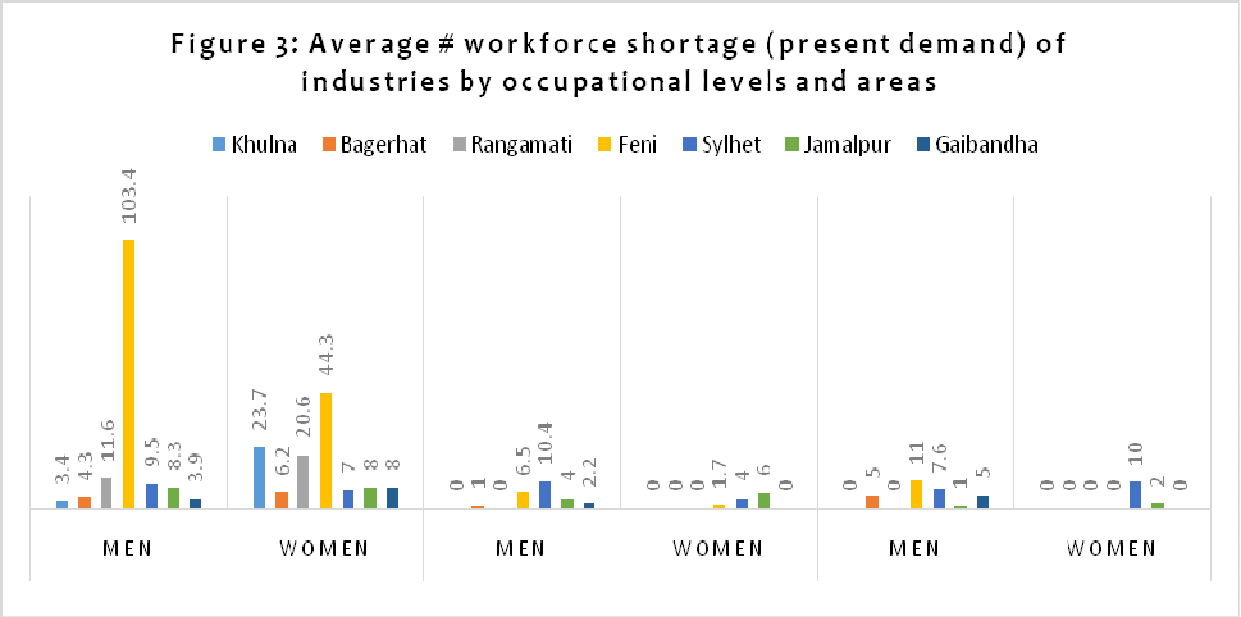
Table 9: ***Average present workforce employed by gender and areas***

Catchment areas	Average workforce employed by category of occupational levels								
	Managerial			Supervisory			Workers (all type)		
	Male	Female	PWD	Male	Female	PWD	Male	Female	PWD
Khulna	3.7	1.4	-	3.9	1.8	-	34.7	35	-
Bagerhat	1.2	-	-	1	-	-	6.2	13	-
Sylhet	2.3	1	-	9.3	2	-	63.1	18.5	7
Gaibandha	1.5	-	-	3.6	-	-	81.2	10.3	-
Jamalpur	1.4	1.3	-	6.1	10.5	2	36.1	94.2	3.3
Rangamati	1.4	-	-	1.8	2	-	17.8	27.9	-
Feni	4.4	10	5	6.2	5.5	-	133.4	106	27.7
Overall	**2.1**	**1.9**	**0.8**	**4.5**	**3.9**	**0.5**	**51.6**	**43.8**	**10**

Only about 14.3% workforces presently employed are reportedly skilled since they are graduated from TVET institutes (any) and thus certified by BTEB. Those are off the 42.9% skilled workers being trained from TVET institutes, but most having no certification from the BTEB. The remaining other workers are of skilled and semi-skilled with learning on the job, and unskilled with basic and/or with no education (ref. annex 11 of table 11.2).

As of the opinions of women entrepreneurs (FGD findings), there is limited employment opportunity in Gaibandha district as there are a few industries is there. Local chamber of commerce opined that a few opportunities are in the electrical, mechanical, electronics, motor mechanics, driving, and food processing occupations. In Jamalpur, there is also a few job opportunities available. These include beauty care, block batik, welding, agro food processing, and plastic manufacturing occupations. In Sylhet, job opportunities are available in the emerging sectors like tourism and hospitality (guide and hotel management), catering, IT, auto CAD, spoken English, food processing, automobile driving, furniture (carpentry and painting), and welding. IN Feni and its catchment areas there are insufficient job opportunities for TVET graduates; whereas the job market is expanding. The potential sectors for employment generation include IT, Construction, Agro food processing, and Light Engineering in the area. There is almost no employment opportunity in Rangamati at present. Most TVET graduates are self-employed but majority of them are being employed out of the district. There are some employment opportunities in Khulna as per employers' opinion (men and women) but those not sufficient for the graduates. In Bagerhat, there is almost no or very limited job opportunities because the large industries are not available and new skills required which local TVET providers cannot produce.

Given the present industry as well as employment situation as stated above, many industries in the selected catchment areas face workforce shortage (can be alternatively called as present employment demand/opportunity) at various occupational levels and that are presented in the figure 3. As of the scenario, industries under Feni catchment area are currently facing biggest shortage of skilled workers (both men and women); while industries in Khulna facing lowest shortage of skilled men workers (average 3.4) and industries in Gaibandha for skilled women (average 3.9). More interestingly, demands for skilled workers irrespective of their sex in all the areas are much higher than that of the semi-skilled and unskilled workers. This eventually implies strong future potentials for a greater employment opportunity of the TVET graduates with appropriate competencies.



In contrast to the present level of average employment and workforce shortage among industries in the catchment areas the forecasted employment opportunities are indicated in the following table (Table 10).

Table 10: ***Comparative workforce demand (presently employed, present workforce demand/shortage, and forecasted demand) in average numbers per industry***

Comparative workforce demand	**Sex**	**Average number of workers by areas**						
		Khulna	Bagerhat	Sylhet	Gaibandha	Jamalpur	Rangamati	Feni
Presently employed (worker unclassified)	Men	34.7	6.2	63.1	81.2	36.1	17.8	133.4
	Women	35	13	18.5	10.3	94.2	27.9	106
Present workforce demand/shortage:								
Skilled workers	Men	3.4	4.3	9.5	3.9	8.3	11.6	103.4
	Women	23.7	6.2	7	8	8	20.6	44.3
Semi-skilled workers	Men	-	1	10.4	2.2	4	-	6.5
	Women	-	-	4	-	6	-	1.7
Unskilled workers	Men	-	5	7.6	5	1	-	11
	Women	-	0	10	0	2	-	-
Forecasted workforce demand for next 5 years								
Skilled workers	Men	14.3	5.6	16.9	6.5	66.3	8	91.3
	Women	43.8	12.3	5	6.5	69	17.5	22.3
Semi-skilled workers	Men	12.1	7.7	22.8	12	44.6	10	79
	Women	22	6.5	24	2	82	15	15.5
Unskilled workers	Men	24.7	7.8	12	10.4	16.2	6.7	162
	Women	40	11.3	22.5	9.5	17	10	100

When searching for reasons why industries in the catchment areas are facing such shortage of skilled workforces 100% employers in Khulna point out high salary expectation, 58.3 employers in Bagerhat point out lack of practical/updated knowledge and OJT skills, 70% employers in Sylhet point out high salary expectation and skill mismatch between industry demand and providers' choice, 40% employers in Gaibandha point out high salary expectation, 80% employers in Jamalpur point out skill mismatch, 70% employers point out high salary expectation, and 44.4% employers point out the same as key reasons (note: top most opinions are counted only) (ref. annex 11 of table 11.11).

5.3 Discrimination and stereotypes faced by women and PWD , and ways to address them

Discrimination and stereotypes are almost common that includes a) neglects, b) wage discrimination between men and women workers, c) teasing and sexual harassment, etc. for women, and mostly neglects, restrained accessibility and wage are for PWDs. About 71% respondents say that they witnessed women face those in the training institutes and 29% say that women face in their workplaces/OJT. PWDs are mainly having less accessibility to employment, since they are mostly undermined by the employers whether they can perform duties appropriately. In case of PWDs the situation is better other than employment accessibility, while 2.9% only say that they face discrimination and stereotypes in the training institutes and 1.6% says that are in their workplaces/OJT (ref. annex 9 of table 9.12 to 9.15). Whatsoever, the area specific situations of discrimination and stereotypes the FGD findings are as follows in Table 11.

Table 11: Area specific situations of discrimination and stereotypes

Catchment	Discrimination and stereotypes faced by women and PWDs
Gaibandha	According to women entrepreneurs, disadvantaged people are not generally welcomed to the industries (job markets, even if a few are employed they are discriminated by wage as they are considered less productive. Chamber of commerce says that employers as a whole are not willing to recruit disabled, women and ethnic minorities in a fear of less productivity, and even if employed they are discriminated against the mainstream in wage and other privileges.
Jamalpur	Women face discrimination in wage, even though they work no less than their men counterparts. As said, business associations are taking care the issues whenever raised to them.
Sylhet	Many industries and individual employers are reluctant about recruiting women and DAPs, as women entrepreneurs opined. According to chamber of commerce, women are now getting almost equal opportunities in jobs, although some social restrictions are outside there (i.e. travelling and working at night alone). BSCIC sources say that generally employers are not willing to offer jobs to PWDs, and some are reluctant towards women as they think that women and PWDs are not suitable for jobs.
Feni	The district is termed as conservative area. Employers are reluctant in offering jobs to women and PWDs. According to Chamber of Commerce, sometimes disadvantaged face discrimination in their salaries and working conditions. Women face sexual harassment and violence in a few cases.
Rangamati	Discrimination exist between ethnic (i.e. tribes) and Bengali (i.e. non tribes) population, when non-tribes are involved in wood business impacting on the tribal engagement to be narrowing income opportunity, as per opinion of women entrepreneurs. BSCIC says that no discrimination are exist between male and female; and tribal people are more employed than non-tribal due to preservation of quota system.
Khulna	Good and fair jobs are not available for disadvantaged, some industries are giving opportunity for women. But women face discrimination even afterwards based on their wage and engagement levels (their capacity is generally undermined, and they are placed at lower level of job status), as per women entrepreneurs.
Bagerhat	Employment are not available for disadvantaged, especially for PWDs as employers are not interested about them. Even if jobs are given to them, they are poor salaried. As per chamber of commerce, general intentions of employers are not good about women and PWDs; while BSCIC supports the opinions of others.

The area-wise situation relating to the existing discrimination and stereotypes that women and PWDs face in their everyday lives provides a grave indication; while most respondents are found to be unaware of the ways and means to address the issues. There is only overcoming strategy suggested is that to undertake awareness raising activities among the employers (those who are unwilling to recruit). Such awareness raising campaigns are indicated that those should pin-point the issues of the human rights to having equal access to employment for all, and then on the ice-breaking of traditional beliefs of the employers that women and PWDs are not capable enough in terms of their business productivity. Apart from these, there should be clear public policies and strategies in place and functional to make employers aware and legally bound to provide equal opportunities for all. More importantly, industries and employers should be taken into a common framework of understanding and orientation programmes by the government line departments to make sure that discrimination are not tolerated at workplaces to men and women, and irrespective of their physical conditions.

5.4 Skills needs analysis

5.4.1 Type of skills required for employment in the labour market

The research identifies type of occupational skills available/required for employment in the present labour market that are varied among the catchment areas. However, it does not find specific skills requirement for disadvantaged except women. Green skills and entrepreneurships are yet not emphasized in the industries. The catchment area wise occupational skills requirements, as demanded by employers themselves, TVET graduates – both employed and unemployed, non-trained workers, and from the observation of the local TVET providers are presented below in Table 12 (Catchment 1 to 7).

Table 12: Occupational Skills Requirement in 7 Catchments Area (Catchment 1 to 7)

Catchment 1: Khulna (Occupational Skills Requirement)

Industry Sectors (IS)	#	Occupational skills	% Demand/requirements by category of research respondents									
			Employer	Graduates employed		Unemployed/ Fresh Grad		Non-trained Workers		TVET Providers		Overall	
				Male	Fem	Male	Fem	Male	Fem	Male	Fem	Male	Fem
Construction	1	Electric House Wiring	11.1	20.0	14.3	-	-	-	30.0	62.5	-	17.9	10.4
	2	Plumbing & Pipe Fittings	22.2	-	-	-	-	-	-	12.5	-	7.7	-
	3	Welding and Fabrication	11.1	-	-	-	-	-	-	37.5	-	10.3	-
	4	Auto CAD	-	60.0	14.3	-	-	-	-	12.5	-	10.3	4.2
	5	Aluminum Fabrication	22.2	-	-	-	-	-	-	-	-	2.6	2.1
FM	6	Carpentry	33.3	-	-	-	-	-	-	-	-	5.1	2.1
Informal	7	Sofa, Rickshaw seat making	11.1	-	-	-	-	-	20.0	-	-	2.6	4.2
	8	Mobile Phone Servicing	-	-	57.1	-	-	10.0	-	25.0	-	7.7	16.7
	9	Dressmaking & Tailoring	-	60.0	64.3	85.7	60.0	70.0	30.0	37.5	-	48.7	43.8
	10	Block, Batik and Printing	-	-	-	-	20.0	40.0	30.0	25.0	-	15.4	12.5
	11	Beautician (beauty care)	-	-	-	-	-	20.0	30.0	25.0	-	10.3	6.3
	12	Fashion Designing	-	-	-	-	-	10.0	-	-	-	2.6	-
	13	Fish Culture & Breeding	-	-	-	-	-	20.0	-	25.0	-	10.3	-
	14	Jute Bag & Box Making	44.4	-	-	-	-	20.0	-	-	-	10.3	4.2
IT	15	Computer Application	22.2	80.0	14.3	85.7	53.3	40.0	20.0	12.5	-	41.0	27.1
	16	Graphic Design & Multimedia	-	40.0	35.7	14.3	20.0	10.0	10.0	12.5	-	12.8	18.8
	17	Web Design & Development	-	-	-	-	-	10.0	-	-	-	2.6	-
	18	Outsourcing	-	-	-	-	-	-	-	25.0	-	5.1	-
	19	IT Support Technician	-	-	-	-	6.7	-	-	25.0	-	5.1	2.1
LE	20	Refrigeration & Air Conditioning	22.2	-	-	-	-	-	-	-	-	2.6	2.1
	21	General Mechanics	44.4	-	-	-	13.3	10.0	-	-	-	10.3	6.3
	22	Machine Tools Operation (Machinist)	22.2	20.0	7.1	-	6.7	-	-	12.5	-	10.3	4.2
RMG &Textile	23	Sewing Machine Operation	56.6	-	14.3	-	6.7	-	10.0	25.0	-	10.3	14.6
AFP	24	Dairy Farm Management	-	-	-	-	-	20.0	-	12.5	-	7.7	-
		Food Processing & Preservation	-	-	-	-	-	10.0	-	-	-	2.6	-
TE	25	Automobile Driving	-	-	-	-	-	30.0	20.0	25.0	-	12.8	4.2
T&HM	26	Housekeeping	-	-	-	-	-	-	-	12.5	-	2.6	-

T&HM: Tourism & Hospitality Management; TE: Transport Equipment; AFP: Agro Food Processing; RMG: Ready Made Garments; IT: Information Technology; FM: Furniture Manufacturing

Catchment 2: Bagerhat (Occupational Skills Requirement)

Industry Sectors (IS)	#	Occupational skills	% Demand/requirements by category of research respondents									
			Employer	Graduates employed		Unemployed/ Fresh Grad		Non-trained Workers		TVET Providers		Overall	
				Male	Fem	Male	Fem	Male	Fem	Male	Fem	Male	Fem
Construction	1	Electrical House Wiring	33.3	-	9.1	-	-	30.0	50.0	87.5	-	29.8	13.0
	2	Auto CAD	-	-	-	23.1	-	-	-	-	-	6.4	-
	3	Civil Construction	-	-	-		-	-	-	25.0	-	4.3	-
	4	Welding & Fabrication	16.7	-	-	-	-	30.0	30.0	12.5	-	12.8	6.5
Informal	5	Sofa, Rickshaw Seat Making	25.0	-	-	7.7	25.0	30.0	10.0	-	-	12.8	10.9
	6	Mobile Phone Servicing	-	50.0	54.5	38.5	-	10.0	30.0	-	-	17.0	19.6
	7	Dressmaking & Tailoring	-	75.0	18.2	38.5	33.3	20.0	10.0	-	100.0	21.3	17.4
	8	Block, Batik and Printing	-	-	-	7.7	8.3	-	30.0	-	-	2.1	8.7
	9	Fashion Designing	-	-	-	-	8.3	-	30.0	-	-	-	8.7
	10	Handicrafts (Bamboo/cane/other)	-	-	-	-	-	20.0	-	-	-	4.3	-
	11	Beautician (beauty care)	-	-	-	-	-	10.0	20.0	-	-	2.1	4.3
	12	Jute Bag & Box Making	-	-	-	-	-	-	30.0	-	-	-	6.5
	13	Poultry Rearing & Farming	-	-	-	-	-	10.0	-	-	-	2.1	-
	14	Fish Culture and Breeding	-	-	-	-	8.3	-	30.0	25.0	-	4.3	8.7
	15	Solar Technician	-	-	-	-	-	10.0	10.0	12.5	-	4.3	2.2
IT	16	Computer Application	16.6	25.0	72.7	61.5	50.0	20.0	10.0	87.5	-	40.4	34.8
	17	Graphic Design & Multimedia	-	-	-	30.8	8.3	-	10.0	-	-	8.5	4.3
	18	Web Design & Development	-	-	-	-	-	-	20.0	-	-	-	4.3
	19	Outsourcing	-	50.0	-	-	8.3	-	-	12.5	-	6.4	2.2
LE	20	General Mechanics	74.9	-	-	-	8.3	-	-	-	-	17.0	4.3
	21	CNC Machine Operation (Lethe)	-	-	-	-	-	-	10.0	-	-	-	2.2
	22	MTO (Machinist)	25.0	-	-	-	-	40.0	40.0	50.0	-	21.3	10.9
AFP	23	Dairy Farm Management	-	25.0	9.1	23.1	-	10.0	40.0	-	-	10.6	10.9
	24	Food Processing & Preservation	-	-	-	-	-	30.0	30.0	-	100.0	6.4	8.7
TE	25	Automobile Mechanics	-	-	18.2	-	-	10.0	-	-	-	2.1	-
	26	Driving	-	-	-	7.7	-	10.0	10.0	25.0	-	6.4	2.2
RMG &Textile	27	Sewing Machine Operation	-	-	-	-	-	30.0	10.0	-	-	6.4	2.2

TE: Transport Equipment; AFP: Agro Food Processing; RMG: Ready Made Garments; IT: Information Technology

Catchment 3: Sylhet (Occupational Skills Requirement)

Industry Sectors (IS)	#	Occupational skills	% Demand/requirements by category of research respondents									
			Employer	Graduates employed		Unemployed/ Fresh Grad		Non-trained Workers		TVET Providers		Overall	
				Male	Fem	Male	Fem	Male	Fem	Male	Fem	Male	Fem
Construction	1	Electrical House Wiring	40.0	16.7	-	-	14.3	57.9	31.8	100.0	50.0	40.0	58.1
	2	Plumbing & Pipe Fittings	10.0	5.6	-	-	-	21.1	11.4	-	25.0	10.0	19.4
	3	Auto CAD	-	5.6	-	28.6	-	-	-	-	-	5.0	-
	4	Building & Architectural Drafting	-	-	-	-	7.1	-	-	-	-	-	3.2
	5	Tiles setting	-	-	-	-	-	5.3	2.3	-	-	1.7	3.2
	6	Lift operation	-	-	-	-	-	-	-	16.7	-	1.7	-
	7	Welding & Fabrication	20.0	-	-	-	-	21.1	9.1	33.3	25.0	13.3	16.1
FM	8	Lacquer Polishing	30.0	-	33.3	-	-	10.5	4.5	-	-	6.7	12.9
	9	Wood Working	10.0	-	-	-	-	10.5	4.5	-	-	5.0	6.5
	10	Carpentry	20.0	-	-	-	-	-	-	-	-	3.3	-
Informal	11	Sofa, Rickshaw Seat Making	10.0	-	-	-	-	-	-	-	-	1.7	-
	12	Mobile Phone Servicing	-	5.6	33.3	-	50.0	21.1	11.4	16.7	-	10.0	41.9
	13	Dressmaking & Tailoring	-	50.0	66.7	42.9	21.4	15.8	34.1	33.3	25.0	28.3	67.7
	14	Block, Batik and Printing	-	-	-	-	7.1	-	-	-	-	-	3.2
	15	Fashion Designing	-	-	-	14.3	7.1	-	2.3	-	-	1.7	6.5
	16	Handicrafts (Bamboo/cane/other)	-	5.6	-	-	-	-	-	-	-	1.7	-
	17	Beautician (beauty care)	10.0	-	33.3	-	7.1	5.3	2.3	33.3	75.0	5.0	22.6
	18	Poultry Rearing & Farming	-	-	-	-	7.1	-	-	-	-	-	3.2
T&HM	19	Food & Beverage Services	10.0	-	66.7	-	-	-	-	-	-	1.7	6.5
	20	Hotel Management	-	-	-	-	-	-	-	-	25.0	-	3.2
	21	Housekeeping	-	-	-	-	-	-	-	16.7	25.0	1.7	3.2
	22	Catering	-	22.2	-	-	35.7	15.8	15.9	16.7	75.0	13.3	48.4
IT	23	Computer Application	-	66.7	33.3	100.0	35.7	5.3	45.5	50.0	50.0	38.3	90.3
	24	Graphic Design & Multimedia	-	5.6	-	28.6	21.4	-	-	-	50.0	5.0	16.1
	25	IT Support Technician	-	-	-	-	-	-	-	-	25.0	-	3.2
	26	Outsourcing	-	16.7	-	28.6	7.1	-	-	16.7	25.0	10.0	6.5
LE	27	Refrigeration & Air Conditioning	-	-	-	-	7.1	26.3	11.4	50.0	25.0	13.3	22.6
	28	CNC Machine Operation (Lethe)	-	-	-	-	-	10.5	4.5	16.7	-	5.0	6.5
	29	MTO (Machinist)	-	-	-	-	-	15.8	6.8	50.0	-	10.0	9.7
AFP	30	Food Processing & Preservation	10.0	-	-	-	-	-	-	-	-	1.7	-
TE	31	Automobile Mechanics	-	5.6	-	-	-	52.6	25.0	16.7	-	20.0	35.5
	32	Driving	-	16.7	33.3	-	21.4	42.1	25.0	-	75.0	18.3	58.1
RMG &Textile	33	Sewing Machine Operation	-	-	-	-	-	15.8	6.8	33.3	25.0	8.3	12.9
Others	34	Medical Technology (pathologist)	-	-	-	-	-	-	-	-	25.0	-	3.2

Catchment 4: Gaibandha (Occupational Skills Requirement)

Industry Sectors (IS)	#	Occupational skills	% Demand/requirements by category of research respondents									
			Employer	Graduates employed		Unemployed/ Fresh Grad		Non-trained Workers		TVET Providers		Overall	
				Male	Fem	Male	Fem	Male	Fem	Male	Fem	Male	Fem
AFP	1	Rice Processing	10.0	33.3	-	-	15.4	5.0	-	-	-	7.7	5.9
	2	Dairy Farm Management	-	-	-	-	-	10.0	-	-	-	3.8	-
	3	Puffed & Flattened Rice Processing	-	-	-	-	-	15.0	-	-	-	5.8	-
	4	Food Processing & Preservation	20.0	-	-	-	-	-	-	33.3	25.0	5.8	5.9
Construction	5	Electrical House Wiring	70.0	-	-	-	7.7	60.0	100.0	100.0	75.0	46.2	17.6
	6	Auto CAD	-	-	-	20.0	-	-	-	-	-	3.8	-
	7	Welding & Fabrication	20.0	-	-	-	-	115.0	-	-	-	5.8	-
FM	8	Carpentry	10.0	-	-	-	-	-	-	-	-	1.9	-
	9	Lacquer Polishing	-	-	-	-	7.7	5.0	-	-	-	1.9	2.9
LE	10	General Mechanics	50.0	16.7	-	-	-	-	-	-	-	11.5	-
	11	MTO (Machinist)	-	-	-	-	-	25.0	100.0	-	25.0	9.6	5.9
	12	CNC Machine Operation (Lethe)	20.0	-	-	-	-	-	-	-	-	3.8	-
Informal	13	Mobile Phone Servicing	-	-	16.7	40.0	23.1	10.0	-	33.3	75.0	15.4	20.6
	14	Dressmaking & Tailoring	-	33.3	83.3	40.0	30.8	10.0	-	-	50.0	15.4	20.6
	15	Block, Batik and Printing	-	-	-	10.0	15.4	-	100.0	-	-	1.9	8.8
	16	Handicrafts (Bamboo/cane/other)	-	-	-	-	-	5.0	100.0	-	-	1.9	2.9
	17	Beautician (beauty care)	-	-	-	-	-	5.0	-	-	-	1.9	-
	18	Fashion Designing	-	-	-	-	-	5.0	100.0	-	-	1.9	2.9
	19	Fish Culture & Breeding	-	-	-	-	-	5.0	-	-	-	1.9	-
IT	20	Computer Application	-	83.3	83.3	60.0	76.9	60.0	-	100.0	75.0	55.8	52.9
	21	Outsourcing	-	-	16.7	-	7.7	-	-	16.7	25.0	1.9	8.8
	22	IT Support Technician	-	-	-	-	-	5.0	100.0	-	-	1.9	2.9
	23	Web Design and Development	-	-	-	-	-	5.0	-	-	-	1.9	-
	24	Graphic Design & Multimedia	-	16.7	16.7	20.0	-	15.0	-	50.0	25.0	17.3	5.9
RMG & Textile	25	Sewing Machine Operation	-	66.7	33.3	60.0	23.1	15.0	-	66.7	50.0	32.7	20.6
TE	26	Driving	-	-	-	10.0	15.4	65.0	100.0	16.7	25.0	28.8	11.8
	27	Automobile Mechanics	-	-	-	-	-	-	-	33.3	-	3.8	-

TE: Transport Equipment; AFP: Agro Food Processing; RMG: Ready Made Garments; IT: Information Technology; FM: Furniture Manufacturing

Catchment 5: Jamalpur (Occupational Skills Requirement)

Industry Sectors (IS)	#	Occupational skills	% Demand/requirements by category of research respondents									
			Employer	Graduates employed		Unemployed/ Fresh Grad		Non-trained Workers		TVET Providers		Overall	
				Male	Fem	Male	Fem	Male	Fem	Male	Fem	Male	Fem
Construction	1	Electrical House Wiring	80.0	-	16.7	-	18.2	30.8	12.5	50.0	-	23.2	13.9
	2	Plumbing & Pipe Fittings	-	-	-	-	-	15.4	-	-	-	3.6	-
	3	Welding & Fabrication	10.0	-	-	-	-	38.5	-	-	-	10.7	-
IT	4	Computer Application	40.0	72.2	66.7	63.6	63.6	53.8	12.5	25.0	-	57.1	44.4
	5	Graphic Design & Multimedia	-	44.4	50.0	36.4	45.5	15.4	12.5	25.0	-	26.8	25.0
	6	Outsourcing	-	-	16.7	18.2	18.2	-	-	50.0	-	7.1	8.3
	7	IT Support Technician	-	11.1	-	-	-	-	-	-	-	3.6	-
LE	8	Refrigeration & Air Conditioning	-	-	-	-	-	7.7	-	50.0	-	7.1	8.3
	9	General Mechanics	20.0	-	-	9.1	9.1	-	-	-	-	3.6	5.6
	10	Consumer Electronics	-	-	16.7	18.2	-	-	-	-	-	3.6	2.8
	11	MTO (Machinist)	60.0	-	16.7	-	-	7.7	-	-	100.0	10.7	8.3
L&LG	12	Machine Operation (footwear)	10.0	-	16.7	9.1	-	-	-	-	-	3.6	2.8
RMG & Textile	13	RMG Supervisor	20.0	-	-	-	-	-	-	-	-	3.6	5.6
	14	Sewing Machine Operation	-	16.7	-	-	-	-	-	-	-	5.4	-
	15	Weaving (textile)	-	-	-	-	-	-	12.5	-	-	-	2.8
	16	Quality Checker	20.0	-	-	-	-	-	-	-	-	1.8	2.8
TE	17	Automobile Mechanics	-	-	-	-	-	7.7	37.5	-	-	1.8	8.3
	18	Automobile Driving	40.0	-	-	-	-	15.4	12.5	-	-	8.9	5.6
AFP	19	Food Processing & Preservation	-	-	-	-	9.1	-	12.5	-	-	-	5.6
	20	Dairy Farm Management	-	-	-	-	-	7.7	-	-	-	1.8	-
Informal	21	Mobile Phone Servicing	-	-	-	-	-	7.7	12.5	-	-	1.8	2.8
	22	Dressmaking & Tailoring	-	38.9	-	27.3	9.1	38.5	50.0	25.0	-	28.6	13.9
	23	Block, Batik and Printing	-	11.1	-	-	9.1	30.8	12.5	25.0	100.0	12.5	8.3
	24	Handicrafts (Bamboo/cane/other)	-	-	-	9.1	-	30.8	50.0	75.0	-	14.3	11.1
	25	Beautician (beauty care)	-	-	-	-	-	15.4	25.0	-	100.0	3.6	8.3
T&HM	26	Catering	-	-	-	-	-	-	-	25.0	-	1.8	-

L&LG: Leather and Leather Goods; T&HM: Tourism & Hospitality Management

Catchment 6: Rangamati (Occupational Skills Requirement)

Industry Sectors (IS)	#	Occupational skills	% Demand/requirements by category of research respondents									
			Employer	Graduates employed		Unemployed/ Fresh Grad		Non-trained Workers		TVET Providers		Overall	
				Male	Fem	Male	Fem	Male	Fem	Male	Fem	Male	Fem
Construction	1	Electrical House Wiring	10.0	-	-	7.1	-	37.5	36.4	100.0	33.3	19.2	16.1
	2	Civil Construction	-	-	-	-	-	-	-	-	33.3	-	3.2
	3	Welding & Fabrication	-	-	-	-	-	25.0	-	-	-	3.8	-
FM	4	Wood Working	20.0	-	-	-	-	-	-	-	-	3.8	-
	5	Carpentry	40.0	-	-	-	-	25.0	18.2	20.0	-	11.5	9.7
LE	6	General Mechanics	10.0	-	-	-	-	-	-	-	-	1.9	-
	7	Refrigeration & Air Conditioning	-	-	-	-	-	-	-	20.0	-	1.9	-
RMG & Textile	8	Sewing Machine Operation	60.0	-	-	-	-	-	-	-	-	5.8	9.7
	9	Colour Master (Dyeing)	10.0	-	-	-	-	-	-	-	-	1.9	-
	10	Weaving (textile)	20.0	-	-	7.1	16.7	-	27.3	-	-	3.8	16.1
IT	11	Computer Application	-	86.7	100.0	78.6	50.0	62.5	90.9	80.0	66.7	63.5	51.6
	12	Graphic Design & Multimedia	-	60.0	100.0	28.6	16.7	-	27.3	-	33.3	25.0	19.4
	13	IT Support Technician	-	-	-	7.1	-	-	-	20.0	-	3.8	-
	14	Outsourcing	-	-	-	-	-	-	-	20.0	-	1.9	-
T&HM	15	Catering	-	-	-	-	50.0	-	-	-	-	-	9.7
	16	Travel & Tourism Operation	-	-	-	7.1	-	-	-	-	-	1.9	-
AFP	17	Food Processing & Preservation	-	-	-	-	-	-	18.2	-	-	-	6.5
Informal	18	Dressmaking & Tailoring	30.0	33.3	-	64.3	-	25.0	54.5	60.0	33.3	40.4	25.8
	19	Mobile Phone Servicing	-	-	-	-	-	-	9.1	20.0	33.3	1.9	6.5
	20	Block, Batik and Printing	-	-	-	-	-	12.5	-	20.0	-	3.8	-
	21	Handicrafts (Bamboo/cane/other)	-	-	-	-	-	-	45.5	-	-	-	16.1
	22	Beautician (beauty care)	-	-	-	-	-	37.5	54.5	60.0	66.7	11.5	25.8
	23	Candle Making	-	-	-	-	-	-	9.1	-	-	-	3.2
	24	Solar Technician	-	-	-	-	-	12.5	9.1	-	-	1.9	3.2
TE	25	Automobile Driving	-	-	-	-	-	-	-	-	33.3	-	3.2

T&HM: Tourism & Hospitality Management; TE: Transport Equipment; AFP: Agro Food Processing; RMG: Ready Made Garments; IT: Information Technology; FM: Furniture Manufacturing

Catchment 7: Feni (Occupational Skills Requirement)

Industry Sectors (IS)	#	Occupational skills	% Demand/requirements by category of research respondents									
			Employer	Graduates employed		Unemployed/ Fresh Grad		Non-trained Workers		TVET Providers		Overall	
				Male	Fem	Male	Fem	Male	Fem	Male	Fem	Male	Fem
AFP	1	Baking (bread & biscuits)	44.4	-	-	-	-	-	-	-	-	2.9	13.3
	2	Food Grain Machine Operation	22.2	-	-	-	-	-	-	-	-	1.4	6.7
Construction	3	Electrical House Wiring	11.1	-	33.3	11.8	100.0	44.4		50.0	-	21.7	13.3
	4	Auto CAD	-	17.6	-	11.8	-	-	-	-	-	7.2	-
	5	Plumbing & Pipe Fittings	-	-	-	-	-	38.9	100.0	37.5	-	14.5	6.7
	6	Welding & Fabrication	-	-	-	-	-	33.3	100.0	-	-	8.7	6.7
	7	Civil Construction	-	-	-	-	-	-	-	12.5	-	1.4	-
	8	Building & Architectural Drafting	-	-	-	5.9	-	-	-	-	-	1.4	-
FM	9	Carpentry	11.1	-	-	-	-	-	-	-	-	1.4	-
Informal	10	Mobile Phone Servicing	-	-	66.7	5.9	-	11.1		12.5	100.0	5.8	20.0
	11	Dressmaking & Tailoring	-	88.2	66.7	70.6	100.0	5.6	100.0	12.5	-	42.0	26.7
	12	Block, Batik and Printing	11.1	5.9	-	-	-	-	-	-	-	2.9	-
	13	Beautician (beauty care)	-	-	-	-	-	5.6	-	-	-	1.4	-
	14	Embroidery Works	-	-	-	-	-	22.2	-	-	-	5.8	-
	15	Poultry Rearing and Firming	11.1	-	-	-	-	-	-	-	-	1.4	-
	16	Fish Culture & Breeding	11.1	-	-	-	-	-	-	-	-	1.4	-
IT	17	Computer Application	22.2	52.9	-	82.4	100.0	11.1	-	12.5	100.0	39.1	20.0
	18	Graphic Design & Multimedia	11.1	-	-	17.6	-	5.6	-	37.5	-	11.6	-
	19	Web Design & Development	-	-	-	-	-	5.6	-	37.5	-	5.8	-
	20	IT Support Technician	-	-	-	-	-	-	-	37.5	-	4.3	-
	21	Outsourcing	-	23.5	-	5.9	-	-	-	-	-	7.2	-
LE	22	Refrigeration & Air Conditioning	11.1	11.8	33.3	-	-	27.8	-	62.5	-	18.8	6.7
	23	General Mechanics	22.2	-	-	-	-	-	-	-	-	2.9	-
	24	Consumer Electronics	-	-	-	5.9	-	-	-	-	-	1.4	-
	25	CNC Machine Operation (Lethe)	-	-	-	-	-	22.2	100.0	-	-	5.8	6.7
	26	MTO (machinist)	55.2	-	-	-	-	22.2	-	-	-	10.1	13.3
RMG & Textile	27	Sewing Machine Operation	22.2	11.8	-	5.9	-	11.1	-	-	-	8.7	6.7
	28	Quality Checking	22.2	-	-	-	-	-	-	-	-	1.4	6.7
	29	RMG Supervising	11.1	-	-	-	-	-	-	-	-	1.4	-
T&HM	30	Catering	-	5.9	-	-	-	-	-	-	100.0	1.4	6.7
TE	31	Automobile Mechanics	-	5.9	33.3	-	-	16.7	-	37.5	-	10.1	6.7
	32	Automobile Driving	-	-	-	-	-	16.7	-	25.0	-	7.2	-

T&HM: Tourism & Hospitality Management; TE: Transport Equipment; AFP: Agro Food Processing; RMG: Ready Made Garments; IT: Information Technology; FM: Furniture Manufacturing

Upon the choices of demand by different categories of respondent the research finds a total of 57 varieties of occupational skills, most of those availability and requirements are found to be under the 11 out of 12 Industry Sector Councils (i.e. ISCs) already established under the National Skills Development Council (NSDC); while a few skills identified that falls under other industries like jute, chemical, and healthcare. The Table 13 below is the consolidated occupational skills as categorized by Industry Sectors as a whole.

Table 13: The consolidated occupational skills as categorized by Industry Sectors as a whole

Industry Sectors	*Skills Nos.*	*Occupational skills requirement*
Agro Food Processing	1	Dairy Firm Management
	2	Food Processing and Preservation
	3	Rice Processing
	4	Puffed and Flattened Rice Processing
	5	Baking (bread and biscuits)
	6	Food Grain Machine Operation
Construction	7	Electrical House Wiring
	8	Plumbing and Pipe Fitting
	9	Welding and Fabrication
	10	Auto CAD
	11	Aluminum Fabrication
	12	Dairy Farm Management
	13	Food Processing and Preservation
	14	Civil Construction
	15	Building and Architecture Drafting
	16	Tiles Setting
	17	Lift Operation
Furniture manufacturing	18	Carpentry
	19	Lacquer Polishing
	20	Wood Working
Information Technology (IT)	21	Computer Application
	22	Graphic Design and Multimedia
	23	Web Design and Development
	24	IT Support Technician
	25	Outsourcing
Light Engineering	26	Refrigeration and Air Conditioning (RAC)
	27	General Mechanics
	28	Machine Tools Operation (Machinist)
	29	CNC Machine Operation (Lethe)
	30	Consumer Electronics
RMG and Textiles	31	Sewing Machine Operation
	32	Supervising
	33	Weaving (textile)
	34	Quality Checking
	35	Color Master (Dyeing)
Transport Equipment	36	Driving Automobile
	37	Automobile Mechanics
Tourism and Hospitality	38	Housekeeping
	39	Food and Beverage Service

Industry Sectors	*Skills Nos.*	*Occupational skills requirement*
	40	Hotel Management
	41	Catering
	42	Travel and Tourism Operation
Informal	43	Mobile Phone Servicing
	44	Sofa, Rickshaw Seat (with coconut fiber) Making
	45	Dressmaking and Tailoring
	46	Block, Batik and Printing
	47	Beautician (beauty care)
	48	Fashion Designing
	49	Fish Culture and Breeding
	50	Jute Bag and Box Making
	51	Handicrafts (bamboo, care and other) production
	52	Solar Technician
	53	Poultry Rearing and Firming
	54	Candle Making
	55	Embroidery Works
Leather and Leather Goods	56	Machine Operation (footwear)
Pharmaceuticals	57	Medical Technology (Pathologist)

5.4.2 List of TVET training institutions and their programmes being offered

The research covers a total of 59 TVET institutions (Including seven selected model institutes) from seven different catchment areas. The findings related to TVET institutions and their current programmes are based on these institutes intervened, and do not necessarily reflects on the TVET provides as a whole. However, as of the findings (based on multiple – more than one response) 37.3% TVET institutions select their training programmes based on job market survey, 59.3% select programmes based on local labour market needs analysis, 35.6% select programmes based on informal discussions with relevant industry associations, and 33.9% adopt programmes that come from relevant government decisions (ref. annex 12.1 of table 12.9). While 59.3% TVET providers implement programmes targeting domestic and abroad job markets, 57.6% target employment opportunities within and adjacent districts, 30.5% target particular industry sector (used to call them demand driven), and the top group (61%) considers opportunity of self-employment first (ref. annex 12.1 of table 12.6). These provide a mixed and volatile scenario on how and what basis the TVET institutions select their programmes. However, the research uses the findings mixing with the locally demanded occupational skills as presented in the previous sub-section (5.4.1). As of that, the list of TVET institutions per catchment area and their current programmes with types are provided below in Table 14:

Table 14: The list of TVET institutions per catchment area and their current programmes with types (Catchment 1 to 7)

Catchment (1) **Khulna**			
No.	**Name of TVET Institution**	**Programmes that are currently being offered**	
		Demand-driven	***Traditional***
1	Technical Training Center (TTC),	Auto Mechanics with driving Machine Tools Operation	2 years SSC Voc Electronics

Catchment (1) **Khulna**			
No.	**Name of TVET Institution**	**Programmes that are currently being offered**	
		Demand-driven	***Traditional***
	Khulna	RAC Welding and Fabrication Computer Operation Mid-level Garments Supervisor Quality Control Management Auto CAD (2D-3D) Graphics & Design Industrial Carpentry Pipe Fitter Sewing Machine Operator Tiles Fixer Solar Energy Technician	Mechanical Fitter Electrical Machine Maintenance Electrician Shuttering Mason 1) TIG & MIG Welding 2) Rod Binding and Scaffolding
2	Khulna Mohila Polytechnic Institute	No short courses	Diploma Course (one Year Course): 1) Civil 2) Computer 3) Electronics 4) Architectural and Interior Design 5) Environmental Technology
3	Mangrove Specialized Technical Training Center (private)	Computer Office Application Auto CAD (2D-3D) Welding Industrial Sewing Machine Operator & Maintenance	Diploma in Engineering
4	Mohila TTC, Khulna	Computer Operation Garments and Dress Making Dying Printing and Block Batik Architectural Drafting with CAD Fruit and Food Processing and Preservation House Keeping	**Certificate:** SSC Voc **Basic courses** on: General Electronics Oven Machine Operator
5	Asia Technical Training Center (private)	Computer Office Application Graphic Design & Multimedia Auto CAD (2D-3D) Electrical House Wiring Dress Making & Tailoring Beauty Parlor RAC Mobile Phone Servicing Block Batik and Printing Driving cum Auto Mechanics	Computer Database Programming Hardware and Networking Apparel Merchandizing
6	UCEP Bangladesh (NGO)	Auto Mechanics Motor Cycle Service Mechanics Welder Machinist RAC	**SSC Voc on:** Electrical & Mechanics **Basics on:** Masonry Electrical Installation &

Catchment (1) **Khulna**			
No.	**Name of TVET Institution**	**Programmes that are currently being offered**	
		Demand-driven	***Traditional***
		Industrial Sewing Operation Tailoring and Dress Making Mobile Phone Servicing	Maintenance Industrial Electrical Maintenance Electrician

Catchment (2) **Bagerhat**			
No.	**Name of TVET Institution**	**Programmes that are currently being offered**	
		Demand-driven	***Traditional***
1	Institute of Marine Technology (IMT)	**Short Courses:** Computer Application Electrical Wiring CNC Lathe Machine Operation	**Diploma Course:** Marine Technology Shipbuilding **Basic:** Spoken English
2	Technical School and College (TSC)	**Short Courses:** Computer operator Welding and fabrication RAC Electrical house wiring	
3	Khan Jahan Ali Technical College	**Short Courses:** Weaving Computer operator Electronics Carpentry Lacquer polish operator	
4	Sakina Azhar Technical College	**Short Courses:** Electronics Electrical house wiring RAC Computer operator	
5	Youth Development Training Center, District Youth Development Office	Computer Basic Course Electrical RAC	
6	Women Training Center, District Women Affairs Office	Computer Jute Bag Making Beautification Block Batik	Doormat

Catchment (3) **Sylhet**			
No.	**Name of TVET Institution**	**Programmes that are currently being offered**	
		Demand-driven	***Traditional***
1	Sylhet Technical Training Institute (STTI) - private	Computer Office Application Graphics Design and Multimedia Refrigeration and Air Conditioning (RAC) Plumbing and Pipe Fitting Mobile Engineering-STTI	Hardware and Networking-RTO Database Programming-RTO Spoken English/IELTS-STTI Youtube Marketing & Video Editing-STTI Affiliate and CPA Marketing-STTI

Catchment (3) **Sylhet**			
No.	**Name of TVET Institution**	**Programmes that are currently being offered**	
		Demand-driven	***Traditional***
		Tailoring and Dressmaking-STTI Electrical and House wiring-STTI Web Development & Outsourcing-STTI Web Design + Outsourcing-STTI	Wordpress Theme Customization + Outsourcing-STTI Digital Marketing-STTI SEO + Outsourcing-STTI
2	Sylhet Mohila Technical Training Center (SMTTC)	Architectural Drafting with Auto CAD-RTO Garments (Industrial Dressmaking and Embroidery)-RTO Garments (Pattern Making, Marker Making and Design)-RTO	General Electronics (Computer Hardware)-RTO
3	Bangladesh Technical Training and Development Center (BTTDC) – private	Plumbing-RTO Tiles and Marvel Works-RTO Steel Binding and Fabrication	Masonry-RTO Electrical Installation and Maintenance-RTO
4	Sylhet Technical Training Center (STTC)	Refrigeration and Air Conditioning (RAC)-RTO Electrical-RTO Computer Training Course-RTO Catering (The Professional Chef)-RTO Driving-RTO	Automotive-RTO Electronics-RTO
5	Sylhet Modern Technical Training Center (private)	Computer Office Application Computer Graphic Design Mobile Engineering Motor Driving Tailoring and Dressmaking Cristal, Mom-Showpiece, Block and Boutique Electrical and House Wiring Fridge and Air Condition (RAC)	Internet, E-mail and Browsing Advance Computer Office Application Computer Hardware Engineering Arabic and Urdu Typing Spoken English Shorthand Certificate in C/C ++Programming Certificate in Java Programming Certificate in Database Programming Certificate in Web Design Spoken English + Computer (for Children) Tourism
6	Golden Technical Training Center	**Short Course:** Masonry Plumbing and pipe fittings Electrical house wiring Tiles and marble works (ceramics) Rod binding and fabrication (steel binding)	
7	Ideal Technical Training Center	**Short Course:** Mobile servicing	

Catchment (3) **Sylhet**			
No.	**Name of TVET Institution**	**Programmes that are currently being offered**	
		Demand-driven	***Traditional***
		Sewing machine operator Computer operator	
8	Sylhet ITCT	**Short Course:** Tailoring and dressmaking Cristal show piece making Candle and aluminum show piece making Block and boutique Handicrafts (jute)	
9	Shahjalal Technical Training Center	**Short Course:** RAC Computer operator Mobile servicing Sewing machine operator Electrical house wiring Computer hardware and networking Graphic design	
10	Bishmillah Computer Training Center	**Short Course:** Auto CAD Computer hardware and networking Graphic design	

Catchment (4) **Gaibandha**			
No.	**Name of TVET Institution**	**Programmes that are currently being offered**	
		Demand-driven	***Traditional***
1	Gaibandha TTC (public – model)	Machine Tools Operation Garments (Sewing Machine Operator) Welding & Fabrication Computer Operation Graphic Design Dyeing Printing and Block Batik Motor Driving CNC Machine Operator	General Electrical Works IT Support Electrical Automotive
2	Gono Unnayan Kendra (GUK)	**Short Course:** Sewing machine operator Mobile servicing ICT Graphic design Electronics Food processing and Preservation Food and beverage service	
3	Garments, Bonarpara	**Short Course:** Computer operator Sewing Machine Operator	

Catchment (4) **Gaibandha**			
No.	**Name of TVET Institution**	**Programmes that are currently being offered**	
		Demand-driven	***Traditional***
4	BSCIC women Training Center	**Short Course:** Computer operator Sewing machine operator Beauty parlor Tailoring and dressmaking Catering Block and boutique	
5	National Women Development Training Center, District Women Affaire Office	Fashion Design Catering	

Catchment (5) **Jamalpur**			
No.	**Name of TVET Institution**	**Programmes that are currently being offered**	
		Demand-driven	***Traditional***
1	Jamalpur Technical School and College (TSC)	No short courses	**Diploma:** Electrical Mechanical
2	Jamalpur TTC	**Short Course:** Electrical house wiring RAC Computer operator Welding and fabrication Automobile Mechanics	
3	Jashim Uddin Polytechnic Institute (SAIC Group) – private	Electrical House Wiring Block, Batik and Screen Printing	SFMR ISMOT HEM
4	Women Computer Training Project, Ministry of Women and Child Affairs	Computer Application	
5	Galaxi Computer Training Institute (private)	Computer Office Application Graphic Design and Multimedia Programming	Information Communication Technology (ICT)
6	Gateway IT Institute (private)	Web Design &Development Graphic Design Out Sourcing	Microsoft Office Hardware

Catchment (6) **Rangamati**			
No.	**Name of TVET Institution**	**Programmes that are currently being offered**	
		Demand-driven	***Traditional***
1	BS Kaptai Polytechnic Institute	No basic courses	Diploma Courses
2	Abdullah Fakir Technical School (private)	Electrical House Wiring RAC Basic Computer Training	
3	M A Chashi Gono Biddyaloy (Rangunia upazila, Chittagong	Computer Office Application IT Support Technician	

Catchment (6) **Rangamati**			
No.	**Name of TVET Institution**	**Programmes that are currently being offered**	
		Demand-driven	***Traditional***
	District) – private	Graphic Design and Multimedia RAC Electrical Mobile Phone Servicing Tailoring and Dressmaking	
4	CIDP, BSCIC Rangamati	Weaving (Home Textile) Tailoring and Dressmaking Handicraft (Bamboo and Cane) Wood Works Block and Boutique Handicraft (Plastic Bag and Puthi) Fish Cultivation Computer Basic and IT application Freelance Outsourcing Electrical and House Wiring RAC Beautification and Hair Cutting Mobile Phone Servicing and repairing Livestock and Poultry Rearing Driving and Maintenance	Modern Office Management Electronics
5	Women Training Center, District Women Affairs Office	Tailoring and Dressmaking Bag making Show Piece and Handicraft Pasty and Bakery	Certificate in Beatification
6	Rangamati TTC	Electrical Graphic Design IT Support Technician Plumbing and Pipe Fitting Welding and Fabrication Automobile RAC	
7	Youth Development Training Center, Directorate of Youth Development	Tailoring and Dressmaking Fish Cultivation Computer Basic Electrical House Wiring RAC Beautification and Hair Cutting Livestock Rearing	Modern Office Management

Catchment (7) **Feni**			
No.	**Name of TVET Institution**	**Programmes that are currently being offered**	
		Demand-driven	***Traditional***
1	Feni Polytechnic Institute (model)	No short courses	Currently have only Diploma Courses
2	Feni Computer Institute	Graphic Design	IT Support

Catchment (7) **Feni**			
No.	**Name of TVET Institution**	**Programmes that are currently being offered**	
		Demand-driven	***Traditional***
	(public)	Web Design	
3	Feni Technical School and College (TSC)	Electrical Installation & Maintenance (Civil Construction); Tailoring and Dressmaking	IT Support
4	Japani Technical Training Center (private)	RAC	
5	Modern Technical Training Center (private)	RAC	
6	Youth Development Training Center, District Youth Development Office.	Dairy Farm Management Tailoring and Dressmaking Electrical House Wiring Electronics (RAC)	ICT Modern Office Management
7	Systech Computer Institute of Technology (private)	Graphic Design Web Design Auto CAD (2D-3D) Outsourcing Mobile Servicing	Microsoft Office Program Microsoft Office Management Hardware Engineering 3D-Max Spoken English Internet + E-mailing
8	Compact Polytechnic Institute (CPI) –private	Computer Office Application Graphic Design and Multimedia Electrical House wiring Web Design and Development Auto CAD 2D/3D Tailoring and Dressmaking	Computer Hardware and Networking Computer Programming (C/C++), Java) Fan and Motor Winding
9	Skill Development Centre, Bangladesh Small & Cottage Industries Corporation (BSCIC)	Electrical House Wiring	Motor Winding
10	District Women Skill Development Center, Women Affairs Office	Tailoring and Dressmaking Mobile Servicing Beauty Parlor Block and Boutique Show Piece/handicrafts	

More detailed and accurate programme information of seven selected TVET institutions are presented in the section 8 (8.1 to 8.7 as brief Profiles).

5.4.3 Overall/summarized occupational skills needs

The summarized occupational skills needs are presented by catchment area first, and then occupational skills are ranked based on acquired scores. All that are based on weighted average responses of all five categories of respondents (i.e. employers, employed graduates, unemployed/fresh graduates, non-trained workers and the TVET providers); whereas the details of the responses are presented in the sub-section 5.4.1. The presentation of summarized occupational skills in a consolidated (of all catchment areas) form is thereafter presented in a single matrix in Table 15.

Table 15: The presentation of summarized occupational skills in a consolidated (catchment 1 to 7)

Catchment **(1) Khulna**

Name of the Sector	Name of the Occupations	Overall weighted average response%			Ranking of occupations for		
		Men (n=39)	Women (n=48)	Total (n=87)	Men	Women	Total
Construction	Electrical House Wiring	17.9	10.4	13.8	3	7	4
	Plumbing and Pipe Fitting	7.7	0.0	3.4	15	19	16
	Welding and Fabrication	10.3	0.0	4.6	7	19	14
	Auto CAD	10.3	4.2	6.9	7	10	11
	Aluminum Fabrication	2.6	2.1	2.3	21	15	21
Furniture	Carpentry	5.1	2.1	3.4	18	15	16
Informal	Sofa, Rickshaw Seat making	2.6	4.2	3.4	21	10	16
	Mobile Servicing	7.7	16.7	12.6	15	4	6
	Dressmaking & Tailoring	48.7	43.8	46.0	1	1	1
	Block, Batik & Printing	15.4	12.5	13.8	4	6	4
	Beautician (beauty care)	10.3	6.3	8.0	7	8	8
	Fashion Designer	2.6	0.0	1.1	21	19	24
	Fish Culture & Breeding	10.3	0.0	4.6	7	19	14
	Jute bag and jute box making	10.3	4.2	6.9	7	10	11
Information Technology	Computer Application	41.0	27.1	33.3	2	2	2
	Graphic Design and Multimedia	12.8	18.8	16.1	5	3	3
	Web Design & Development	2.6	0.0	1.1	21	19	24
	Outsourcing	5.1	0.0	2.3	18	19	21
	IT Support Technician	5.1	2.1	3.4	18	15	16
Light Engineering	Refrigerator and Air Conditioning	2.6	2.1	2.3	21	15	21
	General Mechanics	10.3	6.3	8.0	7	8	8
	MTO (Machinist)	10.3	4.2	6.9	7	10	11
RMG & Textile	Sewing Machine Operator	10.3	14.6	12.6	7	5	6
Agro-Food Processing	Dairy Farm Management	7.7	0.0	3.4	15	19	16
	Food Processing & Preservation	2.6	0.0	1.1	21	19	24
Transport Equipment	Automobile Driving	12.8	4.2	8.0	5	10	8
T&H	House Keeping	2.6	0.0	1.1	21	19	24

Catchment **(2) Bagerhat**

Name of the Sector	Name of the Occupations	Overall weighted average response%			Ranking of occupations for		
		Men (n=47)	Women (46)	Total (n=93)	Men	Women	Total
Construction	Electrical House Wiring	29.8	13.0	21.5	2	4	2
	Auto CAD	6.4	0.0	3.2	11	24	18
	Civil Construction	4.3	0.0	2.2	16	24	22
	Welding and Fabrication	12.8	6.5	9.7	7	12	9
Informal	Sofa, Rickshaw Seat making	12.8	10.9	11.8	7	5	6

Name of the Sector	Name of the Occupations	Overall weighted average response%			Ranking of occupations for		
		Men (n=47)	Women (46)	Total (n=93)	Men	Women	Total
	Mobile Servicing	17.0	19.6	18.3	5	2	4
	Dressmaking & Tailoring	21.3	17.4	19.4	3	3	3
	Block, Batik & Printing	2.1	8.7	5.4	20	8	13
	Fashion Designer	0.0	8.7	4.3	25	8	14
	Handicrafts Products	4.3	0.0	2.2	16	24	22
	Beautician (beauty care)	2.1	4.3	3.2	20	14	18
	Jute bag and box making	0.0	6.5	3.2	25	12	18
	Solar Technician	4.3	2.2	3.2	16	19	18
	Poultry Rearing and Firming	2.1	0.0	1.1	20	24	26
	Fish Culture & Breeding	4.3	8.7	6.5	16	8	11
Information Technology	Computer Application	40.4	34.8	37.6	1	1	1
	Graphic Design and Multimedia	8.5	4.3	6.5	10	14	11
	Web Design & Development	0.0	4.3	2.2	25	14	22
	Outsourcing	6.4	2.2	4.3	11	19	14
Light Engineering	General Mechanics	17.0	4.3	10.8	5	14	7
	CNC Machine Operation (Lethe)	0.0	2.2	1.1	25	19	26
	MTO (Machinist)	21.3	10.9	16.1	3	5	5
Agro-Food Processing	Dairy Farm Management	10.6	10.9	10.8	9	5	7
	Food Processing & Preservation	6.4	8.7	7.5	11	8	10
Transport Equipment	Automobile Mechanics	0.0	4.3	2.2	25	14	22
	Automobile Driving	2.1	0.0	1.1	20	24	26
RMG & Textile	Sewing Machine Operator	6.4	2.2	4.3	11	19	14
Transport Equipment	Automobile Mechanics	2.1	0.0	1.1	20	24	26
	Automobile Driving	6.4	2.2	4.3	11	19	14

Catchment **(3) Sylhet**

Name of the Sector	Name of the Occupations	Overall weighted average response%			Ranking of occupations for		
		Men (n=60)	Women (n=31)	Total (n=91)	Men	Women	Total
Agro-Food	Food Processing & Preservation	1.7	0.0	1.1	21	29	25
Construction	Electrical House Wiring	40.0	58.1	46.2	1	3	2
	Plumbing and Pipe Fitting	10.0	19.4	13.2	9	10	10
	Auto CAD	5.0	0.0	3.3	15	29	19
	Building & Architectural Drafting	0.0	3.2	1.1	29	21	25
	Tiles and Setting	1.7	3.2	2.2	21	21	22
	Lift Operator	1.7	0.0	1.1	21	29	25
	Welding and Fabrication	13.3	16.1	14.3	6	11	9
Furniture Manufacturing	Lacquer polishing	6.7	12.9	8.8	14	13	14
	Wood Working	5.0	6.5	5.5	15	16	17
	Carpentry	3.3	0.0	2.2	20	29	22
Informal	Beautician (beauty care)	5.0	22.6	11.0	15	8	11
	Mobile Servicing	10.0	41.9	20.9	9	6	7

Name of the Sector	Name of the Occupations	Overall weighted average response%			Ranking of occupations for		
		Men (n=60)	Women (n=31)	Total (n=91)	Men	Women	Total
	Dressmaking & Tailoring	28.3	67.7	41.8	3	2	3
	Block, Batik & Printing	0.0	3.2	1.1	29	21	25
	Handicrafts	1.7	0.0	1.1	21	29	25
	Fashion Designer	1.7	6.5	3.3	21	16	19
	Poultry Rearing and Firming	0.0	3.2	1.1	29	21	25
	Sofa, Rickshaw Seat making	1.7	0.0	1.1	21	29	25
Tourism and Hospitality Management	Food and Beverage Service	1.7	6.5	3.3	21	16	19
	Hotel Management	0.0	3.2	1.1	29	21	25
	House Keeping	1.7	3.2	2.2	21	21	22
	Catering	13.3	48.4	25.3	6	5	5
Information Technology	Computer Application	38.3	90.3	56.0	2	1	1
	Graphic Design and Multimedia	5.0	16.1	8.8	15	11	14
	IT Support Technician	0.0	3.2	1.1	29	21	25
	Outsourcing	10.0	6.5	8.8	9	16	14
Light Engineering	Refrigerator and Air Conditioning	13.3	22.6	16.5	6	8	8
	CNC Machine Operation (Lethe)	5.0	6.5	5.5	15	16	17
	MTO (Machinist)	10.0	9.7	9.9	9	15	12
Transport Equipment	Automobile Mechanics	20.0	35.5	25.3	4	7	5
	Automobile Driving	18.3	58.1	31.9	5	3	4
RMG & Textile	Sewing Machine Operator	8.3	12.9	9.9	13	13	12
Pharmaceutical	Medical Technology (pathologist)	0.0	3.2	1.1	0	21	25

Catchment **(4) Gaibandha**

Name of the Sector	Name of the Occupations	Overall weighted average response%			Ranking of occupations for		
		Men (n=52)	Women (n=34)	Total (n=86)	Men	Women	Total
Agro-Food Processing	Rice Processing	7.7	5.9	7.0	11	9	9
	Dairy Farm Management	3.8	0.0	2.3	14	17	16
	Puffed & Flattened Rice Processing	5.8	0.0	3.5	12	17	15
	Food Processing & Preservation	5.8	5.9	5.8	12	9	11
Construction	Electrical House Wiring	46.2	17.6	34.9	2	5	2
	Auto CAD	3.8	0.0	2.3	14	17	16
	Welding and Fabrication	9.6	0.0	5.8	9	17	11
Furniture Manufacturing	Carpentry	1.9	0.0	1.2	18	17	24
	Lacquer polishing	1.9	2.9	2.3	18	13	16
Light Engineering	General Mechanics	11.5	0.0	7.0	8	17	9
	MTO (Machinist)	9.6	5.9	8.1	9	9	8
	CNC Machine Operation (Lethe)	3.8	0.0	2.3	14	17	16
Informal	Mobile Servicing	15.4	20.6	17.4	6	3	6
	Dressmaking & Tailoring	15.4	32.4	22.1	6	2	4
	Block, Batik & Printing	1.9	8.8	4.7	18	7	13

Name of the Sector	Name of the Occupations	Overall weighted average response%			Ranking of occupations for		
		Men (n=52)	Women (n=34)	Total (n=86)	Men	Women	Total
	Handicrafts Products	1.9	2.9	2.3	18	13	16
	Beautician (beauty care)	1.9	0.0	1.2	18	17	24
	Fashion Designer	1.9	2.9	2.3	18	13	16
	Fish Culture & Breeding	1.9	0.0	1.2	18	17	24
Information Technology	Computer Application	55.8	52.9	54.7	1	1	1
	Outsourcing	1.9	8.8	4.7	18	7	13
	IT Support Technician	1.9	2.9	2.3	18	13	16
	Web Design & Development	1.9	0.0	1.2	18	17	24
	Graphic Design and Multimedia	17.3	5.9	12.8	5	9	7
RMG & Textile	Sewing Machine Operator	32.7	20.6	27.9	3	3	3
Transport Equipment	Automobile Driving	28.8	11.8	22.1	4	6	4
	Automobile Mechanics	3.8	0.0	2.3	14	17	16

Catchment **(5) Jamalpur**

Name of the Sector	Name of the Occupations	Overall weighted average response%			Ranking of occupations for		
		Men (n=56)	Women (n=36)	Total (n=92)	Men	Women	Total
Construction	Electrical House Wiring	23.2	13.9	19.6	4	3	4
	Plumbing and Pipe Fitting	3.6	0.0	2.2	13	20	19
	Welding and Fabrication	10.7	0.0	6.5	7	20	10
Information Technology	Computer Application	57.1	44.4	52.2	1	1	1
	Graphic Design and Multimedia	26.8	25.0	26.1	3	2	2
	Outsourcing	7.1	8.3	7.6	10	6	8
	IT Support Technician	3.6	0.0	2.2	13	20	19
Light Engineering	Refrigerator & Air Conditioning	5.4	0.0	3.3	11	20	15
	General Mechanics	3.6	5.6	4.3	13	11	12
	Consumer Electronics	3.6	2.8	3.3	13	15	15
	MTO (Machinist)	10.7	8.3	9.8	7	6	7
Leather &LGs	Machine Operations (Footwear)	3.6	2.8	3.3	13	15	15
RMG and Textile	Supervisor	3.6	5.6	4.3	13	11	12
	Sewing Machine Operator	5.4	0.0	3.3	11	20	15
	Weaving (Textile)	0.0	2.8	1.1	25	15	24
	Quality Checker	1.8	2.8	2.2	20	15	19
Transport Equipment	Automobile Mechanics	1.8	8.3	4.3	20	6	12
	Automobile Driving	8.9	5.6	7.6	9	11	8
Agro-Food Processing	Food Processing & Preservation	0.0	5.6	2.2	25	11	19
	Dairy Farm Management	1.8	0.0	1.1	20	20	24
Informal	Mobile Servicing	1.8	2.8	2.2	20	15	19
	Dressmaking & Tailoring	28.6	13.9	22.8	2	3	3
	Block, Batik & Printing	12.5	8.3	10.9	6	6	6
	Handicrafts	14.3	11.1	13.0	5	5	5
	Beautician (beauty care)	3.6	8.3	5.4	13	6	11
T&H	Catering	1.8	0.0	1.1	20	20	24

Catchment **(6) Rangamati**

Name of the Sector	Name of the Occupations	Overall weighted average response%			Ranking of occupations for		
		Men (52)	Women (31)	Total (83)	Men	Women	Total
Construction	Electrical House Wiring	19.2	16.1	18.1	4	5	4
	Civil Construction	0.0	3.2	1.2	20	13	18
	Welding and Fabrication	3.8	0.0	2.4	8	17	12
Furniture Manufacturing	Wood Working	3.8	0.0	2.4	8	17	12
	Carpentry	11.5	9.7	10.8	5	8	6
Light Engineering	General Mechanics	1.9	0.0	1.2	13	17	18
	Refrigerator & Air Conditioning	1.9	0.0	1.2	13	17	18
RMG and Textile	Sewing Machine Operator	5.8	9.7	7.2	7	8	8
	Color Master (Dying)	1.9	0.0	1.2	13	17	18
	Weaving (Textile)	3.8	16.1	8.4	8	5	7
Information Technology	Computer Application	63.5	51.6	59.0	1	1	1
	Graphic Design and Multimedia	25.0	19.4	22.9	3	4	3
	IT Support Technician	3.8	0.0	2.4	8	17	12
	Outsourcing	1.9	0.0	1.2	13	17	18
Tourism and Hospitality	Catering	0.0	9.7	3.6	20	8	10
	Travel and Tourism Operator	1.9	0.0	1.2	13	17	18
Agro-Food	Food Processing & Preservation	0.0	6.5	2.4	20	11	12
Informal	Dressmaking & Tailoring	40.4	25.8	34.9	2	2	2
	Mobile Servicing	1.9	6.5	3.6	13	11	10
	Block, Batik & Printing	3.8	0.0	2.4	8	17	12
	Handicrafts	0.0	16.1	6.0	20	5	9
	Beautician (beauty care)	11.5	25.8	16.9	5	2	5
	Candle Making Operator	0.0	3.2	1.2	20	13	18
	Solar Technician	1.9	3.2	2.4	13	13	12
Transport Eq.	Automobile Driving	0.0	3.2	1.2	20	13	18

Catchment **(7) Feni**

Name of the Sector	Name of the Occupations	Overall weighted average response%			Ranking of occupations for		
		Men (69)	Women (15)	Total (84)	Men	Women	Total
Agro-Food Processing	Baking (Bread & Biscuit)	2.9	13.3	4.8	19	4	16
	Food Grain Machine Operation	1.4	6.7	2.4	22	7	20
Construction	Electrical House Wiring	21.7	13.3	20.2	3	4	3
	Auto CAD	7.2	0.0	6.0	11	16	12
	Plumbing and Pipe Fitting	14.5	6.7	13.1	5	7	5
	Welding and Fabrication	8.7	6.7	8.3	9	7	9
	Civil Construction	1.4	0.0	1.2	22	16	25
	Building & Architectural Drafting	1.4	0.0	1.2	22	16	25
Furniture Manu	Carpentry	1.4	0.0	1.2	22	16	25

Name of the Sector	Name of the Occupations	Overall weighted average response%			Ranking of occupations for		
		Men (69)	Women (15)	Total (84)	Men	Women	Total
Informal	Mobile Servicing	5.8	20.0	8.3	14	2	9
	Dressmaking & Tailoring	42.0	26.7	39.3	1	1	1
	Block, Batik & Printing	2.9	0.0	2.4	19	16	20
	Beautician (beauty care)	1.4	0.0	1.2	22	16	25
	Embroidery works	5.8	0.0	4.8	14	16	16
	Poultry Rearing and Firming	1.4	0.0	1.2	22	16	25
	Fish Culture and Breading	1.4	0.0	1.2	22	16	25
Information Technology	Computer Application	39.1	20.0	35.7	2	2	2
	Graphic Design and Multimedia	11.6	0.0	9.5	6	16	7
	Web Design & Development	5.8	0.0	4.8	14	16	16
	IT Support Technician	4.3	0.0	3.6	18	16	19
	Outsourcing	7.2	0.0	6.0	11	16	12
Light Engineering	Refrigerator & Air Conditioning	18.8	6.7	16.7	4	7	4
	General Mechanics	2.9	0.0	2.4	19	16	20
	Consumer Electronics	1.4	0.0	1.2	22	16	25
	CNC Machine Operation (Lethe)	5.8	6.7	6.0	14	7	12
	MTO (Machinist)	10.1	13.3	10.7	7	4	6
RMG and Textile	Sewing Machine Operator	8.7	6.7	8.3	9	7	9
	Quality Checker	1.4	6.7	2.4	22	7	20
	Supervisor	1.4	0.0	1.2	22	16	25
Tourism	Catering	1.4	6.7	2.4	22	7	20
Transport Equipment	Automobile Mechanics	10.1	6.7	9.5	7	7	7
	Automobile Driving	7.2	0.0	6.0	11	16	12

Overall summarized occupational skills needs [Top 7 occupational skills needs are yellow shaded]

Table 16: Top 7 occupational skills needs are yellow shaded

Industry Sectors as per NSDC	Occupations skills needs [consolidated from all seven catchment areas]	Overall (n=546)		Overall Ranking
		n	%	
Agro-Food Processing	Food Processing and Preservation	17	3.1	21
	Rice Processing	6	1.1	33
	Baking (Bread & Biscuit)	4	0.7	36
	Food Grain Machine Operation	2	0.4	44
	Dairy Farm Management	18	3.3	20
	Puffed & Flattened Rice Processing	3	0.5	41
Construction	Electrical House Wiring	154	28.2	3
	Plumbing and Pipe Fitting	28	5.1	16
	Welding and Fabrication	46	8.4	10
	Aluminum Fabrication	2	0.4	44
	Auto CAD	19	3.5	19
	Building and Architectural Drafting	2	0.4	44
	Tiles and Setting	2	0.4	44

Industry Sectors as per NSDC	Occupations skills needs [consolidated from all seven catchment areas]	Overall (n=546)		Overall Ranking
		n	%	
	Civil Construction	4	0.7	36
	Lift Operator	1	0.2	49
Furniture Manufacturing	Lacquer polishing	10	1.8	27
	Wood Working	7	1.3	32
	Carpentry	15	2.7	22
Informal	Sofa, Rickshaw Seat (Coconut Fiber) making	15	2.7	22
	Jute bag and jute box making	9	1.6	29
	Beautician (beauty care)	41	7.5	11
	Dressmaking & Tailoring	198	36.3	2
	Block, Batik & Printing	37	6.8	12
	Poultry Rearing and Firming	3	0.5	41
	Fish Culture and Breading	12	2.2	26
	Mobile Servicing	74	13.6	5
	Handicrafts (Bamboo, Cane & Other Products)	22	4.0	18
	Fashion Designer	10	1.8	27
	Candle Making Operator	1	0.2	49
	Embroidery works	4	0.7	36
	Solar Technician	5	0.9	34
Information Technology	Computer Application	289	52.9	1
	Graphic Design and Multimedia	90	16.5	4
	Outsourcing	31	5.7	14
	IT Support Technician	13	2.4	24
	Web Design & Development	8	1.5	30
Light Engineering	Refrigerator and Air Conditioning (RAC)	35	6.4	13
	General Mechanics	28	5.1	16
	Machine Tools Operation (Machinist)	55	10.1	8
	CNC Machine Operation (Lethe)	13	2.4	24
	Consumer Electronics	4	0.7	36
Leather & Leather Goods	Machine Operations (Footwear)	1	0.2	49
RMG and Textile	Supervisor	5	0.9	34
	Quality Checker	4	0.7	36
	Sewing Machine Operator	64	11.7	6
	Color Master (Dying)	1	0.2	49
	Weaving (Textile)	8	1.5	30
Tourism and Hospitality	Food and Beverage Service	1	0.2	49
	Catering	29	5.3	15
	Travel and Tourism Operator	1	0.2	49
	Food and Beverage Service	2	0.4	44
	Hotel Management	1	0.2	49
	House Keeping	3	0.5	41
Transport Equipment	Automobile Driving	59	10.8	7
	Automobile Mechanics	52	9.5	9
Others	Medical Technology (pathologist)	1	0.2	49

5.5 Institutional capacity of the selected TVET institutions

This has early been discussed that the capacity assessment of the seven selected model TVET institutions is done using a set of criteria, but not using so far depth of those criteria. Scopes are also generic, because institutional capacity assessment of the selected TVET providers seems to be not programme specific unless those are finalized. However, the set of criteria used as are:

a) Academic-training background and preparedness
b) Human Resources (HR) Strengths
c) Infrastructural and student accommodation facilities
d) Local industry linkages (for dual apprenticeship programmes)
e) Perceived primary capacity to address demand-driven occupational skills needs, and
f) Governance and other cross-cutting

The indicative summarized results of the primary institutional capacity assessment of the selected TVET institutes per catchment area (a few more details are presented in section 8 (8.1 to 8.7) based on the set of above mentioned criteria are presented below in Table 17:

Table 17: The indicative summarized results of the primary institutional capacity assessment of the selected TVET institutes per catchment area (Catchment 1 to 7)

(1) Mohila Polytechnic Institute, Khulna		
Criteria	***Assessment findings***	***Remark***
Academic-training background and preparedness	Presently offering five diploma programmes only, while no experience of basic and/or CBT programmes; Moderately functional job placement cell; Adequacy and quality of training resources/learning aids used in the classrooms are satisfactory; For new CBT courses if introduced, additional trainers, training resources/aids and lab aids/equipment will be required	Medium
Human Resources (HR) Strengths	Currently the KMPI has a total of 46 staff members of which 26 teaching, 3 lab, 17 support, and 8 management staff.	High
Infrastructural and student accommodation facilities	3.1 acres of land areas, 8 multistoried and 1 single storied buildings having 18 classrooms, 24 labs, 45 toilets, and 28 rooms for admin and management; but no dormitory facilities for students; Total student accommodation capacity is 2,420, only 47% of that are currently used; Adequate library/learning resource centers both for students and teachers	High
Local industry linkage	One apprenticeship programme is running based on informal arrangement, but no formal linkage with local industries is yet established	Low
Capacity to address demand-driven occupational skills	The TVET authority think that current training programmes are not designed and delivered fully in line with the local occupational skills demand, rather they are partly addressing.	Low
Governance and other cross-cutting	Follows government rules; Equal opportunity for all for enrolment but not for dormitory facilities	Medium

(2) Institute of Marine Technology, Bagerhat		
Criteria	***Assessment findings***	***Remark***
Academic-training background and preparedness	Currently offering two diploma courses and two other basic/short courses; No experience of conducting any CBT programmes; No specific job placement cell yet established; Training resources/aids are adequate, and quality satisfactory but lab aids and equipment are inadequate and the quality dissatisfactory; If new courses are introduced additional training resources/learning aids and lab aids/equipment will be required.	Medium
Human Resources (HR) Strengths	Currently the IMT has a total of 32 staff of which 11 teaching, 1 lab, 19 support, and 1 management staff. The institute authority is not satisfied with the present quantity and quality of teaching staff. Similarly, the adequacy and quality of lab staffing is not satisfactory to them, and both need training support.	Medium
Infrastructural and student accommodation facilities	Four multistoried buildings on 2.5 acres of land areas; there are 15 classrooms (of them 5 need renovation). There are 6 labs, 3 rooms for admin and management, 12 toilets (of which 8 for men and 4 for women), and dormitory facilities for 200 men and 150 women students/trainees. There is 465 student capacities of which presently about 82% is used.	Medium
Local industry linkages	No apprenticeship programmes with local industry, and no formal linkage with the local industries; initiative is just taken	Low
Capacity to address demand-driven occupational skills	The institute authority think that their current training programmes are not designed and delivered fully in line with the local occupational skills demand, rather they are partly addressing	Low
Governance and other cross-cutting	Follows government rules; Equal opportunities for all are being offered in student enrolment but not for dormitory facilities	Medium

(3) Polytechnic Institute, Feni		
Criteria	***Assessment findings***	***Remark***
Academic-training background and preparedness	Currently offering six diploma courses; No experience of conducting CBT programmes, but has experience of conducting basic courses before; There is a functional job placement cell established; The institute uses CBT curriculum, CBT Logbook and CBIMS, and provides BTEB certifications; The training resources/aids used in the classrooms are adequate, and the quality satisfactory; Lab aids and equipment used are inadequate and the quality dissatisfactory; if new courses are introduced additional and quality teaching staff will be required but the present lab staff support is considered to be sufficient for the considerably additional demand.	High
Human Resources (HR) Strengths	There is a total of 51 staff members of which 23 teaching, 17 lab, 7 support, and 4 management staff. The present adequacy and quality of both teaching and lab staffing is satisfactory.	High
Infrastructural and student	There are 7 buildings in the campus of which 1 is single storied, 5 are two-storied, and 1 is three or above storied on 14 acres of land	High

(3) Polytechnic Institute, Feni		
Criteria	***Assessment findings***	***Remark***
accommodation facilities	areas. There are37 classrooms (of them 20 are good in condition, 10 are relatively old but usable, 5 need renovation, and 2 are abandoned/not used),12 labs, 5 rooms for admin and management, 16 toilets, and dormitory facilities for 250 men and 100 women students/trainees. Present student accommodation capacity is 3,160 of which 96% is used.	
Local industry linkages	No apprenticeship programmes, and no formal linkage with any of the local industries. However, initiatives are taken. They only maintain an informal contact with local industries for the purpose of job placement of their successful graduates.	Low
Capacity to address demand-driven occupational skills	The institute authority thinks that their current training programmes are designed and delivered partly and sometimes fully in line with the local occupational skills demand.	Medium
Governance and other cross-cutting	Follows government rules; Equal opportunities for all are being offered in student enrolment but not for dormitory facilities	Medium

(4) BS Kaptai Polytechnic Institute, Rangamati		
Criteria	***Assessment findings***	***Remark***
Academic-training background and preparedness	Currently offering six diploma courses only; Has experience of conducting both the CBT and basic programmes i.e. NTVQF Level 1; A job placement cell is established but not functioning well; The institute uses Traditional Curriculum and provides BTEB certifications; The adequacy and quality of training resources/aids used in the classrooms and the lab aids and equipment used are satisfactory. If new programmes are introduced, additional classrooms, labs/workshops, library/LRC, and dormitory facilities would be required; and more importantly, second shift cannot be utilized for the newly added programmes because presently for diploma courses all two shifts are being utilized. If new course are to be introduces, either new buildings should be constructed or any one shift of diploma courses must be stopped, as they firmly opined.	Medium (infrastructure concerns)
Human Resources (HR) Strengths	The institute is having 84 staff members of which 39are teaching, 20 are lab, 17are support, and 8are management staff. The authority is not satisfied with the present quantity of teaching staff, are satisfied with their quality.	Medium
Infrastructural and student accommodation facilities	There are 6 buildings of which 2 are single storied, 2 are two-storied, and 2 are three or above storied based in 30.95 acres of land areas. There are56 classrooms (of them 28 are good in condition, and 28 are relatively old but usable),15 labs, 1 room for admin and management functions, 13 toilets, and 3 dormitory buildings(two for male and another for female students); while that can all-together accommodate 250 male and 50 female students. The present student accommodation capacity is 2,400, about 82% of which is being used.	High
Local industry	No apprenticeship programmes with local industry, and no formal	Low

(4) BS Kaptai Polytechnic Institute, Rangamati		
Criteria	***Assessment findings***	***Remark***
linkages	linkage with any of the local industries. No such initiatives are yet taken and they do not maintain any form of contact and liaison with local industries for the purpose of job placement as well.	
Capacity to address demand-driven occupational skills	The institute authority think that their current training programmes are designed and delivered fully or partly in line with the local occupational skills demand.	Medium
Governance and other cross-cutting	Follows government rules; Equal opportunities for all are being offered in student enrolment but not for dormitory facilities	Medium

(5) Technical School and College, Sylhet		
Criteria	***Assessment findings***	***Remark***
Academic-training background and preparedness	Currently offering 2 certificate (i.e. SSC Voc and HSC Voc) and 8 basic programmes; Has also previous experience of conducting both the CBT and basic programmes at NTVQF Level 1; There is a well-functioning job placement cell established; The institute uses Traditional curriculum for certificate courses and provides BTEB certifications; For all basic courses they use CBT curriculum but provide Institution's own certification; If new programmes are introduced the institute will need additional training resources/aids as well as additional labs/equipment as per CBTA standard.	High
Human Resources (HR) Strengths	There is a total of 86 staff members of which 54are teaching, 5are lab, 16are support, and 11 management staff; the quantity and quality of teaching and lab staff at present are satisfactory.	High
Infrastructural and student accommodation facilities	There are 7 buildings of which 3 are single storied, 2 are two-storied, and 2 are three or above storied on 5 acres of land areas; There are25 classrooms (of them 17 are good in condition, 3 are relative old but usable, 3 need immediate renovation, and 2 are abandoned),15 labs, 3 rooms for admin and management functions, 25 toilets, and 1 dormitory building offering residential facilities only for male students, none for female. Presently the student accommodation capacity is for 800 of which 87% is used. Second shift cannot be utilized for the newly added programmes because presently all two shifts are being utilized.	Medium
Local industry linkages	No formal linkage is established with any local industries, but initiatives are already taken. Presently the institute runs apprenticeship programmes with numbers of local industries based on informal linkages.	Medium
Capacity to address demand-driven occupational skills	The institute authority think that their current training programmes are designed and delivered partly in line with the local occupational skills demand.	Medium
Governance and other cross-cutting	Follows government rules; Equal opportunities for all are being offered in student enrolment but not for dormitory facilities, specially no dormitory facility for women yet	Medium

(6) Technical School and College, Jamalpur		
Criteria	***Assessment findings***	***Remark***
Academic-training background and preparedness	Currently offering four (of which two are Diplomas and two are certificate i.e. SSC Voc and HSC Voc) programmes; The institute has previous experience of conducting basic programmes before but not for any CBT programmes; There is a job placement cell established but presently not well staffed and functioning; For all the diploma and Voc courses the institute uses Traditional Curriculum, handouts and other training aids, and provides BTEB certifications for all students; If new programmes are introduced additional trained teachers, modern training resources/aids/equipment and additional well-equipped labs as per CBTA standard will be required.	Medium
Human Resources (HR) Strengths	Having a total of 30 staff members of which 14 are teaching, 2are lab, 9are support, and 5are management staff; the present quantity and quality of teaching and lab staff are not satisfactory	Medium
Infrastructural and student accommodation facilities	There are 5 buildings of which 3 are single storied, 1 is two-storied, and 1 is three or above storied on a 4.04 acres of land areas. There are7 classrooms (of them 3 are good in condition, 2 are relatively old but usable, and 2 need immediate renovation), 6 labs, 4 rooms for admin and management functions, 6 toilets , and dormitory facilities for only 8 male students, none for female. Student accommodation capacity is 1,320 of which 87% are presently used. Second shift cannot be utilized for the newly added programmes because presently all two shifts are being utilized.	Low
Local industry linkage	Maintains formal linkage with a few local industries for the purpose of apprenticeship programmes, and also maintains various forms of contact and liaison with local industries for the purpose of job placement, but are not satisfied enough to increase job placement opportunity in future.	Medium
Capacity to address demand-driven occupational skills	The institute authority think that their current training programmes are not designed and delivered fully in line with the local occupational skills demand	Low
Governance and other cross-cutting	Follows government rules; Equal opportunities for all are being offered in student enrolment but not for dormitory facilities	Medium

(7) Technical Training Center, Gaibandha		
Criteria	***Assessment findings***	***Remark***
Academic-training background and preparedness	Currently offering 9 basic programmes under BMET but no previous experience of conducting CBT programmes; There is a job placement cell established but presently not well staffed and functioning; The institute uses CBT Curriculum as training aids, provides BMET certifications; If new programmes are introduced additional trained teachers,	Medium

(7) Technical Training Center, Gaibandha		
Criteria	***Assessment findings***	***Remark***
	modern training resources/aids/equipment and additional well-equipped labs as per CBTA standard will be required.	
Human Resources (HR) Strengths	There are 21 staff in total of which 11 are teaching, 7 are lab, 2 are support, and 1 management staff. Present quantity and quality of teaching and laboratory staff are not satisfactory	Low
Infrastructural and student accommodation facilities	There are 3 multi-storied buildings on 3 acres of land areas in the campus. There are 14 classrooms all in good condition, 8 labs, 2 rooms for admin and management functions, 32 toilets, and dormitory facilities for 144 male and 48 for female students. Student accommodation capacity at present is 140 of which 90% is used. Second shift can be utilized for the newly added programmes	Medium
Local industry linkages	Maintains formal linkage with a few local industries for the purpose of apprenticeship programmes. They also has initiated to build linkage with local industries for the purpose of job placement	High
Capacity to address demand-driven occupational skills	The institute authority thinks that their current training programmes are designed and delivered fully in line with the local occupational skills demand	High
Governance and other cross-cutting	Follows the government rules and procedures for overall management; They offer equal opportunity for male, female and DAP students in enrollment, and also for accessing to dormitory and other physical facilities	High

5.6 Possibility of business development services

This is indicative that about 66% TVET providers are registered training organization (i.e. RTO), and 86% have minimum infrastructural and other facilities for their trainees (ref: annex 12.1 of table 12.10 & 12.11). Physical facilities include: (a) dormitory (b) canteen (c) fitness room (d) separate toilets for men and women and ramp or elevators for disabled persons, among others. Apart from these physical facilities, TVET institutions provide financial supports/grants/stipends and technical assistances mainly for job placement. They also provide supports for local entrepreneurship development. Trainees of these TVET institutions cover mainly youth – both male and female; the availability of IPs and migrant workers are merely found as the trainees.

As of the research findings (based on multiple response) provided below in table 18, overall 41.2% TVET institutions provide limited scholarship (i.e. stipend) supports to the poor (i.e. economically unable) but talent students/trainees. Area-wise, in Khulna it is highest (75%) and then in Sylhet (50%), Bagerhat (44.4%), Gaibandha (37.5%), Feni (33.3%) and in Rangamati it is 14.3%. The volume (i.e. amount) of such scholarships and/or stipend supports mainly depend on the availability of funds being allocated by the government and/or any other donors, and allocations vary at large by financial years, institution types, and areas. The idea on the amount of these financing supports is yet not known, but generally the availability of funds is very limited. Alongside, overall about 12% TVET institutions provide grant supports and 7.8% provide loan/credits to their graduates mainly for the purpose of self-employment; but they do not attempt of or facilitate graduates in pursuing and exploring any local and/or national financing sources (i.e. Banks, NGOs and any other financing institutions) for this purpose. Even though the support services are quite limited, these are not so far accessible for the IPs or migrant workers. TVET providers other than those are under the Ministry of Education extends small-scale grant supports for the youth

following their graduation from the respective courses, includes Directorate of Youth, Women Affairs, Social Welfare and Oversees Employment. The research could not exploit generation of knowledge about the youth graduates' accessibility to and availability of grants/credits especially for migrant workers from the Oversees Welfare and Employment Bank established by the government. Whatsoever, the available supports are likely to be facilitative towards enhancing business development prospects locally – either those are person or association/organization driven, but are yet not planned and implemented at scale.

Table 18: Facilities provided by the TVET Institutions as per catchment areas

Facilities any	# counted responses by catchment area															
	Khulna (8)		Bagerhat (9)		Sylhet (10)		Gaibandha (8)		Jamalpur (3)		Rangamati (7)		Feni (6)		Total (51)	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Dormitory for all	4	50.0	3	33.3	4	40.0	7	87.5			2	28.6	4	66.7	24	47.1
Canteen for all	4	50.0	6	66.7	4	40.0	8	100	1	33.3	1	14.3	4	66.7	28	54.9
Fitness room													1	16.7	1	2.0
Toilet for men & women	8	100	9	100	10	100	8	100	3	100	7	100	6	100	51	100
Ramp if any					1	10.0									1	2.0
Scholarship	6	75.0	4	44.4	5	50.0	3	37.5	-	-	1	14.3	2	33.3	21	41.2
Grants	-	-	-	-	2	20.0	4	50.0	-	-	-	-	-	-	6	11.8
Loan	-	-	1	11.1	1	10.0	2	25.0	-	-	-	-	-	-	4	7.8
Other allowances	-	-	1	11.1	-	-	-	-	-	-	1	14.3	-	-	2	3.9
Others	-	-	1	11.1	-	-	-	-	-	-	-	-	-	-	1	2.0

About 47.5% TVET institutions in a total provide training support for local entrepreneurship development, but those are not well targeted by the providers. Generally, TVET institutions extent this support to the prospective persons (i.e. graduates) or a group of persons based on the demand comes from the persons. Yet this support is not provided towards organizational level. Neither these are reported to be financially provided. However, the findings suggest that there is a high potential for this support to be institutionalized and scaled-up while a significant percentage of TVET institutions from all the catchment areas are found to be providing these supports. For example, 77.8% in Gaibandha, 60% in Feni, 50% in Khulna and Rangamati, 40% in Sylhet, 25% in Jamalpur, and 22.2% in Bagerhat TVET institutions are providing training supports for entrepreneurship development (ref. annex 12.1, table 12.12).

5.7 Constrains/barriers to improve the quality of training programmes

Overall 59.3% TVET institutions believe that they have adequate academic and learning facilities to ensure delivery of quality training programmes as per needs of the industries (i.e. employers). Specific to areas, this is 88.9% in Gaibandha, 87.5% in Khulna, 80% in Sylhet, 70% in Feni, 40% in Rangamati, 33.3% in Bagerhat, and 25% in Jamalpur. Given these varied understandings, almost every TVET institution uses various resource materials and learning aids in delivering training programmes. Specifically, about 53% use Traditional Curriculums and 74% institutions use both of CBT and Traditional Curriculums. Regarding teaching aid/learning resources, 25.0% use CBT logbooks, 88.0% use handouts during classes, and 32.0% use CBLMs (ref. annex 12.1 of table 12.14 and 12.15). About 41% **TVET institutions** have realized that they cannot ensure quality of training programmes they deliver because of the following reasons (ref. annex 12.1 of table 12.16):

a) Inadequate laboratory tools and equipment (58.0%)
b) Inadequate practice materials (46.0%)

c) Outdated machines and training facilities (8.3%)
d) Outdated course curriculum (8.3%)
e) Non-industry experienced Instructors/Trainers (17.0%)
f) Traditional training delivery (25.0%)
g) Lack of knowledge among the trainers about modern technology (38.0%)
h) Lack of knowledge among institutions about occupational skills demand (25.0%)

About 67.8% TVET institutions as a whole think that they have adequate/sufficient number of Trainers, and 74.6% think that they have sufficient student accommodations (i.e. classrooms, labs etc.) for providing quality training programmes. About 56% institutions have any forms of industry linkage which they presently use and/or can potentially use for apprenticeship programmes. Area-wise these all-above are as follows and presented in Table 19:

Table 19: Area wise respondent's opinion on trainers, student's accommodation and any form of industry linkage

TVET institutions have	**% Respondents opinion (multiple – more than one) (n=59)**							
	Khulna	Bagerhat	Sylhet	Gaibandha	Jamalpur	Rangamati	Feni	Overall
Sufficient trainers	87.5	77.8	30.0	80.0	80.0	62.5	66.7	67.8
Sufficient student accommodation	87.5	100.0	60.0	60.0	100.0	62.5	66.7	74.6
Any forms of industry linkage	87.5	44.4	70.0	40.0	80.0	12.5	66.7	55.9

From the **industry/employers** perspective, the following constraints/barriers to improve the quality of training programmes are identified:

a) Lack of modern training with upgraded curriculum and equipment;
b) lack of resources i.e. financial and technical to establish modern training facilities;
c) Typical training system emphasizing only on the course completion but not on the quality that attracts employers;
d) Course design and content selected are not based on market demand;
e) Lack of government initiative to monitor and follow-up the TVET performance, etc.

From the **employees** (i.e. graduates – both employed and unemployed) perspective, the following constraints/barriers are identified for the TVET institutions to be not able to deliver quality training programmes:

a) Lack of and insufficient modern training equipment/learning resources/aids;
b) Lack of teaching skills among trainers;
c) Insufficient space in the training room;
d) Less time for practical classes;
e) Large group formation for practice;
f) Insufficient instructors;
g) Non-use of multimedia facilities;
h) Outdated course contents;
i) Lack or no linkages with industry partners for apprenticeships, etc.

Additionally, TVET **graduates** (both employed and unemployed) suggest the following (based on multiple – more than one response) to further improving the quality of training programmes and presented below in Table 20:

Table 20: Suggestions of Graduates for improving the quality of training programmes

SL	List of suggestions/recommendations	# Response (n=278)	Weight %
1	Increased use of modern equipment in the training	125	45.0%
2	Instructors should be more skilled	76	27.3%
3	Increase time for practical classes	61	21.9%
4	Arrange more stipend for trainees	29	10.4%
5	Increase the space of training rooms	19	6.8%
6	Provide computer for each trainee during the training	12	4.3%
7	Strong linkage with business industries for apprenticeships	11	4.0%
8	Contemporary contents should be included in the training	10	3.6%
9	Increase number of Instructors	9	3.2%
10	Use of multimedia during training	8	2.9%
11	Form a smaller group of 4-5 trainees for practice sessions	6	2.2%
12	Modern technology should be included in the training	5	1.8%
13	Ensure health protection during training	4	1.4%
14	Should be generator facilities during training as energy backup	4	1.4%
15	Should introduce more modern subjects	4	1.4%
16	Use of Lacquer Booth during wood works	2	.7%
17	Arrange for 'Baby Corner' in the training institute	1	.4%
18	Increase duration of classes	1	.4%

Apart from the constraints/barriers to the delivery of quality training programmes by the TVET institutions as mentioned and discussed above, there is a vital issue to be further taken into account. That is the lack of industry linkage, found to be a case in general, to create opportunity for the trainees to impart in the dual apprenticeship programmes and which can foster working competencies of the graduates. Association of Women Entrepreneurs almost from all the selected catchment areas opined that TVET institutions are not interested in investing in dual system training. This is implied equally to both public and private TVET providers, but should be seen from different perspectives. Public providers are not interested because there is not much pressure from the top of their line agencies, and in some cases they are reluctant on this. There is also a lack of well-framed policies of the government and that enforce TVET institutions to introduce as well as to enable them to cost-wise accommodate the dual system training. From the private TVET providers' perspective, this is absolutely arisen from the outdated business orientation[12]. Therefore, to make sure that all TVET institutions are providing quality training programmes, the issues as identified and illustrated above should be mitigated.

[12] Meaning that they do not understand or want to understand that investment never gets wasted (i.e. if they invest they will get more returns)

6. Conclusion and recommendations

The research clearly indicates that there is a mismatch of occupational skills needs between employers and graduates. Occupational skills demanded and/or placed as requirement from employers are more or less specific to locations and industries of types and sizes; while occupational skills needs identified by the job holders and seekers i.e. both TVET graduates and non-trained workers are not area and/or industry specific, rather those are more widespread. While identifying occupational skills needs the graduates and workers tend to look for employment opportunities even from a broader frame. These are targeting both wage based and self-employment, as well as basing on the present and future potential labour market demands either locally, nationally or even overseas. The difference of thought basis between the employers and employees is drawn clearly, and which reflects on the outcomes to be leading to a distinctive mismatch between their needs and need patterns expressed. However, this has been a global phenomenon that there is always a certain level of mismatch of occupational skills needs between the employers and employees, while similar kinds of research are undertaken. The point is that key users need to realign and contextualize the occupational skills needs as those better fit with the local demand, and at the same time programmes (whatever selected) need to be of at least national standard. This needs to be done because of the widespread demands of the TVET graduates and non-trained workers so that the programmes designed and delivered serve the purpose of offered competencies to be of national and/or international standard.

From within the seven selected TVET institutions only Khulna Mohila Polytechnic Institute has no previous or current experience of conducting neither any basic nor any CBT programmes. IMT Bagerhat is presently offering and conducting a few basic programmes only but have no experience of conducting CBT programmes. Feni Polytechnic Institute has previous experience in conducting basic programmes but not in CBT. BS Kaptai Polytechnic in Rangamati has previous experience in conducting both the basic and CBT programmes, but presently offering only diploma courses. Sylhet TSC has previous experience of conducting CBT programmes but currently offering certificate and a number of basic courses. Jamalpur TSC has previous experience on basic but none on CBT programmes and currently offering certificate and diploma programmes. And the last, Gaibandha TTC has no previous experience of conducting CBT but currently offer basic programmes. These provide a mix and diverse experiences of the selected TVET institutions. But the areas of concern as arisen from this analysis is that 3 institutions started conducting basic programmes and 2 others started conducting CBT programmes; but none of them could continue those till date – the programmes were eventually closed. The reasons of such closure of programmes are yet not identified (i.e. because of the limited scope), and given the context ILO Skills 21 Programme again targets to introduce and facilitate the model TVET institutions for the implementation of CBTA based programmes. The reasons of the programme closure should be known to the respective institutions; however, those can bring out a hypothesis that either the programmes could not attract the trainees much or programmes were not appropriately marketed well before those are introduced, or both the providers and trainees could not accommodate or adopt with the standard of the programmes. Whatsoever, the actual reasons need to be manifested and issues as identified be addressed to ease further and effective implementation of similar programmes.

The research scope includes a component of assessing the capacity needs of the seven selected TVET institutions. This has been done in a simplest way and times when catchment specific training programmes are yet not finalized. Hence, the findings related to institutional capacity assessment may not be relevant to the programmes as those are going to be finalized and that in turn demand for a further and holistic capacity assessment specific to programmes and TVET institutions located in different areas of the country.

Lack in or weak (i.e. informal) industry linkage of the selected TVET institutions and formalized arrangement between them alone are not only constraints to dual system programmes. The research findings also suggest that there is a need for programmatic shifts in the course design including modernization of the technical aids/learning resources to strengthen the apprenticeship programmes. For example, dual system training itself has a technical issue on how to make it effectively as well as sustainably implemented, and it has also cost implications when trainees will be placed under a working environment for a considerably longer period of time. All these issues need to be redressed within the dual system training based qualification framework.

The research finds a multifold of challenges and barriers to the delivery of quality training programmes. Some of those are superficially identified by the employers, graduates, and also by the TVET providers. Firstly, all those challenges and barriers as identified from different perspectives need to be taking into account. Secondly and most importantly, the implementers should go even beyond these. For example, the relevance of quality training is not only related to programmes, technical resources/aids, and delivery approaches; but also to the fact that it requires sufficient motivation and capacity of the providers as well as adequate funding provisions to ease delivering quality programmes. Typically, public sector TVET providers suffer from government allocation shortage, while private sector providers tend to run their programmes on a commercial basis. These tendencies need to be holistically changed, and for such changes, sufficient budgetary allocation, massive orientation programmes for both public and private providers as well as policy reforms are needed. In addition to these as already included in the list of solutions, another biggest challenge for ensuring the quality of training programmes is the absence of an effective and/or non-functional monitoring and follow-up mechanism by the respective coordinating and accreditation bodies at levels.

TVET providers in most locations are providing technical supports for the development of local business and/or entrepreneurships. These are encouraging, but unfortunately not based on TVET providers' own plan and service provisions. Rather these are based on demand from a person or a group of persons showing them interested and asking support services. This implies on a lack of nationally framed plans and policies that are in place and functional to be implemented through these institutions. Many suggestions are pulled out from the research on how to support the service provision, those needs to be added by a provision of sustainable financing mechanism towards effective and efficient businesses/entrepreneurship development services.

Putting all these issues and concerns upfront relating to ensuring the quality and competency based vocational education and training programmes, the summarized as well as prioritized occupational skills needs by catchment areas and then the seven top priorities occupational skills needs in a gross are presented hereunder.

Summarized occupational skills needs: Catchment area specific and overall

Business Sector	Occupational skills needs identified	Top ranked 7 occupational skills needs by catchment areas							
		Feni	Rangamati	Jamalpur	Gaibandha	Sylhet	Bagerhat	Khulna	Overall
Informal	Dressmaking and Tailoring	1	2	3	4	3	3	1	2
	Mobile Phone Servicing				6	7	4	5	5
	Block, Batik and Printing			6				4	
	Beauticians (beauty care)		5						
	Handicrafts (bamboo/cane/others)			5					
	Sofa, Rickshaw seat making						6		
Information Technology	Basic Computer Application	2	1	1	1	1	1	2	1
	Graphic Design and Multimedia		3	2	7			3	4
Light Engineering	Refrigeration & Air Conditioning	4							
	General Mechanics						7		
	Machine Tools Operation (Machinist)	6		7			5		
Construction	Electrical House Wiring	3	4	4	2	2	2	6	3
	Plumbing and Pipe Fitting	5							
RMG & Textile	Sewing Machine Operation				3			7	6
	Weaving (textile)		7						
Transport Equipment	Automobile Mechanics	7				6			
	Automobile Driving				5	4			7
Tourism & Hospitality	Catering					5			
Furniture	Carpentry		6						

Top ranked 7 occupational skills needs: overall

Industry Sectors as per NSDC	Occupations skills needs	Overall (n=546)		Overall Ranking
		n	%	
Information Technology	Computer Application	289	52.9	**1**
	Graphic Design and Multimedia	90	16.5	**4**
Informal	Dressmaking & Tailoring	198	36.3	**2**
	Mobile Servicing	74	13.6	**5**
Construction	Electrical House Wiring	154	28.2	**3**
RMG and Textile	Sewing Machine Operator	64	11.7	**6**
Transport Equipment	Automobile Driving	59	10.8	**7**

Recommendations:

Based on research findings as a whole and the analysis of a few other issues in the concluding section associated (mostly came out of professional understanding and judgment of the Consultants) with the key findings, the following key recommendations are made that the ILO Skills 21 Programme:

- Takes into account at least all the top 19 programmes under eight NCDC established industry sectors (please refer to summarized occupational skills needs: catchment specific and overall) for the subsequent development and facilitation, within which the informal sector is found to be dominant one, and since those are mutually inclusive (i.e. each programme as selected for any catchment is equally potential for other areas as well).

- Strongly considers the suggested capacity building needs as primary supports to be rendered for improving the quality of programmes being offered by the model institutes, since the research is presently unable to provide programme and catchment area specific needs for building institutional capacity of the selected TVET institutions. For this to be implemented at scale, an independent, well-structured and full-scale institutional capacity needs assessment is suggested to undertake once the programmes are specifically identified and selected for the implementation.

- Addresses the issues/constraints as identified from different perspectives, as well as facilitates a series of dialogue with relevant ministries and departments including the BTEB to restructure/reform (if need be) and strengthen the Monitoring and Follow-up System to ensure the quality of training programme delivery;

- Strongly considers undertaking a separate fact finding study for why basic and CBT courses are left out/stopped at their middle in the selected TVET institutions, and then considers addressing them into the current programming strategies along with necessary monitoring and follow-up measures;

- Takes on issues related to building formal and sustainable industry linkage per selected programme and catchment area for the purpose of dual training system. Furthermore, the system needs to be institutionalized, not to be done on an ad-hoc basis, reasonably through blending adequate fund allocation provisions for dual apprenticeship programmes (both for public and private TVET providers) with the industry linkage so that the system can be self-run in future. This can be done through initiating a dialogue between ILO and the Government Counterparts, and then be scaled up among the private sector providers.

- Facilitates the model TVET institutions for linkage building with Micro-Finance Institutions (i.e. MFIs) like NGOs and other financing institutions like Banks, etc. for promotion of business development services;

- Can consider, while programmes are being selected and developed, adopting means of value addition to the TVET sector in Bangladesh. This has been important because of the present context when TVET sector is running on traditional basis and needs. While discussing with many stakeholders of the sector in the field, the issue of value adding comes in. Many stakeholders envision embracing newer challenges related to technological innovations and their adverse impacts by adopting green skills as well as care economy based occupational skills in the TVET sector. As rationalized, these can buy-in even more advanced solutions to the persons or institutions that become vulnerable as a result of technological advancement. For example, women workers started becoming a major workforce in the RMG industries who needs care for their children, elderly people becomes isolated from their families as a result of educational advancement of the family members. From environmental perspective, climate change adaptation alone becomes an emerging issue for the countries like Bangladesh, when victims are not responsible for that. Carbon emission rates has been increasingly impacted climate system for the people to be exposed more to natural calamities, for which greening economy needs to be prioritized. For these to address in a forward looking manner, a few training programmes related to care economy as well as based on green skills can be identified, developed and experimented/piloted, and therefore those can be scaled-up based on their relevance, effectiveness, and impacts on socioeconomic productivity.

7. Documents/literatures reviewed

ANALYSIS Country overview: Bangladesh August 2014 by GSMA
Bangladesh Labour Market Profile 2016 by LO/FTF Council, Analytical Unit of the Danish Trade Council for International Development and Cooperation
Bangladesh National Education Policy (2010)
Bangladesh Skills for Employment and Productivity (B-SEP) - (2014 – 2018)
Bangladesh Youth Policy
Conducting Verification/ Tracer Study under Skills & Training Enhancement Project (STEP)
Employability of Post-Secondary TVET in Bangladesh
ILO 2010; a proposal to strengthen TVET & skills data in Bangladesh
Impact Assessment of Skills Training for Slum Dwellers
Industry Skills Councils (ISCs)
Labour market and skill gap in Bangladesh (Macro and Micro level Study) by BIDS in 2017
National Skills Development Policy ((NSDP) – 2011
Qualifications Frameworks: Implementation and Impact
Sixth Five Year Plan
Skills 21 – (2017 – 2020)
Skills and Training Enhancement Project (STEP)
Skills for green jobs in Bangladesh, Unedited background country study, 2010 – BIDS sponsored by ILO and EU
Sudokkho (Well- Skilled) Project of UKaid and SDC
Sudokkho Sector Strategy: Construction Sector in Bangladesh
The National Policy on ICT
The National Technical and Vocational Qualification Framework (NTVQF) – 2011
Tracer Study of the Trainees under the Industry-led Apprenticeship Project (COEL Industry-led Apprenticeship Project for Leather Industry (2012 – 2014)
7th Five Year Plan (2016 – 2020)

8. Brief Profiles of the Seven Selected Model TVET Institutions

8.1 Khulna Mohila Polytechnic Institute

The Khulna Mohila Polytechnic Institute is comparatively new TVET provider, established in 2005 and running under administrative control of Bangladesh Technical Education Board (i.e. BTEB). It is located at Palpara, Khalishpur under Khulna City Corporation, and presently headed by its Principal Mr. Kazi Neamul Shaheen joined about six year before.

Academic-training background and preparedness
The institute is currently offering five diploma courses like i) Civil Technology, ii) Computer Application, iii) Electronics, iv) Architecture and Interior Design, and v) Environmental Technology. Each diploma courses are generally 1 year duration. The number of teachers/trainers per course currently engaged in the KMPI is

yet not known. The KMPI has no experience of conducting any Competency Based Training (i.e. CBT) programmes. The institute has a job placement cell, and one person is kept specifically assigned for the purpose as well. The institute uses traditional curriculum; while BTEB certifications are used for the diploma courses.

As of the institute's opinion, the training resources/learning aids used in the classrooms are adequate, and the quality of training resources/learning aids is satisfactory. Given the varied opinions on the adequacy and quality of training resources/learning aids, the institute is presently satisfied with the training programme delivery as a whole. While asked if additional or new courses are introduced to the institute they opined that additional training resources/learning aids and lab aids/equipment will be required.

Human Resources (HR) Strengths

Currently the KMPI has 26 teaching (male 12, female 14), 3 lab (male), 17 support (of which 14 male and 3 female), and 8 management (male7 and female 1) staff. All-together the institute is having 46 staff members. Against the present staffing of the institute, a total of 631 female students/trainees were enrolled in the last year i.e. 2017 and 901 female trainees in the current year i.e. 2018 which provides an average of 766 students' enrollment per year. The current staff - student ratio of KMPI is about 1:35.

Given the present staffing and student enrollment status, the institute authority is not satisfied with the present quantity of teaching staff but satisfied with the quality of training by their teaching staff. Even they confirmed that they need not specialized training support for them. Similarly, the adequacy of lab staffing is not satisfactory but quality of services by the lab staff is satisfactory to them. While asked if additional or new courses are introduced to the institute they opined that additional and quality teaching and lab staff supports will be required.

Infrastructural and student accommodation facilities

The KMPI is built on an around 3.1 acres of land areas. There are eight multistoried (i.e. 3 is two-stories and 5 is three and above storied) and 1 single-storied buildings in the institute, within which there is a total of 18 classrooms. There are 24 labs, 28 rooms for admin and management, 45 toilets (of which 18 for men and 27 for women), and no dormitory facilities for students/trainees in the KMPI.

The present student accommodation capacity per training programme/course of the institute is apparently sufficient while most of these capacities are yet not fully utilized even in average less than 50% is utilized. As of the institute source, these are as follows:

Training/programmes	*Course type*	*# Total capacity*	*# Present students*	*% Capacity used*
Civil Technology	Diploma	300	173	58%
Computer Technology	Diploma	680	416	61%
Electronics	Diploma	380	139	37%
Architecture and Interior Design	Diploma	680	380	56%
Environmental	Diploma	380	84	22%
	Total:	**2420**	**1192**	**46.8**

There are library and/or learning resource centers/facilities both for students and teachers in the institute, and as of the institute's opinion those are easily accessible for them. These facilities are considered adequate for the learning purpose of students/trainees as well as for the teachers/trainers. There is no ramp facilities for the students with disability, though the enrollment status of them is yet not known.

However, there is stipend/grant facility in the institute for the poor talent students. When asked if new courses/programmes are introduced to the institute, they opined that additional classrooms, labs/workshops, library/LRC, and dormitory facilities would be required for the KMPI. KMPI authority confirmed that a second shift cannot be arranged within the current infrastructural facilities for an interim period if the authority not provided sufficient extra teachers/trainers, classrooms, hostel, library and labs facilities.

Local industry base and linkages

As of the institutes' observation, there are about 3jute industries, 1 paper mill, 20 fish processing industries, 12 architectural & interior design consulting companies, and 4 agro-food product industries including one tannery and one garment and 2 group of industries like Hamko and Lockpur presently operating in the catchment. Mason, rod binding, painter, carpenter, auto cad operator, furniture carpeting, graphic design, tiles fixer, data entry operator, computer operator, sale executive and helper are locally popular wage based occupations, while mason, rod binding, painter and carpenter occupation are equally popular for self-employment based occupation.

Presently, the institute has an apprenticeship programmes with local industry, but no formal linkage with any of the local industries. However, as they opined, initiatives are taken for linkage building. As the institute has job placement cell and the person responsible maintain liaison with local industries by any form of contact for the purpose of job placement of their successful graduates. And hence, the institute is not satisfied with the present form of relationship with local industries to increase job placement opportunity as well.

Perceived occupational skills demand in the locality i.e. catchment areas

Agro-food processing& Preservation under Agro-food Sector, Auto CAD, Graphic Design, Data Entry Operator, and Computer Operator under ICT Sector, RMG, Construction, Furniture, Pharmaceuticals, Ceramics sector, Tourism & Hospitality Management under Tourism & Hospitality sector are the highly demanded occupational skills among youths in the catchment area, and then medium demand for Leather and Leather Goods, Transport Equipments, Light Engineering, Informal and Other Sectors. The institute authority think that their current training programmes/courses are not designed and delivered fully in line with the local occupational skills demand, rather they are partly addressing.

Governance and other cross-cutting

The KMPI follows the government rules and procedures for its overall management. As opined, they offer equal opportunity for male, female, and students with disability in enrollment as well as in obtaining existing other academic facilities. But students with disability are not being offered equal opportunities in dormitory and physical other facilities.

8.2 Institute of Marine Technology (IMT), Bagerhat

The IMT Bagerhat is comparatively new TVET provider, established in 2013 and running under administrative control of the Bureau of Manpower and Employment Training (i.e. BMET). It is located at Chitoly, Boitpur of Bagerhat district (i.e. formerly a sub-division of the greater Khulna district), and presently headed by its Principal Mr. Md. Jaynal Abedin joined about a year and four months before.

Academic-training background and preparedness

The institute is currently offering two diploma courses and two other basic/short courses. Diploma courses are on i) Marine Technology, and ii) Ship Building Technology. Basic courses as being offered are on: i) Computer Office Application, and ii) Electrical Wiring. Diplomas are generally of 4 years and the basic courses are for 6 months. The number of teachers/trainers per course currently engaged in the IMT Bagerhat is yet not known. The IMT has no experience of conducting any Competency Based Training (i.e. CBT) programmes. There is no specific job placement cell yet established in the institute, and none is kept specifically assigned for the purpose as well. For both the diploma and basic/short courses the institute uses traditional curriculum; while BTEB and BMET certifications are used respectively for the diploma and basic/short courses.

As of the institute's opinion, the training resources/learning aids used in the classrooms are adequate, and the quality of training resources/learning aids is satisfactory. But they think that the lab aids and equipment used are inadequate and the quality of these resources is dissatisfactory. Given the varied opinions on the adequacy and quality of training resources/learning aids, the institute is presently satisfied with the training programme delivery as a whole. While asked if additional or new courses are introduced to the institute they opined that additional training resources/learning aids and lab aids/equipments will be required.

Human Resources (HR) Strengths

Currently the IMT has 11 teaching (all male), 1 lab (male), 19 support (of which 16 male and 3 female), and 1 management (male) staff. All-together the institute is having 32 staff members. Against the present staffing of the institute, a total of 260 students/trainees (of which 230 male and 30 female) were enrolled in the last year i.e. 2017 and 340 (of which 310 male and 30 female) in the current year i.e. 2018 which provides an average of 300 students' enrollment per year. According to this estimate, the IMT has presently a total of 1200 students (indicatively combining both the diploma and basic/short courses). This also provides about a staff - student ratio of 1:38, if the total students' enrollment counts.

Given the present staffing and student enrollment status, the institute authority is not satisfied with the present quantity and quality of teaching staff. They need specialized training support for them. Similarly, the adequacy and quality of lab staffing is not satisfactory to them, and they also need training support. While asked if additional or new courses are introduced to the institute they opined that additional and quality teaching and lab staff supports will be required.

Infrastructural and student accommodation facilities

The IMT Bagerhat is built on an around 2.5 acres of land areas. There are four multistoried (i.e. 3 and above) buildings in the institute, within which there is a total of 15 classrooms (of them 5 classrooms need renovation). There are six labs, 3 rooms for admin and management, 12 toilets (of which 8 for men and 4 for women), and dormitory facilities for 200 men and 150 women students/trainees in the IMT Bagerhat.

The present student accommodation capacity per training programme/course of the institute is apparently sufficient while most of these capacities are yet not fully utilized. As of the institute source, these are as follows:

Training/programmes	*Course type*	*# Total capacity*	*# Present students*	*% Capacity used*
Marine Technology	Diploma	200	175	87.5
Ship Building Technology	Diploma	200	160	80.0
Computer Office Application	Basic/short	40	30	75.0
Electrical Wiring	Basic/short	25	15	60.0
	Total:	**465**	**380**	**81.7**

There are library and/or learning resource centers/facilities both for students and teachers in the institute, and as of the institute's opinion those are easily accessible for them. Although these facilities are considered adequate for the learning purpose of students/trainees but are not adequate for teachers/trainers. There is no ramp facility for the students with disability, though the enrollment status of them is yet not known. However, there is stipend/grant facility in the institute for the poor talent students. When asked if new courses/programmes are introduced to the institute, they opined that additional classrooms, labs/workshops, library/LRC, and dormitory facilities would be required for the IMT; however, a second shift can be arranged within the current infrastructural facilities for an interim period, as they opined.

Local industry base and linkages

As of the institutes' observation, there are about 10 coconut oil mills, 2 fiber industries and 1 shipyard presently operating in the catchment. Computer application, automobile driving, welding and fabrication are locally popular wage based occupations, while electrical wiring occupation is equally popular for wage based as well as self-employment.

Presently, the institute has no apprenticeship programmes with local industry, and so no formal linkage with any of the local industries. However, as they opined, initiatives are taken for linkage building. Since the institute has no job placement cell established yet and none kept responsible for the purpose, they do not maintain any form of contact and liaison with local industries for the purpose of job placement of their successful graduates. And hence, the institute is not satisfied with the present form of relationship with local industries to increase job placement opportunity as well.

Perceived occupational skills demand in the locality i.e. catchment areas

Welding and fabrication, automobile driving, computer application, electrical wiring are the highly demanded occupational skills among youths in the catchment area, and then demand for carpentry skills is medium. The institute authority think that their current training programmes/courses are not designed and delivered fully in line with the local occupational skills demand, rather they are partly addressing.

Governance and other cross-cutting

The IMT Bagerhat follows the government rules and procedures for its overall management. As opined, they offer equal opportunity for male, female, and students with disability in enrollment as well as in obtaining existing other academic facilities. But students with disability are not being offered equal opportunities in dormitory and physical other facilities.

8.3 Sylhet Technical School and College (TSC)

Sylhet Technical School and College (TSC) is the oldest among the selected TVET provider, established in 1923 and running under academic and administrative control of the BTEB. The TSC is located at Technical Road, South Surma in Sylhet, and presently headed by its Principal Mr. Md. Saidur Rahman joined about 16 years before.

Academic-training background and preparedness

The institute is currently offering a total of 10 certificate (i.e. SSC Voc and HSC Voc) programmes. The institute has also previous experience of conducting both the CBT and basic/short programmes at NTVQF Level 1 before. Two CBT basic courses were previously conducted by the institute that are on: i) Carpentry for 3 months and ii) lacquer polishing for 3 months having started on June 2017 and ended by December 2017. All the previous basic/short courses were conducted during 2014 to 2018 that include: i) electrical house wiring for 45 days, ii) RAC for 45 days, iii) welding for 45 days, iv) mobile phone servicing for 3 months, v) driving cum auto mechanic for 45 days, vi) motorcycle repairing for 45 days, and plumbing and pipe fittings for 3 months. There is a well-functioning job placement cell established in the institute, and a specific person is kept assigned for the purpose. The cell is considered capable of facilitating job placement of the successful graduates coming out from the institute. For all the Diploma and Vocational courses, as offering now, the institute uses Traditional Curriculum and CBT curriculum for CBT courses; but provides BTEB certifications for all students as relevant. For all other basic/short courses they use CBT curriculum but provide Institution's own certification.

As of the institute's opinion, the training resources/learning aids used in the classrooms are adequate, and the quality of training resources/learning aids is satisfactory too. They also think that the lab aids and equipment used are adequate and the quality of these resources is satisfactory. And hence, the institute is presently satisfied with the training programme delivery as a whole. However, while asked if new CBT courses/programmes are introduced to the institute they will need additional training resources/aids as well as additional labs/equipment as per CBTA standard.

Human Resources (HR) Strengths

Currently the institute has a total of 54 teaching (of which 42 male and 12 female), 5 lab (all male), 16 support (14 male and 2 female), and 11 management (all male) staff. All-together the institute is having 86 staff members. Against the present staffing of the institute, there are 1693 (1454 male and 239 female) students enrolled in the last year i.e. 2017 and 1934 (1583 male and 351 female) students enrolled in the running year i.e. 2018. Given the present staffing and students' enrollment, the institute authority is satisfied with the present quantity and quality of teaching staff. But they need specialized training support for them. Similarly, the institute is satisfied with the number and quality of the present laboratory staffing. Similar to teaching staff they express need for training support to be provided on continual basis to the lab staff. While asked if additional or new courses are introduced to the institute they opined that additional teaching as well as laboratory staff support will be required.

Infrastructural and student accommodation facilities

Sylhet TSC is built on an around 5 acres of land areas. There are a total of 7 buildings in the campus of which 3 are single storied, 2 are two-storied, and the remaining 2 are three or above storied. There is a total of 25 classrooms in the institute (of them 17 classrooms are good in condition, 3 are relative old but

usable, 3 need immediate renovation, and 2 are abandoned). The institute use 20 classrooms for each programme. There are 15 labs, 3 rooms for admin and management functions, 25 toilets (of which 20 for men and 5 for women). The institute has 1 dormitory building offering residential facilities only for male students, none for female.

The institute presently runs double shifts for each of the programmes. The accommodation capacity and present student enrollment per training programme/course of the institute are grossly as follows:

Training/programmes	*Course type*	*# Total capacity*	*# Present students*	*% Capacity used*
General Electronics	Certificate	80	69	86.3
Automotive	Certificate	80	70	87.5
Wood Working	Certificate	80	69	86.3
Computer & IT	Certificate	80	71	88.8
Civil Drafting with CAD	Certificate	80	70	87.5
Farm Machinery	Certificate	80	69	86.3
Machine Tools and Operation	Certificate	80	70	87.5
General Electrical Works	Certificate	80	70	87.5
Refrigeration & Air Conditioning	Certificate	80	70	87.5
Welding and Fabrication	Certificate	80	70	87.5
	Total:	**800**	**698**	**87.3**

There are library and/or learning resource centers/facilities for both the students and teachers in the institute, and as of the institute's opinion those are easily accessible for them. This is also considered adequate for the learning purpose of the students and teachers. There are ramp facilities in all buildings for students with disability, but those are at ground floor level not at the staircases upward. There is stipend/grant facility in the institute for the poor talent students. When asked if new CBT courses/programmes are introduced to the instituted, they opined that additional classrooms, labs/workshops, and dormitory facilities would be required for the institute; and more importantly second shift cannot be utilized for the newly added programmes because presently all two shifts are being utilized.

Local industry base and linkages

As of the institutes' observation, there are number of industry varieties of types and sizes exist in the catchment. These include wood working, computer and IT, general electrical works, general electronics, automobile, light engineering, pharmaceuticals, transport equipment, agro food processing, tourism and hospitality management, IT, and informal industry sectors. Carpentry, welding and fabrication, driving automobile, electric house wiring, RAC, food and beverage servicing, housekeeping and computer application among others are locally popular occupations – both for wage based and self-employment.

Sylhet TSC has yet not established formal linkage with any local industries for the purpose of apprenticeship programmes, but initiatives are already taken to develop such formal industry linkage. However, presently the institute runs apprenticeship programmes with numbers of local industries based on informal linkages. They maintain various forms of contact and liaison with local industries for the purpose of job placement of their successful graduates. And hence, the institute is satisfied with the present form of relationship with local industries to increase job placement opportunity in future.

Perceived occupational skills demand in the locality i.e. catchment areas

In the Sylhet catchment, occupational skills only related to/associated with agro food processing, information technology, construction, light engineering, and furniture manufacturing have high demand; while there is medium demand for occupational skills related tourism and hospitality based industries. The institute authority think that their current training programmes/courses are designed and delivered partly in line with the local occupational skills demand.

Governance and other cross-cutting

Sylhet TSC follows the government rules and procedures for its overall management. As opined, they offer equal opportunity for male, female, and students with disability in enrollment as well as in obtaining existing other academic facilities. But female and students with disability are not being offered equal opportunities in dormitory and physical other facilities.

8.4 Gaibandha Technical Training Center (TTC)

Gaibandha Technical Training Center (TTC) is one of the newest among the selected TVET provider, established in 2015 and running under academic control of the BTEB and administrative control of the BTEB. It is located at Kholahati in Gaibandha, and presently headed by its Principal Mr. Md. Atiqur Rahman joined more than 3 years before.

Academic-training background and preparedness
The institute is currently offering a total of nine basic courses and duration of each course is for 6 months. The institute has no previous experience of conducting basic/short programmes or any CBT programmes. A basic/short course on Computer Operation, General Electrical Works, Auto Mechanics with Driving, Mechanical/Machinist, Welding & Fabrication, Sewing Machine Operation (garments), Electrical House Wiring, Dyeing Printing and Block Batik, Motor Driving, Mobile Servicing, Graphic Design (of 6 month duration) are conducting. There is a job placement cell established in the institute, and a specific person is kept assigned for the purpose; but presently not well staffed and functioning. The cell is considered capable enough of facilitating job placement of the successful graduates coming out from the institute. For all the basic short courses, as offering now, the institute uses CBT Curriculum as training aids. The TTC provides BMET certifications for all students.

As of the institute's opinion, the training resources/learning aids used in the classrooms are adequate, and the quality of training resources/learning aids is satisfactory too. They also think that the lab aids and equipment used are adequate but the quality of these resources is satisfactory. And hence, the institute is presently satisfied with the training programme delivery as a whole. However, while asked if new CBT courses/programmes are introduced to the institute they will need additional trained teachers, modern training resources/aids/equipment and additional well-equipped labs as per CBTA standard.

Human Resources (HR) Strengths
Currently the institute has a total of 11 teaching (of which 9 male and 2 female), 7 lab (all male), 2 support (all male), and 1 management (male) staff. All-together the institute is having 21 staff members. Against the present staffing of the institute, there are 585 (489 male and 96 female) students enrolled in the last year i.e. 2017 and 592 (474 male and 118 female) students enrolled in the running year i.e. 2018. Given the present staffing and students' enrollment, the institute authority is not satisfied with the present quantity and quality of teaching staff. But they need specialized training support for them. Similarly, the institute is not satisfied with the number and quality of the present laboratory staffing but express need for training support to be provided on continual basis to the lab staff. While asked if additional or new courses are introduced to the institute they opined that additional teaching as well as laboratory staff support will be required.

Infrastructural and student accommodation facilities
Gaibandha TTC is built on an around 2 acres of land areas. There are a total of 3 multi-storied (three or above) buildings in the campus. There is a total of 14 classrooms in the institute which are good in condition. The institute uses 2 classrooms for each programme. There are 8 labs, 2 rooms for admin and management functions, 32 toilets (of which 16 for men and 16 for women). The institute has dormitory facilities for 144 male students and 48 for female.

The institute presently runs single shift training for each of the programmes. The accommodation capacity and present student enrollment per training programme/course of the institute are grossly as follows:

Training/programmes	*Course type*	*# Total capacity*	*# Present students*	*% Capacity used*
Auto Mechanics with Driving	Basic	30	30	100.0
Mechanical/Machinist	Basic	30	30	100.0
Welding and Fabrication	Basic	30	30	100.0
Sewing Machine Operation (Garments)	Basic	30	30	100.0
House Keeping	Basic	20	10	50.0
	Total:	**140**	**130**	**90.0**

There are library and/or learning resource centers/facilities for the students and teachers in the institute and easily accessible for them. Such facilities are considered adequate for the learning purpose of the teachers and students. There are ramp facilities for students with disability. There is stipend/grant facility in the institutes for the poor talent students. When asked if new CBT courses/programmes are introduced to the institute, they opined that additional classrooms, labs/workshops, and dormitory facilities including staffing (both teachers and lab support staff) would be required for the institute; and more importantly second shift can be utilized for the newly added programmes.

Local industry base and linkages

As of the institutes' observation, there are number of industries operating in the catchment. These include Prodhan Group of Industries, M/S Tohura Engineering Works, M/S Tania Auto Rice Mills, M/S Prodhan Traders, Gaibandha Online, M/S Basundhara Agro Bangladesh, M/S Mondal Flours Mills, M/S Chowdhury Rice Mills, M/S Hamid Plastic Industries are the demandable industries in the catchment area. On the other hand, Computer Operator, IT Support Technician, Welder, Electrician, Driver, Sewing Machine Operator, Lathe Machine Operator are the prominent wage based occupations whereas Computer Shop, Welding Workshop, Electric Shop, Driving Schools and Institute, Tailoring and Dressmaking, Lathe Machine Workshop are the prominent Self-Employment base occupations.

Gaibandha TTC has been maintaining formal linkage with a few local industries for the purpose of apprenticeship programmes. They also has initiated to building linkage with local industries for the purpose of job placement of their successful graduates. But they are not satisfied enough with the present form of relationship with local industries to increase job placement opportunity in future.

Perceived occupational skills demand in the locality i.e. catchment areas

In the Gaibandha TTC catchment, occupational skills related to agro food processing, ICT, Transport Equipments, RMG, Construction, Light Engineering and Furniture sector ISCs. Civil Construction, Computer Operator, IT Support Technician, Sewing Machine Operator are the highly demandable occupations in the catchment area whereas Agro-Food Processing and Preservation, Transport workers and supervisors medium demandable occupational skills. The institute authority thinks that their current training programmes/courses are designed and delivered fully in line with the local occupational skills demand.

Governance and other cross-cutting

Gaibandha TTC follows the government rules and procedures for its overall management as well as follow rules derived from the local management committee. As opined, they offer equal opportunity for male and female and DAPS students in enrollment. The male, female and DAPs are also being given equal opportunity for accessing to dormitory and other physical facilities.

8.5 Jamalpur Technical School and College (TSC)

Jamalpur Technical School and College (TSC) is one of the oldest among the selected TVET provider, established in 1969 and running under academic and administrative control of the BTEB. It is located at Bazrapur in Jamalpur town, and presently headed by its Principal Engr. Md. Abul Kalam Azad joined more than a year before.

Academic-training background and preparedness

The institute is currently offering a total of four (of which two are Diplomas and another two are certificate i.e. SSC Voc and HSC Voc) programmes. The institute has previous experience of conducting basic/short programmes before (i.e. closed within last 5 years) but not for any CBT programmes. A basic/short course on driving cum auto mechanics (of 6 month duration) was conducted during 2015-2017. There is a job placement cell established in the institute, and a specific person is kept assigned for the purpose; but presently not well staffed and functioning. The cell is not considered capable enough of facilitating job placement of the successful graduates coming out from the institute. This has been because of the lack of separate well-equipped rooms with computer, internet connectivity and sitting accommodation, and they think that a Job Placement Officer being supported by a Computer Operator is needed. For all the diploma and Voc courses, as offering now, the institute uses Traditional Curriculum and handouts and others as training aids. The TSC provides BTEB certifications for all students.

As of the institute's opinion, the training resources/learning aids used in the classrooms are inadequate, and the quality of training resources/learning aids is dissatisfactory too. They also think that the lab aids and equipment used are inadequate but the quality of these resources is satisfactory. And hence, the institute is presently not satisfied with the training programme delivery as a whole. However, while asked if new CBT courses/programmes are introduced to the institute they will need additional trained teachers, modern training resources/aids/equipment and additional well-equipped labs as per CBTA standard.

Human Resources (HR) Strengths

Currently the institute has a total of 14 teaching (of which 13 male and 1 female), 2 lab (all male), 9 support (7 male and 2 female), and 5 management (4 male and 1 female) staff. All-together the institute is having 30 staff members. Against the present staffing of the institute, there are 1089 (985 male and 104 female) students enrolled in the last year i.e. 2017 and 1183 (1074 male and 109 female) students enrolled in the running year i.e. 2018. Given the present staffing and students' enrollment, the institute authority is not satisfied with the present quantity and quality of teaching staff. But they need specialized training support for them. Similarly, the institute is not satisfied with the number and quality of the present laboratory staffing but express need for training support to be provided on continual basis to the lab staff. While asked if additional or new courses are introduced to the institute they opined that additional teaching as well as laboratory staff support will be required.

Infrastructural and student accommodation facilities

Jamalpur TSC is built on an around 4.04 acres of land areas. There are a total of 5 buildings in the campus of which 3 are single storied (of which 2 are tin-shaded), 1 is two-storied, and the remaining 1 is three or above storied buildings. There is a total of 7 classrooms in the institute of them 3 classrooms are good in condition, 2 are relative old but usable, and 2 need immediate renovation. The institute use 2 classrooms

for each programme. There are 6 labs, 4 rooms for admin and management functions, 6 toilets (of which 4 for men and 2 for women). The institute has dormitory facilities for only 8 male students, none for female.

The institute presently runs single shift training for each of the programmes. The accommodation capacity and present student enrollment per training programme/course of the institute are grossly as follows:

Training/programmes	*Course type*	*# Total capacity*	*# Present students*	*% Capacity used*
Electric Engineering	Diploma	160	148	92.5
Mechanical Engineering	Diploma	160	136	85.0
HSC Vocational	Certificate	360	245	68.1
SSC Vocational	Certificate	640	620	96.9
	Total:	**1320**	**1149**	**87.0**

There are no library and/or learning resource centers/facilities for the students in the institute. But these facilities are there only for teachers, and as of the institute's opinion those are easily accessible for them. However, such facilities are considered inadequate for the learning purpose of the teachers. There are ramp facilities for students with disability. There is stipend/grant facility in the institute for the poor talent students. When asked if new CBT courses/programmes are introduced to the institute, they opined that additional classrooms, labs/workshops, and dormitory facilities including staffing (both teachers and lab support staff) would be required for the institute; and more importantly second shift cannot be utilized for the newly added programmes because presently all two shifts are being utilized.

Local industry base and linkages

As of the institutes' observation, there are number of industries operating in the catchment. These include approximately 2 nakshikatha, 4 chemical, 5 plastic, 10 light engineering, 2 poultry feed, 1 cold storage, and 1 cotton industries. As of the institute's observation, weaving nakshikatha, workshop mechanics, poultry and fish feed production, agricultural equipment production, cold storage management, and steel furniture manufacturing are popular (i.e. demandable) occupations for wage based and weaving nakshikatha, workshop mechanics, footwear production, carpentry, plastic products manufacturing, and melamine board furniture manufacturing are popular occupations for self-employment in the catchment area.

Jamalpur TSC has been maintaining formal linkage with a few local industries for the purpose of apprenticeship programmes. They maintain various forms of contact and liaison with local industries for the purpose of job placement of their successful graduates, but are not satisfied enough with the present form of relationship with local industries to increase job placement opportunity in future.

Perceived occupational skills demand in the locality i.e. catchment areas

In the Jamalpur catchment, occupational skills related to agro food processing, hardware and software technician, vehicle maintenance technician, garment sewing machine operator, machinist, tourist guide, solar cell technician and weaving nakshikatha are highly demanded; while there is medium demand for occupational skills related to masons, leather goods manufacturing, artistic furniture technician, pharmaceutical manufacturing technician, and ceramic product design technicians. However, the institute

authority think that their current training programmes/courses are not designed and delivered fully in line with the local occupational skills demand. To make those more aligned and result-oriented, the design and development of appropriate training curriculum including aid materials and introduction of dual training system are recommended.

Governance and other cross-cutting

Jamalpur TSC follows the government rules and procedures for its overall management. As opined, they offer equal opportunity for male and female students in enrollment but not for students with disability. The female and DAPs are also not being given equal opportunity for accessing to dormitory and other physical facilities.

8.6 BS Kaptai Polytechnic Institute

The Bangladesh Sweden (BS) Polytechnic Institute, Kaptai is one of the oldest TVET providers, established in 1963 and running under academic and administrative control of the BTEB. It is located at Kaptai in Rangamati Hill Tracts (i.e. a union under Sadar Upazila of the district), and presently headed by its Principal Mr. Ashutosh Nath joined about a year and half before.

Academic-training background and preparedness

The institute is currently offering six diploma courses on i) Automobile Technology, ii) Electrical Technology; iii) Mechanical Technology; iv) Civil Wood Technology; v) Construction Technology; and vi) Computer Technology. All Diploma courses are of 4 years in duration. The number of teachers/trainers per course currently engaged in the Polytechnic is yet not known. The institute has experience of conducting both the Competency Based Training (i.e. CBT) and basic/short programmes i.e. NTVQF Level 1 before. Two CBT basic courses were previously conducted by the institute that is on: i) Carpentry and ii) Wood working machine operation. All that basic courses were for 520 (360+160) hours, and started in June 2017 and ended offerings by February 2018. There is a job placement cell established in the institute, and a specific person is kept assigned for the purpose; but not functioning well. This has been because of the fact, as said by the institute authority, there is no permanent job placement officer employed and posted there. A Teacher, in addition to his main responsibility, does work as job placement officer. According to them, it is very difficult for a teacher to work in full swing job placement officer after discharging his routine original duties. Hence, the cell is considered not capable enough for facilitating job placement of the successful graduates coming out from the institute. For all the diploma courses, as solely offering now, the institute uses Traditional Curriculum, and provides BTEB certifications to the graduates being passed.

As of the institute's opinion, the training resources/learning aids used in the classrooms are adequate, and the quality of training resources/learning aids is satisfactory. They also think that the lab aids and equipment used are adequate and the quality of these resources is satisfactory. And hence, the institute is presently satisfied with the training programme delivery as a whole. However, while asked if new CBT courses/programmes are introduced to the institute they will need additional training resources/aids as well as additional labs/equipment as per CBTA standard.

Human Resources (HR) Strengths

Currently the institute has 39 teaching (of which33 male and 6 female), 20 lab (all male), 17 support (all male), and 8 management (all male) staff. All-together the institute is having 84 staff members. Against the present staffing of the institute, there are 2011 (1740 male and 271 female) students enrolled in the last year i.e. 2017 and 1671 (1437 male and 234 female) students enrolled in the running year i.e. 2018. Given the present staffing and students' enrollment, the institute authority is not satisfied with the present quantity of teaching staff. But they are satisfied with the staff quality. Nonetheless, they express need for specialized training support for them to be more competent. Similarly, the institute is not satisfied with the number of present laboratory staff, but in terms of their quality they are satisfied. Similar to teaching staff they express need for training support to be provided on continual basis to the lab staff. While asked if additional or new courses are introduced to the institute they opined that additional teaching as well as laboratory staff support will be required for the additional demand.

Infrastructural and student accommodation facilities

BS Kaptai Polytechnic Institute is built on an around 30.95 acres of land areas. There are a total of 6 buildings in the campus of which 2 are single storied, 2 are two-storied, and the remaining 2 are three or above storied. There is a total of 56 classrooms in the institute (of them 28 classrooms are good in condition, another 28 are relatively old but usable). The institute use 13 classrooms for each technology i.e. diploma course. There are 15 labs, 1 room for admin and management functions, 13 toilets (of which 12 for men and 1 for women). The institute has 3 dormitory buildings, two for male and another for female students, while that can all-together accommodate 250 male and 50 female students.

The institute presently runs two shifts for each of the six diploma courses. Present student accommodation capacity per training programme/course of the institute is 50 for morning shift and 50 for evening shift, which equates a total of 100 students per course. The present number of students per course is yet not known; however, as of the institute source, these are grossly as follows:

Training/programmes	*Course type*	*# Total capacity*	*# Present students*	*% Capacity used*
Automobile Technology	Diploma	100 x 4		
Electrical Technology	Diploma	100 x 4		
Mechanical Technology	Diploma	100 x 4		
Civil Wood Technology	Diploma	100 x 4		
Construction Technology	Diploma	100 x 4		
Computer Technology	Diploma	100 x 4		
	Total:	**2400**	**1966**	**81.9**

There are library and/or learning resource centers/facilities only for students in the institute, and as of the institute's opinion those are easily accessible for them. But this is not considered adequate for the learning purpose of the students. For teachers, there is no library and/or learning resource centers/facilities in the institute, and so they have not access too. There is stipend/grant facility in the institute for the poor talent students. When asked if new CBT courses/programmes are introduced to the instituted, they opined that additional classrooms, labs/workshops, library/LRC, and dormitory facilities would be required for the institute; and more importantly second shift cannot be utilized for the newly added programmes because presently for diploma courses all two shifts are being utilized. If new course are to be introduces, either new buildings should be constructed or any one shift of diploma courses must be stopped, as they firmly opined.

Local industry base and linkages

As of the institutes' observation, there are a few wood based industries and additionally paper mills presently exist and operating in the catchment. Carpentry, welding and fabrication, driving automobile, electric house wiring, and computer application are locally popular occupations – both for wage based and self-employment.

Presently, the institute has no apprenticeship programmes with local industry, and so no formal linkage with any of the local industries. There is also no such initiatives yet taken for linkage building. They do not maintain any form of contact and liaison with local industries for the purpose of job placement of their

successful graduates. And hence, the institute is dissatisfied with the present form of relationship with local industries to increase job placement opportunity in future.

Perceived occupational skills demand in the locality i.e. catchment areas

In the Kaptai catchment, occupational skills only related to/associated with light engineering and furniture manufacturing have high demand; while there is medium demand for occupational skills related to agro-food processing, IT, construction, and tourism and hospitality based industries. The institute authority thinks that their current training programmes/courses are designed and delivered fully or partly in line with the local occupational skills demand. To ensure that all courses are fully and optimally aligned with the local occupational demand, the institute suggests for introducing welding and fabrication, electrical house wiring, driving automobile, wood working, computer application, carpentry and rod binding programmes.

Governance and other cross-cutting

BS Kaptai Polytechnic Institute follows the government rules and procedures for its overall management. As opined, they offer equal opportunity for male, female, and students with disability in enrollment as well as in obtaining existing other academic facilities. But students with disability are not being offered equal opportunities in dormitory and physical other facilities.

8.7 Feni Polytechnic Institute

Feni Polytechnic Institute is one of the oldest TVET providers in the country, established in 1964 and running under administrative and academic control of the Bangladesh Technical Education Board (i.e. BTEB). It is located at Falashor of Feni district (i.e. formerly a sub-division of the greater Noakhali district), and presently headed by its Principal Mr. Mohammad Mohidur Rahman joined about a year and four months before.

Academic-training background and preparedness

The institute is currently offering six diploma courses on i) Civil Technology, ii) Electrical Technology; iii) Mechanical Technology; iv) Power Technology; v) Computer Technology; and vi) Architecture and Interior Design. All Diploma courses are of 4 years duration. The number of teachers/trainers per course currently engaged in the Feni Polytechnic is yet not known. The institute has no experience of conducting Competency Based Training (i.e. CBT) programmes, but has experience of conducting three basic/short courses before. All that short/basic courses were for 24 months, and started in 1964 and ended offerings by the year 1984. There is a job placement cell established and presently well-functioning in the institute, and a specific person is kept assigned for the purpose. As said, the cell is capable enough for facilitating job placement of the successful graduates coming out from the institute. For all the diploma courses the institute uses CBT curriculum, CBT Logbook and CBIMS, and provides BTEB certifications to the graduates being passed.

As of the institute's opinion, the training resources/learning aids used in the classrooms are adequate, and the quality of training resources/learning aids is satisfactory. But they think that the lab aids and equipment used are inadequate and the quality of these resources is dissatisfactory. And hence, the institute is not presently satisfied with the training programme delivery as a whole. To make all these satisfactory, they recommend the courses to be rearranged and well-equipped as per CBTA system requirement, and lab facilities and equipment need to be expanded and modernized.

Human Resources (HR) Strengths

Currently the institute has 23 teaching (all male), 17 lab (16 male and 1 female), 7 support (all male), and 4 management (all male) staff. All-together the institute is having 51 staff members. Given the present staffing, the institute authority is satisfied with the present quantity and quality of teaching staff. At the same time, they express need for specialized training support for them to be more competent. Similarly, the adequacy and quality of lab staffing is satisfactory to them, and they need training support to be provided on continual basis. While asked if additional or new courses are introduced to the institute they opined that additional and quality teaching will be required but the present lab staff support is considered to be sufficient for the considerably additional demand.

Infrastructural and student accommodation facilities

Feni Polytechnic Institute is built on an around 14 acres of land areas. There are a total of 7 buildings in the campus of which 1 is single storied, 5 are two-storied, and 1 is three or above storied. There is a total of 37 classrooms in the institute (of them 20 classrooms are good in condition, 10 are relatively old but usable, 5 need renovation, and 2 are abandoned/not used). The institute use 6 classrooms for each technology i.e. diploma course. There are 12 labs, 5 rooms for admin and management, 16 toilets (of which 12 for men and 4 for women), and dormitory facilities for 250 men and 100 women students/trainees in the institute.

The present student accommodation capacity per training programme/course of the institute is apparently sufficient while these capacities are found mostly utilized. As of the institute source, these are as follows:

Training/programmes	*Course type*	*# Total capacity*	*# Present students*	*% Capacity used*
Civil Technology	Diploma	640	600	93.8
Electrical Technology	Diploma	640	625	97.7
Mechanical Technology	Diploma	640	600	93.8
Power Technology	Diploma	640	600	93.8
Computer Technology	Diploma	300	300	100.0
Architecture & Interior Design	Diploma	300	300	100.0
	Total:	**3160**	**3025**	**95.7**

There are adequate library and/or learning resource centers/facilities both for students and teachers in the institute, and as of the institute's opinion those are easily accessible for them. There is also a ramp facility for the students with disability, though the enrollment status of them is yet not known. However, there is stipend/grant facility in the institute for the poor talent students. When asked if new CBT courses/programmes are introduced to the instituted, they opined that additional classrooms, labs/workshops, library/LRC, and dormitory facilities would be required for the institute; and more importantly existing facilities are considered enough for diploma courses, as they opined.

Local industry base and linkages

As of the institutes' observation, there are about several number of rerolling mills, dying, pharmaceuticals, cotton factories, towel factories, garment, light engineering industries presently exist and operating in the catchment. Welding and fabrication, carpentry, electrical house wiring, beautician, bakery, automobile technicians are locally popular occupations, while there is no wage and self-employment specific occupations are suggested.

Presently, the institute has no apprenticeship programmes with local industry, and so no formal linkage with any of the local industries. However, as they opined, initiatives are taken for linkage building. They only maintain an informal contact with local industries for the purpose of job placement of their successful graduates. And hence, the institute is somewhat satisfied with the present form of relationship with local industries to increase job placement opportunity in future.

Perceived occupational skills demand in the locality i.e. catchment areas

In the Feni catchment, occupational skills related to/associated with RMG, construction, light engineering, furniture manufacturing, pharmaceuticals and informal sectors have high demand; while there is medium demand for occupational skills related to agro-food processing, leather and leader goods, IT, transport equipment, ceramics, and tourism and hospitality based industries. The institute authority thinks that their current training programmes/courses are designed and delivered partly and sometimes fully in line with the local occupational skills demand. To ensure that all courses are fully and optimally aligned with the local occupational demand, the institute suggests for introducing programmes under construction, transport equipment, RMG, light engineering and pharmaceutical industry sectors (i.e. ISs).

Governance and other cross-cutting

Feni Polytechnic Institute follows the government rules and procedures for its overall management. As opined, they offer equal opportunity for male, female, and students with disability in enrollment as well as in obtaining existing other academic facilities. But students with disability are not being offered equal opportunities in dormitory and physical other facilities.