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**Availability of Data related to Technical and
Vocational Education and Training (TVET) in
Bangladesh**

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Abbreviations

ADB	Asian Development Bank
BAIRA	Bangladesh Association of International Recruiting Agencies
BBS	Bangladesh Bureau of Statistics
BCIC	Bangladesh Chemical Industries Corporation
BEI	Bangladesh Enterprise Institute
BGMEA	Bangladesh Garments Manufacturers & Exporters Association
BIDS	Bangladesh Institute of Development Studies
BIMT	Bangladesh Institute of Marine Technology
BITAC	Bangladesh Industrial and Technical Assistance Center
BJMC	Bangladesh Jute Mills Corporation
BKMEA	Bangladesh Knitwear Manufacturers & Exporters Association
BMET	Bureau of Manpower Employment and Training
BMTF	Bangladesh Machine Tools Factory
BOESL	Bangladesh Overseas Employment Services Limited
BOI	Board of Investment
BPC	Bangladesh Parjaton Corporation
BRAC	Bangladesh Rural Advancement Committee
BSCIC	Bangladesh Small and Cottage Industries Corporation
BSCO	Bangladesh Standard Classification of Occupation
BSEC	Bangladesh Steel and Engineering Corporation
BSFIC	Bangladesh Sugar and Food Industries Corporation
BSIC	Bangladesh Standard Industrial Classification
BTEB	Bangladesh Technical Education Board
BTMC	Bangladesh Textile Mills Corporation
CAD	Computer Aided Design
CAM	Computer Aided Manufacturing
CBT	Community Based Training
CFTI	Central Fertilizer Training Institute
CMI	Census on Manufacturing Industries
CNC	Computer and Numerical Controlled
DAE	Department of Agricultural Extension
DTE	Directorate of Technical Education
DYD	Department of Youth Development
EPZ	Export Processing Zone
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GoB	Government of Bangladesh
HRD	Human Resource Development

ICS	Investment Climate Survey
ICT	Information and Communication Technology
ILO	International Labour Organization
ISCO	International Standard Classification of Occupation
IT	Information Technology
MoA	Ministry of Agriculture
MoC	Ministry of Communication
MoCAT	Ministry of Civil Aviation & Tourism
MoE	Ministry of Education
MoEF	Ministry of Environment and Forest
MoEWOE	Ministry of Expatriates' Welfare and Overseas Employment
MoFL	Ministry of Fisheries & Livestock
MoHFW	Ministry of Health and Family Welfare
MoI	Ministry of Industries
MoJT	Ministry of Jute and Textiles
MoLE	Ministry of Labour and Employment
MoLGRDC	Ministry of Local Government, Rural Development & Cooperatives
MoPERM	Ministry of Power, Energy & Mineral Resources
MoPT	Ministry of Posts & Telecommunication
MoS	Ministry of Shipping
MoSICT	Ministry of Science And Information& Communication and Technology
MoSW	Ministry of Social Welfare
MoWCA	Ministry of Women and Children Affairs
MoYS	Ministry of Youth & Sports
NGO	Non- Government Organization
NSS	National Skill Standard
OJT	On the Job Training
PRSP	Poverty Reduction Strategy Paper
RMG	Readymade Garments
TICI	Training Institute for Chemical Industries
TSC	Technical School and College
TTC	Technical Training Center
TTI	Technical Training Institute
TVET	Technical and Vocational Education and Training
TVQF	Technical & Vocational Qualifications Framework
UCEP	Underprivileged Children Education Program
VTI	Vocational Training Institute
WTC	Women Training Center

EXECUTIVE SUMMARY

Bangladesh is a country with a population of approximately 140m. and a labour force of about 60m. Technical and Vocational Education and Training (TVET) is indispensable for the development of human capital of this country. The Constitution of the Republic states that *“The state is responsible for development of human resources of the country irrespective of gender, and to assist in employment as per the capabilities of every citizen.”* In the National Strategy for Accelerated Poverty Reduction (2005) the emphasis is given to the enhancement of workers’ skills resulting in the *“Improvement of the percentage of vocational and technical graduates obtaining employment both in the domestic and international markets”*.

This study has been commissioned by the project “Technical and Vocational Education and Training (TVET) reform in Bangladesh”, which is funded by the European Union and implemented by the ILO. This study has attempted to map the sources of TVET- related data and assess their availability, reliability, and coverage. This study will contribute to the development of a database on TVET to better inform the delivery planning and resource allocation decisions and assess progress in the TVET sector, and has addressed the need for improved the data collection and data management for TVET in Bangladesh. This study has developed a structure and examined the three major sets of data covering: (i) demand for TVET, (ii) supply of TVET, and (iii) on matching between demand and supply. This study attempted, to a possible extent, to cover both public and private TVET markets. The tables describing the demand for TVET are coded with “D” (eg., Table D10); tables providing data on the supply are coded with “S” (eg., Table S01); tables producing evidence that supply is matching the demand in TVET are coded with “SMD” (eg., Table SMD05).

The mix of the data covered by this report reflects specific objectives of the TVET reform project in Bangladesh. One such objective is to ensure access to TVET of people with lower levels of general education, particularly those who accomplished primary school and reached Grades 6-8. Special attention is also given to the collection of the gender sensitive data on the access of girls to skills development programmes, their successful graduation from courses and participation in TVET as teachers and managerial staff. Specific data also need to be collected on the potential skills development needs of the working children enabling to prepare them as skilled workers for gainful and decent employment at the legal working age. For the above reasons, the report has proposed collecting some data which is not currently available.

This study is the first in the series of development works aiming to design and implement a system of TVET-related data in Bangladesh. For this reason the current report has been unable to suggest how the existing data system should revised, and what new types of data need to be collected. It is also left to the later stages of the project to propose who, how and through which instruments, should collect, store, process and supply the TVET-related data.

Methodology of the study

The study involved collection of available data from statistical sources as well interviews with relevant agencies. Analysis of data focuses on its availability, frequency of collection, relevance and reliability.

Data was collected from public and private providers, NGOs, industry associations and trade bodies, joint-venture projects and other agencies. Data from journals, statistical booklets, and electronic publications was also analysed. Other sources of data involved information published by government departments supervising various TVET training providers, ministries, and agencies in charge of statistics (BBS, BANBEIS, etc.). A sample of the public and private TVET providers as well as of the training NGOs were interviewed enabling to examine the types of data available in the individual providers. Such data mostly covers student enrolments and final graduations per training course.

The data on demand for TVET covered:

- the demand of youth for the formal TVET programmes which is influenced by the demographic processes, progression of youth in the general education and the patterns of transfer from general education to TVET and the labour markets;
- theoretical demand from youth and the child labour who currently have no access to the publicly-funded formal TVET;
- the labour force, by location and gender;
- the demand for skills training caused by the structure of the economy (sectors and sub-sectors) as well as by the structure of skilled jobs in companies from different economic sectors;
- size and growth of the labour force and productivity in different sub-sectors;
- the data the FDI and local investments are viewed as important indicators of the future demand for skilled workforce; and
- migration outflows of skilled workers.

The data on the supply of TVET involved:

- enrolment and seat capacity of public and private TVET providers and NGOs per type of institution, TVET programme and award;
- data on the supply of specialist training courses provided by the line ministries for relevant industries; and
- inflows of skilled migrants returning to Bangladesh from the overseas labour markets.

The supply- matching- demand data in TVET covered:

- direct comparisons between the structure of TVET supply and the labour force structures in the economy;
- labour market success of fresh graduates
- unemployment rates of Certificate and Diploma holders; and
- company vacancies for skilled jobs

Principal findings

Findings on the demand-side data

The demand for TVET in this study is viewed as consisting of two streams - the *demand from youth for training courses* and the *demand from the economy for skilled and educated graduates*. The size of the potential demand for TVET courses from the youth who drop out from general education failing to accomplish Grade 8 was impossible to assess because of lack of consistent data on the pupils' progression in general schooling. Moreover, there is no data available on the patterns of transition of youth from the general education to TVET and the labour markets. The true size of the student-driven demand for TVET was impossible to assess because no data was available on the numbers of applicants: Consequently, the data on enrolments the demand for training programmes¹.

The scope of assessment of the *demand of the economy* for the educated and skilled workforce, at this stage of the project, has been reduced to the formal economy alone. The assessment of such demand is a particularly complex issue as no data is available on the occupational and qualifications structures of the industry subsectors. This study has been advised by the findings from another empirical study recently implemented by the EC/ILO TVET Reform Project in Bangladesh.² Its findings indicated that companies in Bangladesh do not use a conventional definitions of the levels of skills and therefore the terms "skilled and high-skilled worker" cannot be used in accurate statistical assessments.

The occupational and qualification structures of the industry sub-sectors identified by the latter study only indicate the actual structures of the workforce rather than the jobs' occupational and qualifications requirements. Discrepancies can be very wide between the actual qualification structures of the workforce and the qualifications requirements of the jobs. It is particularly so in the countries and industries where employers pay no respect to TVET awards. For this reason, the Certificate and Diploma holders may be massively employed in the jobs which do not require any significant training. This situation can be aggravated further when the supply of TVET graduates significantly exceeds the demand for them from the economy.

Consequently, an assessment of the demand for an educated and skilled workforce across industries can be improved through comparative assessment of the productivity growth and

¹ Training institutions in Dhaka and Chittagong experience increasing demand for admission. In the trades like welding, RAC, Electrical and Electronics, the ratio of applicants to the seating capacity was 3-4/1. In some other trades, the ratio is about 2-3/1. Some trades like civil drafting, mechanical drafting, carpentry, etc. experienced fewer applicants. This indicates that the data on actual enrolments do not adequately describe the demand for skills training.

² R. Rahman, A. Mondal, R. Islam: (*Mapping and Analysis of Growth-Oriented Industrial Sub-Sectors and their Skill Requirements in Bangladesh.*) ILO, Dhaka, 2008 draft report

employment growth in different industry subsectors. It can be assumed that the sub-sectors with fast growing productivity and exports, require increased inputs from skilled and educated labour forces. It can also be assumed that the growing industries which continue increasing numbers of their employees will proportionately require more skilled and educated workers and technicians. The opposite assumptions hold true for the industries with declining productivity and employment.

The early assessments of changes in the demand for skilled workforce can be done through accessing data on the FDI and local investments in the different industry subsectors. Data published by the Board of Investment (BOI) on growth of industries, employment in industry sectors, FDI flow, local investments, etc. can help to understand the general trends in the demand for TVET. This data is regularly published and available on various websites. The Census of Manufacturing Industries (CMI) is also regularly conducted by BBS.

This study benefitted from material generated by the Bangladesh Bureau of Statistics (BBS) which publishes data on population, age groups, workforce, GDP growth, employment, and general education. However, the Labour Force Survey (LFS) which is conducted in Bangladesh every 3-4 years, commonly deals with very general-level data and in its current form cannot be applied as an useful instrument for collecting the specific data on the demand and supply in TVET. The LFS-generated statistical data on large occupational groupings like managers and professionals, clerks, etc. are also available in Bangladesh. However the formats used by the statistical agencies for collecting such data are oversimplified and they can only be used for general guidance rather than for advising decisions on supply and demand in TVET. The issue of industry specific data cannot be addressed without setting-up a system of regular establishment surveys which address demands for information from TVET planners and decision makers.

The flows of skilled and educated migrants remain an important factor in Bangladesh training and labour markets. These flows affect both the demand for and supply of skills. Many people acquire education and skills specifically for working overseas. The migration data at district level shows how significant migration flows can be. Although BMET collects and publishes solid data on overseas employment on its website, the profile of such data is insufficient for making judgments on the flow of educated and trained persons. Moreover no data exists on the skilled returnees who contribute to the supply of new skills in the labour market.

The need for a national system enabling easy registration and data processing on the unemployed and under-employed skilled and educated people as well as on the industry demand for competent staff would be required in order to improve understanding of whether the education and training markets maintain some sort of equilibrium with the labour markets.

Some data are available on the TVET markets at the district level from which one could be amazed with a massive training offer by the NGOs and private providers. These data were generated however by occasional studies intended for some other purposes and cannot be utilized for the regular training delivery planning and monitoring.

Findings on the supply-side data

Public TVET in Bangladesh is delivered by institutions belonging to 19 different ministries. A large number of proprietary institutions deliver training courses for fees. Data on TVET providers and their courses, intake, and graduations are available from the agencies like BMET, DTE, BTEB, DYD, Department of Textiles, BANBEIS, etc. Although these data are published irregularly, they have been assessed as reliable.

Data on the proprietary providers of TVET are not published regularly. Available are only the data regarding the courses affiliated with BTEB which are published by BTEB. Some data on the private provision is however collected by individual institutions and can be obtained from them.

BTEB publishes annual reports involving data on student intake and pass-out rates by course and qualification level. The data on the labour market success of graduates is not, however, collected either centrally or by the individual TVET providers. Although some studies were conducted by BMET, BTEB and other departments on the employment of graduates, these findings are not regular and less reliable.

Hundreds of large and small NGOs offer skills training through short courses. NGOs providing skills training do maintain records of their activities, but this data is never collected and published. Industry bodies also provide training which is adjusted to the needs of relevant industries and companies. Some companies also offer in-house training courses although on a limited scale. There is little or no data on this activity.

Industrial companies are considerable suppliers of semi-skilled and skilled workforce through on-the-job training. The scale of on-the-job training for new workers is huge involving in some industries some 20-30 percent of workers at any given time.³ Employers prefer recruiting apprentices and helpers who develop skills through work practice rather than formal training, and workers typically also prefer to learn a trade while working because of immediate earning and employment opportunity. Since establishment surveys are conducted rarely and do not collect data on workers learning trades on the job, this data is not currently available and needs to be explored further.

³ R. Rahman, A Mondal, R.Islam, op.cit.

The demand for *skill retraining* is growing especially from the labour force retrenched from the public sector enterprises and from returnees from overseas employment. This demand should be taken account of in the development of a national TVET database.

Findings on data regarding matching supply and demand in TVET

Although it was possible to conceptually outline a sub-set of data for judgments on the degree of alignment between the demand and supply in TVET, most of specific data such as the employment status of fresh TVET graduates, unfilled vacancies for the skilled-worker and technician jobs, share of TVET graduates amongst the registered unemployed, etc. are not currently available on a regular basis. Importantly, the lack of consistent industrial practices in qualifying the jobs as “semiskilled, skilled or high-skilled” or the “technician-level jobs” in Bangladesh prevents making direct comparisons between the demand and supply of graduates for individual trades. New data collection mechanisms are required for producing and processing such data.

The data which is currently lacking on TVET includes:

- actual numbers of youth dropping from general schooling after the Grade 5 who are willing to enter further education and training to acquire skills,
- data on progression from different types and levels of education to formal TVET programs,
- potential district-level and upazila-level demand for skills development courses,
- regional and district level mapping of TVET program, annual enrolments per trade and award,
- data on expected graduates by skilled occupation,
- data on the demand for skilled occupations employed in the local economy and overseas,
- data on the education and experience profiles of the unemployed and under-employed,
- labour market success of TVET graduates in the occupations in which they received training
- rates of return to TVET per type of programme, etc.

Principle recommendations

It is recommended that:

1. A system of TVET-related data be developed in Bangladesh given the massive training supply and growing demand from youth. Collecting and processing data is expensive and such costs are only justifiable if the data can inform certain policy and management decisions in TVET.
2. In order to assess the demand for TVET programmes, the requirements of the population and the economy need to be surveyed and published regularly. BBS needs to review its practices of conducting the establishment surveys to incorporate the demand for information required by TVET planners, as availability of accurate data on the industries’ occupational and

qualifications structures would allow improvements to the information base for TVET decisions. The establishment surveys should be more frequent, enabling more effective assessments of the growth and structural changes in the labour force and industry demands for an educated and skilled workforce.

3. Industry should be directly involved in providing data on the demand for skilled workers across different occupations. This may be a task undertaken by industry associations or trade bodies with assistance from government as necessary. The role of the economic sectors through the Association of trade bodies and other industry bodies needs to be encouraged, enabling them to improve assessment of the demand for skilled and educated graduates and improve their linkages to the TVET system.
4. The collection of supply side data in TVET should cover all major providers. Not all of them, however, may need to be followed-up on the annual basis. For instance, many short-term programmes are conducted by NGOs in the community to impart skills for income-generating activities. As long as the TVET system is not given a major role in the provision of skills training for income generation, the data on the demand for and supply of such programmes could be collected once in several years.
5. Generating data to assess how the supply of TVET services matches the demand for them is a new task for many countries. One of the principal indicators here remains the labour market success of TVET graduates. TVET providers should be strictly required to follow up on the labour market status of their graduates and report to their respective agencies: BMET, DTE, DYD, etc on the annual basis. This work should be implemented at various qualification levels and cover graduates of polytechnics, SSC (voc), HSC (voc) and graduates from shorter courses. Collection of data should become a compulsory function assigned to the TVET institutions. TVET providers should be provided with standard questionnaires and their staff trained in the standard procedures for such surveys enabling to ensure reliability of data.
6. Information on enrolments and graduations of individual TVET providers should be made publicly available allowing for benchmarking of performance. This may or may not be linked to a dedicated website that could be established to guide the public on TVET providers and their course offerings, to provide guidance on the content of TVET programmes and the national TVET qualifications, and to guide TVET students and graduates on the employment opportunities in various trades and industries.
7. Private training providers offering programs not affiliated with BTEB should also be encouraged to collect the above data and supply them to the relevant agencies.
8. TVET data should be collected, stored and processed, by a dedicated and competent organization set up for this purpose (ie: a skills training and labour market observatory).

Such an organization should have funds and staff trained in the collection, processing and interpretation of data related to TVET. This data would be used by the policy-makers, TVET administrators and national planners to coordinate, monitor and evaluate progress in TVET. This data would also be indispensable for making investment and funding decisions in TVET.

9. Ongoing work on the data system should continue to expand the data entries, eliminate duplication and develop methods for combining the data. Methodological and technical guidance for the TVET information system needs to be developed further involving standard forms and techniques of data collection, processing, and interpretation as well as the formats in which the data will be provided to various users. National professionals need to be trained in handling the TVET-related data to ensure sustainability of this important work initiated by the TVET reform project.
10. Data on demand for and supply of TVET may best be structured on the basis of the system of occupational qualifications which is currently undergoing a review by the TVET reform project. This would allow for identification of qualification structures in the economy, as well as skills shortages, and will help maintain the supply-demand equilibrium between TVET and the labour market.
11. Skills development in the vast informal economy of Bangladesh is taking place on an enormous scale as it is a matter of personal survival for millions of people. This issue has not been touched upon during the current phase of this study. It would appear that the type of data, and methods of collection for the demand and supply of skills in the informal economy are different and will be addressed later in the TVET Reform Project.

CHAPTER I: DATA ON THE DEMAND SIDE IN TVET

1. Data on the student demand for TVET

1.1 Data on potential demand for TVET courses from youth who finished general schooling at Grades 5-7

The present education system of Bangladesh is divided into three major stages - primary, secondary and tertiary education. The primary level institutions impart primary education. Junior, secondary and higher secondary level institutions impart secondary education. The Degree, Masters and other higher-level qualifications are awarded by the tertiary education institutions. Primary education (Grade I-V) is administered by the Ministry of Primary and Mass Education (MOPME), while all other educational areas up to the higher education are supervised by the Ministry of Education (MOE). The post-primary stream of education is structured into two systems in terms of curriculum: general education and madrasah education. The TVET stream starts after the completion of Grade 8.

Many general education students drop out after the completion of primary education. Currently, this vast group who stopped their education before accomplishing Grade 8 are not entitled to enroll in any formal TVET course. For this reason they have to join the labour market without training and at the ages which are below the legal working age (15 years).

Improvements in the national skills development system and the system of formal qualifications should aim to accommodate these youth. For this reason it is necessary to collect data on this group of youth who accomplished primary school but failed to complete Grade 8. Such data is currently not collected by BBS and BANBEIS.

The information currently available on the general education system is presented in **Table D01** and **Table D02** below:

Table D01: Number of primary schools and enrolments

Primary Schools	Number of schools		Pupils (000)	
	2004	2005	2004	2005
Public Primary Schools	37,671	37,672	10,359	9,484
Private Primary Schools & Other	45,197	42,729	7,593	6,742
Total	82,868	80,401	17,952	16,226

Source: BBS

Table D02: Number of secondary schools and students by Division

Division	School		Student (000)	
	2003	2005	2003	2005
Barisal	1557	1634	487	521
Chittagong	2668	2812	1481	1442
Dhaka	4185	4369	2057	2092
Khulna	2516	2743	960	1031
Rajshahi	5723	6144	2028	1978
Sylhet	737	798	325	335
Total	17,386	18,500	7,338	7,399

Source: BBS

An estimate of the number of drop-outs from primary schools could be done as follows. The number of pupils at the primary level in both the public and private primary schools and other primary level institutions in 2005 was 16,226,000. The number of students in TVET at SSC level is 73,99,000. About 7,51,421 students appeared in the SSC examinations and 3,94,993 of them passed out in 2005. From these figures it can be assumed that about 8,00,000 students annually reach grade 8 and 8⁺ and qualify for the formal TVET Programmes. About 30,00,000 pupils reach Grade 5 annually. Therefore about $(30,00,00 - 8,00,000) = 22,00,000$ students drop out annually after completion of Grade 5.

Data on this large group of youth who although have not reached Grade 8 but may be able and willing to undertake vocational training is currently not available. The structure of such data to be collected in the future is proposed in **Table D03**.

Table D03: Annual school completions from Grades 5-6-7-8 (by location and gender)

Grades	Urban		Rural		Total	
	Male	Female	Male	Female	Male	Female
Completed Grade 5						
Completed Grade 6						
Completed Grade 7						
Completed Grade 8						
Total drop-outs who fail to accomplish Grade 8						

1.2 Potential demand for skills from the working children

Working children in Bangladesh are of major concern as they account for almost 10% of the national workforce and have no access to quality skills development programmes. The recent data on the engagement of children in the economy is presented in the **Table D04**.

Table D04: Key data on the child labour, 1999-2000

SL. No.	Characteristics	1999-2000		
		Total	Male	Female
1.	Child labour force as % of total LFS	11.2	10.7	12.0
2.	Wage employed child labour as % of total child labour (10-14 years)			
	Number (000)	1185	654	531
	Percent (%)	17.5	16.2	19.3
3.	Child workers by major occupation (%) Total	100.0	100.0	100.0
	Technical, administrative and managerial services	0.6	0.5	0.6
	Production and transport labours	15.4	15.3	15.8
	Clerical workers	0.5	0.7	0.1
	Sales workers	9.9	15.6	1.4
	Service workers	9.6	5.8	15.1
	Agri. forestry and fisheries	64.0	62.1	67.0
	Not adequately defined (NAD)	-	-	-
4.	Child workers by major industry (%) Total	100.0	100.0	100.0
	Agriculture	64.2	62.2	67.1
	Manufacturing	8.2	7.2	9.8
	Transport/communication	2.6	4.2	0.2
	Other services	14.4	21.5	3.9
	Other activities including household services	-	-	-
5.	Employment status of child workers (%) Total	100.0	100.0	100.0
	Employees	18.8	17.4	20.9
	Self-employed	9.3	11.4	6.1
	Unpaid family workers	60.3	55.1	68.1
	Day labour/casual labourers	11.6	16.1	4.9

Source: BBS

1.3 Data on the student demand for formal TVET programmes

As the graduates from Grades 8-11 are entitled to enroll in the formal TVET programmes, their numbers need to be assessed annually. Those data which is currently unavailable, should be collected in the future as proposed in the **Table D05**.

Table D05: Annual school graduations from Grades 8-11 (by location and gender)

Grades	Urban		Rural		Total	
	Male	Female	Male	Female	Male	Female
Grade 8: Completed middle secondary						
Grade 9						
Grade 10						
Grade 11						
Total						

Table D06 will present data which is not currently available on the numbers of graduates applying for TVET courses with different levels of general education. Current data only details the numbers of students enrolled in TVET programmes and does not reflect the demand for TVET.

Table D06: Annual school applications from Grades 8-11 graduates for formal TVET programmes (by location and gender)⁴

Grades of applicants	Urban areas		Rural areas		Total	
	Male	Female	Male	Female	Male	Female
Grade 8: Completed middle secondary						
Grade 9						
Grade 10						
Grade 11: Completed secondary						
Total						

Table D07 is proposed to collect data on applications per *type of TVET programmes* (or *per individual TVET programme*). This data is not currently available. This data would allow estimations of the numbers of eligible students who were unable to enroll because of the limited capacity of TVET providers. The real demand –supply equations can only be estimated through the *applicant-to training place ratios* which can be part of the proposed table.

For instance, TVET institutions in Dhaka and Chittagong receive many more applications for admission. Depending on trades the ratio of applicants to the seating capacity varies from 3 to 3-4:1. In some trades this ratio is lower. Bangladesh Institute of Marine Technology receives applications to seating capacity with the ratio of 10-15:1 depending on trades. This is because of high job opportunities in these trades particularly in overseas markets. Some joint-venture training institutions established in collaboration with foreign employers also see applicant-to training place ratios of 3-4:1.

The institutions at the district level may also have more applicants than seating capacity. The evening courses and short courses attract more students in Dhaka and Chittagong, but in other districts there are fewer applicants than seating capacity as these courses charge fees.

Table D07: Annual numbers of applicants for formal full-time TVET programmes (per type of programme, and gender)

⁴ It was calculated that around 30% of the students accomplishing Grade 8 may be looking for admission in the formal TVET system.

N	Title of the programme	Duration (months)	Seating capacity	Applicants		Applicant-to- training -place ratio
				Women	Total	
1	Polytechnics (public)					
	<i>Per TVET programme</i>					
	Total for polytechnics public					
2	Polytechnics (private)					
	<i>Per programme</i>					
	Total for polytechnics private					
3	Technical colleges					
	Total for technical colleges					
4	Commercial colleges					
	Total for commercial colleges					
5	Technical Training Centres (TTCs) (Govt.)					
	Total for TTCs					
6						
7	Specialist TVET institutions of the line ministries					

1.4 Data on the economy's demand for skilled labour force

The assessment of the demand for skilled workforce in the economy requires data on the nature and size of the economy, sectoral distribution of employment, share of skilled workers in the different industries, etc.

Table D08 presents available data on the numbers of private and public establishments in Bangladesh.

1.4.1 Number of establishments

Table D08: Number of industrial units from 1988-1989 to 2001-2002⁵

Period	Total	Growth rate
1988-89	23,752	
1989-90	25,283	6.45%
1990-91	25,890	2.40%
1991-92	26,446	2.15%
1992-93	26,677	0.87%
1993-94	27,247	2.14%
1995-96	28,920	6.14%
1997-98	29,573	2.26%
1999-2000	24,452	-16.30%
2001-2002	28,065	13.38%

Source : CMI, BBS (the data is available up to 2002)

1.4.2 Data on the structure of the labour force by gender and location

The labour force in the country amounts to 60.3 million of which 62% are male and 38 % are female. About 58.1 million (96.3%) of the labour force i.e. are engaged in income generating activities; while 2.2 million (3.7%) are unemployed. The data presented in the **Table D09** describe the structure of the labour force by residence and gender.

Table D09: Labour force by gender and residence

	Labour Force Surveys (Millions)		
	1999-2000	2002-03	2005-06
Total labour force	40.7	46.3	49.5
Male	32.2	36.0	37.3
Female	8.5	10.3	12.1
Total urban labour force	9.2	11.3	11.7
Male	7.1	8.6	8.9
Female	2.1	2.7	2.8
Total rural labour force	31.5	35.0	37.8
Male	25.1	27.4	28.4
Female	6.4	7.6	9.3
Total youth in labour force (aged 15-29)	14.5	19.0	17.3
Male	10.4	13.5	13.0
Female	4.1	5.5	4.3

Source: BBS, 2005

Data in the **Table D10** describe the structure of the labour force by age and gender.

⁵ The growth rate of the public sector establishments is currently negative

Table D10: Labour force by age group and gender

Age Group	Labour Force Surveys					
	1999-00		2002-03		2005-06	
	Male	Female	Male	Female	Male	Female
Bangladesh						
15-64	85.7	24.5	89.2	27.3	89.2	30.2
65 and over	56.6	9.0	66.1	8.7	59.25	14.83
All ages	84.0	23.9	87.4	26.3	86.8	29
Urban						
15-64	85.8	27.3	86.5	28.4	85.0	28.1
65 and over	36.2	6.5	65.5	9.6	44.6	44.6
All ages	83.7	26.5	85.1	27.4	83.2	27.4
Rural						
15-64	85.7	23.7	90.1	26.9	90.6	30.9
65 and over	60.3	9.5	66.3	8.5	55.9	14.1
All ages	84.0	23.1	88.7	25.7	88.0	29.8

Source: LFS

Interpretation of the above data: The national labour force increases annually by roughly 2.0 mln. people most of whom are youth. Although around 3.5 mln youth are entering the legal working age (15 years) only 2.0 mln of them join the labour force as large groups of youth remain in general education and other streams of learning such as informal apprenticeships.⁶

The shares of the urban and rural labour force and the male and female labour force require that the TVET supply structure be adjusted accordingly.

Source: BBS; LFS; Census is conducted every 10 years; Last Census was conducted in 2001.

Table D11 indicates that a very large share of the labour force in Bangladesh is under-employed. It is apparent that large numbers of the educated and skilled persons may also be under-employed. However no specific data is available on under-employment by educational and vocational qualification.

⁶ About 12.80% of the total population is within the age group of 10-14 and 18.47% are within 14-24 years. From this data it may be calculated that the number of youth reaching the age of the labour market entry each year is about $12.80 \div 5 = 2.560\%$ of the total population. The population is estimated in 2005 is about 138.6 m. Therefore, the number of youth reaching the age of labour market entry each year is about $138.6 \times 2.56/100 = 3.55$ million.

Table D11: Underemployment Rates by Residence and Gender⁷

Category	Bangladesh			Urban			Rural		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
Employed persons, '000	44,322	34,478	9,844	10,723	8,219	2,505	33,590	26,260	7,339
Underemployed persons, ' (Less than 35 hours per week), '000	15,079	7,959	7,121	2,860	1,312	1,547	12,217	6,647	5,570
Underemployment %	34.0	23.1	72.3	26.7	16.0	71.8	36.4	25.3	75.9

Source: *Labor Force Survey 2002-03*

1.4 Data on sectoral distribution of employment in the economy

Table D12 presents broad distribution of the labour force. It is seen that the number of paid/unpaid apprentices acquiring skills on- the- job is perhaps significantly under-estimated by the official statistics. The ILO recent study covering a large number of industry subsectors has found that the number of apprentices in industry is between some 7.5% in ceramics and transport equipment up to 16% in textiles and pharmaceuticals and exceeds 32% in the leather goods sector.⁸

Table D12: Labour force (15 years and over) by employment status

Status in employment	Bangladesh	Urban	Rural
All employed persons	100	100	100
Regular paid employee	13.87	31.2	8.48
Employed	0.27	0.28	0.27
Self employed	41.9	41.63	42.99
Unpaid family worker	21.68	9.52	25.46
Irregular paid worker	1.99	2.34	1.88
Day labour (agriculture)	10.71	2.21	13.35
Day labour (non-agric.)	7.48	10.07	6.68
Domestic worker	0.7	0.93	0.63
Paid/unpaid apprentice	0.51	0.69	0.45
Others	0.88	1.13	0.8

Source: *LFS, 2005-2006 Provisional data, BBS*

Some data available on the structure of employment by the economic sector is presented in the **Table D13**.

Table D13: Percent of employed (persons 15 years) and over by broad industry

⁷ The underemployed refer to those employed persons who work less than 35 hours per week. The overall rate of underemployment is about 34% with lower rate in the urban areas of 27% compared to 36% in the rural areas. This causes a major underutilization of human resources potential particularly the women.

⁸ R. Rahman, A Mondal, R.Islam, op.cit.

Area and Sector	LFS 2002-03			LFS 2005-06		
	Bangladesh	Urban	Rural	Bangladesh	Urban	Rural
All Industries	100	100	100	100	100	100
Agriculture, Forestry and Fishery	50.8	26.9	59.7	48.07	15.25	58.28
Mining and quarrying	0.2	0.1	0.2	0.11	0.1	0.11
Manufacturing	9.8	14.2	8.4	11.3	19.34	8.54
Electricity, Water & gas	0.2	0.5	0.1	0.16	0.32	0.11
Construction	3.5	5.2	2.9	3.22	4.62	2.78
Trade, Hotels & Restaurants	15.1	22.8	12.5	8.4	11.63	7.39
Transport & communication	6.8	9.3	6.0	1.07	2.86	0.51
Finance & Business	0.5	1.4	0.2	0.5	1.19	0.29
Real Estate, Rent, Business Activities	0.4	1.0	0.3			
Public Administration	2.2	4.9	1.4	1.86	3.83	1.25
Education	2.7	4.1	2.2	2.76	4.51	2.21
Health and Social Work	1.1	2.0	0.9	0.76	1.75	0.49
Community, Personal service & others	5.8	7.7	5.1	5.54	9.54	4.29

Source: LFS

1.4.3 Data on the labour force by occupational groups and large economic sectors

Data on the occupational groups in the economic sectors are summarized in the **Table D14** and **Table D15**.

Note however that the major occupations as shown here are inadequately detailed to thoroughly inform TVET planning. Whilst such classifications exist within BSIC, in the LFS they are not cross referenced to the detailed industry categories found in the ISCO.

Table D14: Employed Persons by Broad Sector and Occupational Group

	Informal	Individual,	Private	Government	Total	Total	
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Major Occupation	economy	Private Formal economy	Formal Sector	Sector	(%)	numbers (Million)	% Female
Professional, Technical	1.3	3.1	24.6	25.7	3.9	1,723	23.4
Administrative, Managerial	0.0	0.3	1.2	1.7	0.2	0.096	3.1
Clerical Workers	0.7	3.1	14.6	39.4	3.5	1,621	11.5
Sales Workers	14.0	29.5	7.2	2.2	14.8	6,547	4.4
Services workers	3.8	4.4	4.0	18.3	4.4	1,979	48.0
Agriculture, Forestry, and Fisheries workers	61.6	17.4	11.5	2.3	51.3	22,764	25.4
Production, Transport & others	18.6	42.2	36.9	10.4	21.9	9,693	23.1
Total (%)	100.0	100.0	100.0	100.0	100.0	44,332	22.2
Total number (Million)	35,078	4,688	2,680	1,877	44,332	-	-
Total (%)	79.1	10.6	6.1	4.2	100.0	-	-
% Female	22.3	20.4	28.7	13.9	22.2	-	-

Source: Labor Force Survey 2002-03

Table D15: Employed Persons (15 years and over) by Broad Occupational Group and Residence

Occupational Group	LFS 2002-03			LFS 2005-06		
	Bangladesh	Urban	Rural	Bangladesh	Urban	Rural
Total	100	100	100	100	100	100
Professional and Technical	3.9	6.4	3.1	4.71	9.49	3.23
Administrative Managerial	0.2	0.6	0.1	0.47	1.09	0.28
Clerical	3.4	7.2	2.2	2.14	5.05	1.24
Sales	14.8	22.4	12.4	14.17	21.23	11.98
Services	4.5	6.7	3.7	5.82	10.5	4.37
Agriculture	51.4	26.6	59.2	48.41	15.53	58.62
Forestry, Fishery, Production and Transportation	21.9	30.0	19.3	24.27	37.11	20.28

Table D16 shows the total number of employees in the manufacturing industries, the split between management + workers, and the share of unskilled workers.

Table D16: Share of unskilled workers in the labor force (major industries)

Periods	Number of establishments	All employees	Operational staff ⁹	Share of unskilled workers
1990-91	25,890	1,110,582	941,869	14%
1991-92	26,446	1,156,204	984,792	14.82%
1992-93	26,677	1,248,708	1,069,002	14.39%
1993-94	27,247	1,203,018	1,040,804	13.48%
1995-96	28,920	1,714,039	1,486,875	13.25%
1997-98	29,573	2,104,247	1,838,667	12.62%
1999-2000	24,752	2,259,717	2,005,038	11.27%
2001-2002	28,065	2,465,397	2,142,401	13.10%

Source: BBS

1.4.4 Data on the employment and qualification structures by economic sub-sector and subsectors

Planning of the TVET delivery requires, however, data on the qualification structures of the economy. Such data based on broad educational and qualification groups is given in **Table D17**. However the type of data which would be more useful for the TVET data system is proposed in **Table D18**.

Whilst the current LFS collects data on the labour force by level of education, it provides inadequate detail on the nature of technical/vocational qualifications to inform adequate TVET sector planning.

Table D17: Employed Labor Force by Educational Level

⁹ Non Managers

Ref	Major Industry	Total (‘000)	Educational Level, %						
			No Education	Class I-V	Class VI-VIII	Class IX-X	SSC/HSC and Equivalent	Degree and above	Others
A	Agriculture	22,931	59.2	16.8	9.8	7.6	5.3	1.1	0.2
	Agri Forestry and Related	21,887	58.7	16.9	10.0	7.7	5.4	1.1	0.2
	Fishing	1,044	69.1	14.2	6.5	5.2	3.9	0.9	0.3
B	Industry	6,062	47.4	20.7	12.9	7.7	7.0	3.9	0.4
	Mining and Quarrying	80	50.0	16.3	12.5	6.3	10.0	3.8	1.3
	Manufacturing	4,343	47.3	19.9	14.0	8.2	7.0	3.3	0.4
	Electricity, Gas and Water	98	6.1	10.2	8.2	9.2	21.4	43.9	1.0
	Construction	1,541	50.3	23.7	10.5	6.6	6.0	2.7	0.3
C	Services	15,329	39.0	15.9	11.5	10.2	14.3	8.7	0.4
	Wholesale and Retail Trade	6,108	37.0	19.4	14.3	13.0	12.7	3.3	0.3
	Hotel and Restaurant	563	45.6	22.7	15.3	9.1	5.9	1.4	0.0
	Transport, Storage, Communication	3,015	64.5	17.1	7.8	4.4	4.6	1.4	0.2
	Bank, Insurance and Finance	223	2.7	4.5	4.9	7.6	28.3	51.6	0.4
	Real Estate, Rent, Business Activity	194	18.0	5.7	10.3	13.4	26.3	25.3	1.0
	Public Administration	988	7.8	7.2	10.6	15.7	35.3	22.0	1.4
	Education Services	1,185	3.6	3.8	4.4	7.1	34.3	46.0	0.8
	Health and Social Workers	504	11.3	6.0	7.9	14.5	36.1	23.2	1.0
	Community, Personal, HH Services	2,549	51.1	17.5	13.3	9.0	7.7	1.3	0.1
	Total	44,322	50.6	17.0	10.8	8.5	8.7	4.1	0.3

Source: *Labor Force Survey 2002-03*

Table D18: Employment and qualification structures by the economic sector and sub-sector

N	Sub-sectors ¹⁰	Employment (thousands)	Qualification structures ¹¹				
			Managers and professionals	Technicians	Clerks	High-skilled and skilled workers	Semi-skilled workers
	Manufacturing Industries						
	Wearing apparel						
	Drugs & pharmaceutical						
	Mfg. of textile						
	Food manufacturing						
	Tobacco manufacturing						
	Other chemical production						
	Pottery & China-wear						
	Furniture & fixtures						
	Ginning & processing						
	Printing & publishing						
	Non-metal mineral						
	Leather footwear						
	Transport equipment						
	Electrical machinery						
	Industrial chemicals						
	Iron & steel basic industry						
	Leather & leather products						
	Beverage industries						
	Paper & paper products						
	Fabricated metal products						
	Plastic products						
	OTHER INDUSTRIES						
	Construction						
	Communication						

¹⁰ The sub-sectors should be named according to BSIC..

¹¹ Note that these qualification, titles should be aligned with the TVQF currently underdevelopment for Bangladesh.

	Transport, etc.						
	Services						
	Education						
	Health, etc.						
	Financial services, Banking, and Insurance, etc.						

1.4.5 Data on the structure of the technician, high-skilled and skilled worker occupations by industry sub-sector

The existing occupations in industry sectors/sub-sectors at the technician, high-skilled and skilled worker levels along with the job titles should be identified, enabling adjustment of TVET supply to such structures to a large extent this is in place through ISCO. However, it is apparent that many positions could be occupied by employees with high educational and training qualifications which may not be a requirement for their jobs.

For this reason, collecting data on the industry occupational requirements is a more accurate technique than only collecting data on the actual numbers of diploma and certificate holders employed in the economy.

The data on the occupational structures aligned with polytechnic diploma level and skilled worker levels need to be collected as suggested in **Table D19** and **Table D20**. This data would be able to indicate a true demand for the educated and skilled workforce in the different industries and at different qualification levels.

This data would also allow an assessment of whether the current supply of TVET per trade and type of TVET award corresponds to the structures of such jobs available in the economy.

Table D19: Polytechnic diploma-level occupations in the sectors and sub- sectors of the economy

N	Sector/ Sub-sector	Titles of polytechnic Diploma-level occupations	Numbers of employed persons	Currently filled by staff without a Diploma
	MANUFACTURING INDUSTRIES			
	Wearing apparel	Apparel designer Shift manager Maintenance technician/garments Accountant	100 400 300 300	
	Drugs & pharmaceutical			
	Textiles industry	Maintenance technician		
	Food manufacturing			
	Tobacco manufacturing			
	Other chemical production			
	Pottery & China-wear			
	Furniture & fixtures			
	Ginning & processing			
	Printing & publishing			
	Non-metal mineral			
	Leather footwear			
	Transport equipment			
	Electrical machinery			
	Industrial chemicals			
	Iron & steel basic industry			
	Leather & leather products			
	Beverage industries			
	Paper & paper products			
	Fabricated metal products			
	Plastic products			
	OTHER INDUSTRIES			
	Construction			
	Communication			
	Transport , etc.			
	SERVICES			
	Education			
	Health, etc.			
	Finance, Banking, and Insurance			

Table D20: High-skilled and skilled-worker occupations in the sectors and sub- sectors of the economy

N	Sub-sector	Titles of high-skilled and skilled occupations	Numbers of jobs	Minimum training/qualification requirements
	INDUSTRIES			
	Wearing apparel	Sewing machine operator	5,000	12 months on the job training
		Cloth cutter	1,000	
	Drugs & pharmaceutical	Fitter	500	NSS2/Fitter or 2 years of on the job training
	Mfg. of textile	Loom Maintenance	500	
		Weaver	10,000	
		Quality controller		
	Food manufacturing	Operator		
	Tobacco manufacturing			
	Other chemical production			
	Pottery & China-wear			
	Furniture & fixtures			
	Ginning & processing			
	Printing & publishing			
	Non-metal mineral			
	Leather footwear			
	Transport equipment			
	Electrical machinery			
	Industrial chemicals			
	Iron & steel basic industry			
	Leather & leather products			
	Beverage industries			
	etc			
	OTHER INDUSTRIES			
	Construction			
	Communication			
	Transport			
	SERVICES			
	Education			
	Health, etc.			
	Finance, Banking, and Insurance			

1.4.7 Assessment of demand for skilled workers by industry sectors

Future demand for skilled workers in industry can be gauged from different existing data sets such as:

- FDI inflows by economic sector; and
- Employment and productivity growth in industry sub sectors.

However from these data sets inferences can be drawn about which occupations and skills are in demand.

More detailed data is required from industry on skills in demand as a result of:

- industry restructuring;
- the introduction of new technology¹²
- regulatory and/or compliance requirements; and
- other management/production demands.

This data is best collected directly from industry. Section 1.4.7.1 below shows demand for skilled vacancies in the ship building sub-sector.

1.4.7.1 Assessment of demand for skilled workforce by industry sectors (example of shipbuilding industry)

More than 100 local shipyards, dockyard and shipways have emerged in Bangladesh; they are involved in producing medium-sized ships and vessels for inland water-ways. In the overseas employment market, thousands of Bangladeshis are now being employed in Singapore, Korea and Dubai shipyards.

A strong demand for skills is being created in the field of shipbuilding technology. These trades primarily relate to: Ship Building and Repairing, Ship Conversion, Marine Engine Operation, Engine Repair and Maintenance.

The following training programmes are in strong demand in this sector: Marine fitter, Pipe fitter, 6G welding, Scaffolding in Ship Building, Marine Engine Maintenance, Drafting with ship building AutoCAD, and a Ship Fabricator.

The demand for trained personnel in the shipbuilding sector has been assessed by the industry (see **Table D21**). There is also a considerable demand for retraining programmes and skills recognition.

Some training centers like Bangladesh Industrial and Technical Assistance Center (BITAC) and Bangladesh Oxygen Company (BOC) provide upgrading courses in some specialist trades. Some industries have their in-house training arrangement for upgrading of skill.

Table D21: Demand for workforce in the shipbuilding sector, 2007

SL.	Job title	Vacancies
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¹² Employees need to upgrade their skills and knowledge through re-training which may cause them to change jobs. Some occupations have been recently modernized due to the technological change, e.g. Photography, Printing, Design, Drafting, etc. Sectors like ICT, garments, etc. have been upgrading their technologies vary rapidly.

SL.	Job title	Vacancies
1.	Marine Engineer	96
2.	Master Mariner	48
3.	Naval Architect	144
4.	Electrical Engineer	24
5.	Mechanical Engineer	24
6.	Draftsman	84
7.	Foreman	288
8.	Platter	1800
9.	Certified Welder	600
10.	Ship's plan Reader	48
11.	Lofter	36
12.	Electrician	180
13.	Safety Trained Personnel	540
14.	Quality Control Engineer	72
15.	Shipwright	120
16.	Marine Mechanic	144
17.	Pipe Fitter	120
18.	Crane Operator	72
19.	Machine Operator	216
20.	Painter	600

(Source: Western Marine Shipyards Ltd.)

2. Data on the demand for educated and skilled workforce caused by capital inflows and growth/decline in production and productivity

The industries experiencing in-flows of high capital investments will also most likely demand more and higher educated and skilled employees. Some data on the FDI inflows by industry-sector presented in **Table D22** (see also Annex 1).

Table D22: FDI Inflow by economic sectors (US\$Million)

FDI Sectors	2005	2006
Agriculture & Fishing	1.7	1.3
Power, Gas & Petroleum	208.3	208.2
Power	27.2	21.2
Gas & Petroleum	181.1	187.2
Manufacturing	219.3	104.9
Textile & Wearing	96.5	70.1
Cement	45.3	2.6
Trade & Commerce	130.5	130.2
Banking	117.8	117.7
Transport Storage & Comm.	279.9	347.0
Telecommunication	278.8	346.5
Other Services	3.0	0.2
Total	845.3	792.5

Source: Bangladesh Bank Enterprise Survey, 2007

Employment growth and productivity growth in industry sectors can be gleaned from the data **Table D23**. The industries with high employment growth and high productivity growth (expressed as “gross value addition (GVA)”) are likely to require more and higher skilled workforce.

Table D23: Employment and Productivity Growth in Industry Sub-sectors

	Sub-sector	Growth Rate of GVA: 1991-2002 (24 July, 2008)	Employment growth		
			1996-02	1991-96	1991-2002
	Wearing apparel exc	18.31	11.21	28.01	18.56
	Drugs & pharmaceutical	23.43	27.73	6.76	17.73
	Mfg. of textile	7.21	-0.52	-2.07	-1.22
	Food manufacturing	8.23	3.32	3.40	3.35
	Tobacco manufacturing	2.79	-4.84	-13.37	-8.82
	Other chemical production	14.21	2.75	0.77	1.84
	Pottery & China-wear	30.00	54.91	8.25	31.62
	Furniture & fixtures	45.62	33.05	11.16	22.61
	Ginning & processing	25.68	-9.69	-11.72	-10.62
	Printing & publishing	20.09	18.75	21.24	19.87
	Non-metallic mineral	16.05	-27.70	17.23	-9.94
	Leather footwear	14.64	-26.41	73.85	8.77
	Transport equipment	5.08	-12.28	19.07	.79
	Electrical machinery	4.62	-13.55	15.22	-1.49
	Industrial chemicals	-4.91	2.57	-3.80	-.37
	Iron & steel basic industry	2.32	-6.62	2.20	-2.71
	Leather & leather products	5.28	7.01	3.35	5.33
	Beverage industry	19.34	8.53	30.05	17.83
	Paper & paper products	-3.22	-0.66	-8.17	-4.14
	Fabricated metal products	-1.05	-5.70	+3.35	-1.69
	Plastic products	10.42	8.70	7.09	7.96

Source: Mapping and Analysis of Growth-Oriented Industrial Sub-Sectors and their Skill Requirements in Bangladesh. BIDS, ILO, Dhaka. Draft report 2008

3. Data on the replacement demand caused by labour force turnover

Demand for the skilled labour force is also caused by death, sickness, retirement and the labour turnover between industries and occupations. Currently such data is not collected in the country¹³. The data which need to be collected on the annual replacement needs for the technicians and skilled workers are suggested in **Table D24**.

Table D24: Annual replacement needs for technicians and skilled workers¹⁴

N	Sub-sector	Technician and skilled worker qualifications	Numbers per qualification employed	Average exits each year	Replacement need (%)
	Wearing apparel	Shift manager	200	20	10%
		Apparel designer	1000	50	5%
		Cloth cutter	5000	500	10%
	Drugs & pharmaceutical	Fitter	500		
	Mfg. of textile	Maintenance technician/ looms	500		
		Weaver	10,000		
		Cutter			
		Quality controller			
	Food manufacturing				
	Tobacco manufacturing				
	Other chemical production				
	Pottery & China-wear				
	Furniture & fixtures				
	Ginning & processing				
	Printing & publishing				
	Non-metal mineral				
	Leather footwear				
	etc				
	SERVICES				
	Education				
	Health, etc.				
	Financial services, Banking, and Insurance				
	etc				

¹³ During interviews with associations of companies and trade bodies, it was said that the demand for replacement because of sickness, etc. was approx. 0.5 to 1% in the old companies and below 0.5% in the new companies. Worker turnover (highest in the garments, textiles, IT and other manufacturing industries accounted for some 5-6% depending on the occupation and type of industries. As the number of employees in the garment sector is about 1.5 million, the estimated turnover may account for (1.5mln. × 5%) 75,000-90,000 annually.

¹⁴ Replacement demand is caused by employees resigning, changing trades, retiring, mortality, migration, etc.

From the preceding tables in set 1.4 – 2 it can be seen that inadequate data is currently available at the demand for skills from employers in Bangladesh. Ongoing consultations with industry will be necessary to finalise the data tables required.

4. Demand for skilled workforce from overseas markets¹⁵

The number for the overseas employment has increased from 1,49,433 in 2006 to 3,49,098 in 2007. Between 1976 and 2007, about 48% of the workforce leaving for the overseas market were unskilled. Semi-skilled workers accounted for 15%, the skilled workers constituted 33% and professionals - 4%. (For a detailed assessment see Annex 2). The occupational structure in the overseas employment of Bangladeshi workers is shown in the **Table D25**:

Table D25: Skilled and semi-skilled migrants

Year	Skilled	Semi Skilled
2000	99,606	26,461
2001	42,742	30,702
2002	56,265	36,025
2003	74,530	29,236
2004	1,10,177	28,327
2005	1,13,655	24,546
2006	1,15,468	33,965
2007	1,65,344	1,83,754

Source: *BMET*

The available data on the demand in the overseas markets trade-wise is summarized in the **Table D26**. However, the data in **Table D26** does not indicate the qualification levels of the occupations which are in demand overseas. Once the TVQF is finalized in Bangladesh it will be possible to quantify demand in terms of qualification type. In the short term however, it is proposed to collect data according to the format suggested in the **Table D27**.

Table D26: Numbers of migrants employed per trade (June 2004 - December 2007)

SL.	Job category	Total	SL.	Job category	total
01.	Driver	56,177	19.	Shepherd	3,323
02.	Production Operator	41,545	20.	Tiles Fixer	3,294
03.	Factory Worker	36,452	21.	Fitter	3,281
04.	Mason	21,643	22.	Gardener	3,279
05.	Carpenter	18,887	23.	Barber	3,161
06.	Operator	18,614	14.	Cleaner	2,976
07.	Electrician/ Electrical Technician	14,311	25.	Pipe Fitter	2,674
08.	Machine Operator	12,669	26.	Heavy vehicle driver	2,500
09.	Helper	12,053	27.	Kitchen Worker	2,105
10.	Tailor	11,742	28.	Rod binder	2,021
11.	Welder/Fabricator	10,898	29.	Restaurant worker	1,732

¹⁵ Remittances from the overseas employment contribute 10% of GDP. In 2007, the total amount of remittances reached US \$ 6.57 billion. Per capita, remittances from skilled and semi-skilled workers were about 3- 5 times higher than that from the unskilled workers.

12.	Printer	10,884	30.	Machinist	1,625
13.	Steel Fixer	8,043	31.	Guide	1,494
14.	Plumber	6,456	32.	Architect	1,332
15.	Production Worker	6,190	33.	Workshop employee	1,279
16.	Technician	4,842	34.	Laundry employee	1,128
17.	Plasterer	3,823	35.	Shuttering Carpenter	1,081
18.	Mechanic	3,395	36.	Embroiderer	1,049

Source: BMET

Table D27: Occupational and qualification structures of people going overseas

	Occupational group of migrants	Holders of TVET awards (Degree/Diploma/National Certificate, License, etc.)	Migrants without awards (years of experience)
1	Professional jobs		
	Doctors Engineers Architects University/college teachers Accountants Computer Programmers (Etc.)		
2	Technician jobs		
	Paramedics Nurses Foremen Duct Technician (Etc.)		
3	Skilled worker jobs		
	Mechanics Welders Masons, Carpenters Tailors Gas operator Sales personnel, etc. Gardeners Clerks (Etc)		
4	Semi-skilled workers		
	Cleaners House keepers General workers Laborers (Etc)		
5	Unskilled workers		

CHAPTER II: DATA ON THE SUPPLY SIDE IN TVET

1. Structure of TVET providers and their training capacity¹⁶

1.1 Data on the providers of formal TVET

Directorate of Technical Education (DTE), Ministry of Education supervises 113 institutions at different levels with the annual enrolment capacity of 41,540 as indicated in the **Table SO1**. The courses and qualifications indicated below are based on the current Vocational Qualification Framework for Bangladesh (for details, see **Annex 4**: Current vocational qualification framework in Bangladesh).

Table SO1: TVET delivery supervised by the DTE

		Total number	Courses	Annual intake capacity
1	Technical Schools and Colleges (TSC) ¹⁷	64	2-year SSC (Voc) with entry qualification of Class VIII 2 -year HSC (Voc) after the completion of SSC (Voc)	8,370 with the same seating capacity in the 2 nd shift 8,370
2	Polytechnic Institutes Monotechnic Institutes	42 5	4-year Diploma programs	19,057 including a 2 nd shift
3	Technical Teacher Training Center (TTTC) in Dhaka	1	Instructor training programs mostly for polytechnics	240
4	Vocational Teacher Training Institute (VTTI)	1	Teacher training for TSCs	N/A

Skills training at the Certificate levels are delivered by the 37 *Technical Training Centres* (TTCs). Presently 26 TTCs are under the *Ministry of Labour and Employment* with the intake capacity of 26,000. While the *Ministry of Expatriates' Welfare and Overseas Employment* supervises the Institute of Marine Technology (BIMT) at Narayangonj and 11 Technical Training Centers (TTCs).

¹⁶ The structure of TVET in Bangladesh is presented in Annex 3

¹⁷ *Technical School and Colleges (TSC)* provide SSC (Vocational) and HSC (Vocational) courses. The courses include: general electrical, refrigeration and air conditioning, automotive, turner, general mechanic, machine tool operator, audio-VDO operator, welding, farm machinery, dress making and tailoring. Graduates from TSCs can get admission into higher studies or can be engaged in employment. Employability of the TSC graduates is average.

All the 37 TTC are operationally supervised by the *Bureau of Manpower, Employment and Training (BMET)*. Six TTCs are reserved exclusively for women.

TTCs offer a 2-year course (SSC voc.) in 31 different basic engineering trades; while the BIMT offers 4-year Diploma courses. Besides regular courses, many evening skills upgrading courses, on request of employers, are also conducted at TTCs. A total annual intake at the TTCs (both regular & short-term courses) amounts to 39,000 students (for details, see **Table S03 and Table S07**).

Training programmes supervised by BMET involve: Diploma in Marine Engineering, Diploma in Shipbuilding Engineering, Drafting Mechanical, Drafting Civil, General Mechanics, Machine tool operation, Machinist, Welding and Fabrication, Automotive, Electrical, Wood working, Civil Construction, Refrigeration & Air conditioning, Electronics Plumbing & Pipe Fitting, Garments, Marine Diesel Artificer, Ship Building & Welding (arc & gas), Ship building & Mechanical Drafting, Shipwright /Platter, Computer, Architectural Drafting with AutoCAD, Electrical Machine Maintenance, House Keeping, Plastic Technology, Pattern making and cutting, 6G welding, Auto CAD (3D), Graphics Design, Suttering, Block and Boutique, Rod Binding, Tile Fixer, Knitting and Linking operator, Mechanical Fitter, Sewing Machine Maintenance, Mid-level Supervisor (garments)

Need for the gender-related data

Most of the tables lack gender dimensions which are very important in the provision of equal access to skills and education for girls. Enrolement of girls is about 35% in SSC (Voc) courses. BMET is planning to establish 6 TTCs exclusively for female trainees. DTE has also decided to established 6 TSCs for girls¹⁸.

The structure of the national *public TVET* provision is presented in the **Table S02**.

Table S02: Public training institutions

Institutions	Numbers
1. Polytechnics	48
2. Technical School and College	64
3. Technical Training Centers(TTC)	37
4. Youth Development Centers	42
5. Horticulture Training Centers	1
6. Agricultural Training Institutes	12
7. BRDB Training Centers	38
8. Textile Vocational Institutes	40
9. District Textile Institutes	6
9. BSCIC Training Center	3
10. Institute of Marine Technology	1

Source: BTEB

¹⁸ There is a provision of stipend for female TVET students which helped to increase enrollment of girls.

The total TVET supply structure and enrolments in 2005 are shown in the **Table S03**.

Table S03: TVET providers by category, location and enrolments (data of 2005)

Type of Institution	No. of Instt.	Location		Enrolment	
		Urban	Rural	Total	Female
Polytechnics (Govt.)	48	42	6	17130	2272
Polytechnics (Non-Govt.)	128	1208		7269	472
Technical School and Colleges (Govt.)	64	55	9	12524	1224
Commercial Colleges (Govt.)	7	7		506	790
Glass & Ceramic Institute (Govt.)	1	1		257	12
Graphic Arts Institute (Govt.)	1	1		185	20
Survey Institutes (Govt.)	2	2		176	11
Technical Training Centres (TTCs) (Govt.)	37	35	2	26000	1473
Textile Institutes (Non Govt.)	29	26	3	2500	118
Textile Vocational Centres (Govt.)	40	N/A	N/A	810	232
Agricultural Training Institutes (Govt.)	12	N/A	N/A		
Agricultural Training Institutes (Non-Govt.)	100	N/A	N/A	28140	5880
Schools offer SSC (Voc) (Non-govt.)	1597	N/A	N/A	58878	19531
Colleges offer HSC (B. Management) (N-Govt.)	1327	N/A	N/A	65044	22712

Source: BTEB

A detailed structure of the technical education institutions delivering programs through centers, colleges and polytechnics is shown in the **Table S04**.

Table S04: Institutions offering technical education programs (public and private)

Type of Institutions	2003		2005	
	Institutions	Enrolments	Institutions	Enrolments
Medical colleges	25	15874	42	18685
Dental colleges	5	818	9	1140
Engineering colleges	-	-	-	-
Polytechnics	76	20593	134	27518
Law colleges	59	17426	70	177787
Agricultural colleges	-	-	59	14388
Institute of Fine Arts	1	684	-	-
Home Economics	1	4826	-	-
Institute of Social welfare & Research	1	724	-	-
Physical Education college	14	2069	27	3402

Source: BBS

A large number of specialist TVET institutions has emerged focusing on the education and training for *specific economic sectors and sub-sectors* (see **Table S05**).

Table S05: Specialist TVET providers focusing on economic sectors

Sector	Total	Seat	2001	2002	2003	2004	2005
Technical	152	13,967	8,098	8,439	8,679	10,672	10,373
Printing & publication	66	1,828	1,949	2,098	2,080	2,643	2,898
Marine	4	295	225	241	241	250	269
Catering & food processing	14	1,599	1,236	1,291	1,518	1,650	1,969
Garments (RMG) /textile	44	2,312	1,027	1,157	1,119	1,191	851
Other manufacturing industry	3	310	40	40	59	85	84
IT	409	27,307	17,798	19,726	21,843	25,192	26,693
Agriculture	35	2,108	1,077	1,083	1,119	1,160	1,190
Hotel management & tourism	9	800	560	582	627	668	657
Others	42	1,979	1,323	1,299	1,405	1,460	1,589

Source: Field Survey on Mapping of Human Resources⁸

1.2 Data on the formal public and private TVET programmes

The types of major formal TVET programmes delivered in the country and corresponding requirements are presented in **Table S06**.

Table S06: Principal formal TVET programmes in Bangladesh

AWARDS	ENTRY REQUIREMENT	DURATION OF STUDY	PROVIDERS/INSTITUTIONS
Trade and Certificate Level			
NSS (Basic)	Class VIII	3 to 9 months (usually 360 hrs)	TSCs (Technical Schools and Colleges), TTCs (Technical Training Centers), UCEP and other NGOs.
NSS III / Class IX	Class VIII	1 year	TSCs, General schools, TTCs, UCEP and other NGOs.
NSS II/ SSC (Voc)	Class VIII	2 years	TSCs, General schools, TTCs, UCEP and other NGOs.
HSC (Voc)/ HSC (BM)	SSC/ SSC (voc)	2 years	TSCs, Private colleges
Diploma Level			
Diploma in Engineering	SSC/ SSC(voc)/ HSC/ HSC(voc)	4 years	Public and Private Polytechnic Institutes
Certificate & Diploma in Voc. Teaching	SSC(Voc) for Cert. and SSC(Voc)+cert. for Diploma	1 year – cert. and 1 year – diploma	VTTI (Vocational Technical Training Institutions)
B.Sc (Tech) and Diploma in Technical Education (DipTech)	Diploma in Eng. for Dip Tech and Diploma (Eng)+ Dip Tech for BSc	1 year Diploma and 2 years B.Sc	TTTC (Technical Teacher Training Colleges)

Source: BTEB

Data on the TVET programmes delivered by the TTCs under the Ministry of Expatriates' Welfare and Overseas Employment (under revenue budget) and the public technical education institutions (supervised by the DTE) are presented in **Table S07** and **Table S08**.

Data on the formal programmes leading to the TVET awards which are accredited by the BTEB and involving all types of institutions are shown in **Table S09**.

Table S07: Courses and the seating capacity of the TTCs under the Ministry of Expatriates' Welfare and Overseas Employment

Sl. No.	Courses	Name of TTCs (year of establishment)										
		Mirpur, Dhaka (1942)	BG TTC, Dhaka (1968)	Chittagong (1966)	Rajshahi (1969)	Khulna (1981)	Barisal (1985)	Comilla (1980)	Faridpur (1981)	Mymensingh (1982)	Rangamai (1980)	Bogra (1985)
		Annual Seating Capacity										
1	Drafting Mechanical	60	50	60	60	40						
2	Drafting Civil	80	50	50	60	40			40			
3	General Mechanics	80	90	60	60	40	60	70	30	50	60	60
4	Turner	50	50	50	40	30	-		20			
5	Refrigeration & Air conditioning	90	60	50	60	60	60	60	50	60	60	60
6	Radio/TV	60	60	50	60	40	60	60	50	60	60	60
7	Plumbing & pipe fitting		60	-	-	30		60		50		60
8	Civil Construction (Masonry)	60	60	60	60		50	60	40	50		60
9	Electrical	80	90	60	80	70	60	70	60	50	60	60
10	Carpentry	90	-	80	60	40	50	70	40	50	60	60
11	Machinist	50	50	50	40	60			40			
12	Welding	70	70	50	60	60		60	50	60	60	60
13	Automotive	80	80	80	60	40	60	60	50	50	60	60
14	Garments	60	140	60	60	60	60	60	40	40	100	60
15	Computer	60	60	60	60	60	60	60	30	60	60	60
16	Architectural drafting with Auto CAD			60	60	60						60
17	Electrical machine maintenance			60		60	60	60	60	60	60	60
	Total :	970	970	940	880	790	580	750	600	640	680	780

Source: BMET

Table S08: Technical education programmes delivered under the supervision of DTE

Awards	Type of institution	Name of the course	Number of institutions	Seating Capacity		
				General shift	Second shift	Total
Certificate	Technical School & College	S.S.C (Vocational)	64	8,370	8,370	16,740
		H.S.C (Vocational)		8,370	-	8,370
	Vocational Teachers Training Institution	Certificate -in – Vocational Education	01	120	-	120
Diploma	Vocational Teachers Training Institute	Diploma -in – Vocational Education		120	-	120
	Polytechnic Institute	Diploma -in – Engineering	41	9,300	5,940	15,240
	Glass & Ceramic Institute	Diploma -in – Engineering	01	120	120	240
	Graphics Arts Institute	Diploma -in – Engineering	01	80	80	160
	Bangladesh Survey Institute	Diploma -in – Engineering	01	40	40	80
	Feni Computer Institute	Diploma -in – Engineering	01	80	-	80
	Technical Teachers Training College	Diploma -in – Technical Education	01	40	-	40
Degree	Technical Teachers Training College	B.Sc. in Technical Education		40	-	40
	Bangladesh College of Leather Technology	B.Sc. in Leather Technology	01	120	-	120
	College of Textile Technology	B.Sc. in Textile Technology	01	160	-	160
Total			113	26,960	14,550	41,540

Source: BTEB

Table S09: Number and intake on all TVET programmes accredited by the BTEB (2007)

Sl No.	Courses Title	Duration	Number of Institutions				Intake capacity			
			Public	Private	Total	% Private	Public	Private	Total	% Private
A	Diploma Programme									
1	Diploma-in-Technical	1-year	1		1		120		120	
2	Diploma-in- Vocational	1-year	1		1		80		80	
3	Diploma-in- Engineering	4-year	47	130	177	73	19,05	16,416	35,472	46
4	Diploma-in- Engineering (Glass & Ceramics)	4-year	1		1		120		120	
5	Diploma-in- Engineering	4-year	1		1		80		80	
6	Diploma-in- Engineering	4-year	2		2		120		120	
7	Diploma-in- Marine	4-year	1		1		20		20	
8	Diploma-in- Shipbuilding	4-year					20		20	
9	Diploma-in- Forestry	3-year	1		1		50		50	
10	Diploma-in- Textile	4-year	6	20	26	77	480	1,800	2,280	79
11	Diploma-in- Agriculture	4-year	13	88	101	87	2,400	7,490	9,890	76
12	Diploma-in- Aircraft Maintenance Engineering (Avionics & Aerospace)	4-year	-	1	1			40	40	
13	Diploma-in-Health	3 –year	-	49	49			1,740	1,740	
			74	288	362	80	22,54	27,486	50,032	55
B	Certificate Programme									
14	Certificate-in- Vocational	1-year	1		1		120		120	
15	Diploma in Commerce	2-year	-	7	7			616	616	
16	HSC (Business Management)	2-year	-	1,321	1,321	100		118,89	118,89	100
17	HSC (Vocational.)	2-year	64		64		16,68		16,680	
18	SSC (Vocational).	2-year	89	1,707	1,796	95	12,60	108,80	121,40	90
19	SSC (Voc-Textile)	2-year	40		40		3,600		3,600	
20	National Skill Standard. II &	1-year	-	6	6			660	660	
21	Certificate-in-Health	1-year	-	77	77	100		1,980	1,980	100
22	Certificate in Secretarial	1-year	1		1		22		22	
23	Business Typing	1-year	1		1		22		22	
24	Diploma in Animal Health and Production Technology (In service)	1-year	3		3		1,800		1,800	
	Sub-Total		199	3,118	3,317	94	34,84	230,94	265,79	87
C	Trade Level									
25	National Skill Standard.- Basic	360-	8	75	83	90	500	3,640	4,140	88
26	Certificate in Computer	3/6-	3	472	475	99	120	13,880	14,000	99
	Sub-Total		11	547	558	98	620	17,520	18,140	97
	TOTA		284	3,953	4,237	93	58,01	275,95	333,96	83

Source: BTEB; coverage - all institutions affiliated with BTEB; data collected regularly and available up to 2007.

Table S10: Intake capacity of TVET programs trade-wise (Certificate program)

Name of Trades	Intake Capacity
Agro based Food	810
Audio Video System	6,735
Automotive	1,605
Building Maintenance	9,090
Carpentry	630
Ceramics	30
Civil Construction	1,725
Computer	5,385
Drafting Civil	540
Drafting Mechanical	255
Dress Making and Tailoring	20,295
Dying and Printing	1,425
Electrical Maintenance Work	30
Farm Machinery	1,710
Fish Culture and Breeding	150
Food Processing and Preservation	7,650
Fruits and Vegetable Cultivation	240
General Electrical Works	13,950
General Mechanics	8,445
Livestock Rearing and Farming	90
Machinist	990
Poultry Rearing and Farming	480
Plumbing and Pipe Fitting	210
Refrigeration and Air conditioning	1,425
Turner	270
Weaving	1,425
Welding	1,635

Source: BTEB

Name of the trades in Certificate level programmes (Provided by Technical School and College, TVI and Non Govt. School and Madrasa) are presented in the **Table S11**.

Table S11: Certificate level courses (S.S.C and HSC Vocational)¹⁹

SL.	Trades	SL.	Name of Trade
1.	General Mechanics /Welding Works	23.	Shrimp culture and Farming
2.	Machine Tool Operation	24.	Poultry Rearing and Farming
3.	Machinist	25.	Fruit and Vegetable Cultivation
4.	Welding and Fabrication	26.	Farm Machinery
5.	Computer Application and Operation	27.	Wood Working /Carpentry
6.	Electrical Machine Maintenance /Electrical Works & Maintenance	28.	Foundry Works
7.	Audio Video System /Radio & TV	29.	Ceramic
8.	Industrial Electronics	30.	Glass
9.	Food Processing and Preservation	31.	Knitting
10.	Dress Making & Tailoring	32.	Weaving
11.	Civil Drafting	33.	Spinning
12.	Mechanical Drafting	34.	Dyeing, Printing ,Finishing ,
13.	Architectural Drafting with Auto CAD	35.	Midwifery and Nursing
14.	Civil Construction	36.	Catering and Hotel Management
15.	Building maintenance	37.	Agro Machinery
16.	Computer Operation and maintenance	38.	Automotive
17.	Refrigeration and Air Conditioning	39.	Electronics Control & Communication
18.	General Electrical Works	40.	Plumbing & Pipe Fitting
19.	Machine Tools Operation and maintenance	41.	Building Construction and maintenance
20.	Agro based Food	42.	Drafting Civil
21.	Fish Culture and Breeding	43.	Wood Working
22.	Livestock and Breeding		

Source: BTEB

Table S12: Data on the training capacity of TVET institutions by the type of TVET award

	Programme	Type of Institutions	Number of Institutions		Total	Seating capacity
			Govt.	Non-Govt.		
1.	Diploma-In-Technical Education	Technical Teachers Training College	1	-	1	176
2.	Diploma-In-Vocational Education	Vocational Teachers Training Institute	1	-	1	176
3.	Diploma-In-Engineering	• Polytechnic Institute	42	112	155	17700

¹⁹ New courses are being introduced in the certificate level including: food and beverage production and services, front office management, housekeeping, beautician, aged care, security services, fiber optics, construction technology, instrumentation and process control, mechatronics, mining and mine survey, environmental technology, electro-medical technology, architecture and interior design, garments design and pattern making, telecommunication technology, aircraft maintenance technology (in BAF School of Avionics).

	Programme	Type of Institutions	Number of Institutions		Total	Seating capacity
			Govt.	Non-Govt.		
		• Feni Computer Institute	1			
4.	Diploma-In-Agriculture	Agriculture Training Institute	12	49	61	7610
5.	Diploma-In-Textile Engineering	District Textile Institute	6	12	18	1218
6.	Diploma-In-Survey	Bangladesh Survey Institute	2	-	2	264
7.	Diploma-In-Printing	Graphic Arts Institute	1	-	1	55
8.	Diploma-In-Glass and Ceramic	Glass and Ceramic Institute	1	-	1	88
9.	Diploma-In-Forestry (3 Years).	Forest Training School	1	-	1	55
10.	Diploma-In-Marine Engineering	Bangladesh Institute of Marine Technology	1	-	1	22
11.	Diploma-In-Ship Building Engineering	Bangladesh Institute of Marine Technology	1	-	1	22
12.	Diploma-In-Air Craft Maintenance Engineering • Avionics • Aeronautics	Aeronautical Institute of Technology	1 1	- -	1 1	22 22
13.	Diploma-In-Commerce	Business Management Institute	-	7	7	616
14.	H S C (Business Management)	Business Management Institute	-	1288	1288	90,275
15.	Certificate-In-Vocational Education	Vocational Teachers Training Institute	1	-	1	176
16.	Certificate-In-Vocational Education (Non-Formal)	Vocational Teachers Training Institute	1	-	1	176
17.	H S C (Vocational)	Technical School and College	64	-	64	2875
18.	SSC (Vocational)	Technical School and College	64	1473	-	1,11,900
19.	SSC (Vocational) TTC	Technical Training Centre	17	-	17	5,000
20.	SSC (Vocational) Textile	Textile Vocational Institute	40	-	40	3,600
21.	National Skill Basic Standard (360 Hour)	Technical School and College Technical Training Centre	8	80	88	4,340

	Programme	Type of Institutions	Number of Institutions		Total	Seating capacity
			Govt.	Non-Govt.		
22.	National Skill Standard-2 and 3	Technical School and College Technical Training Centre	-	6	6	660
23.	Non-Government Computer Training	Non-Government Computer Training Institute	-	455	455	15,480
24.	Certificate-In-Secretarial Science		1	-	1	22

Health Technology and Services

Sl No	Programme	Type of Institutions ²⁰	Number of Institutions		Total	Seating capacity
			Govt.	Non-Govt.		
25.	Diploma-In-Medical Ultrasound Technology	Health technology and Services Institute	-	9	9	220
26.	Diploma-In-Dental Technology		-	10	10	220
27.	Diploma-In-Laboratory Medicine Technology		-	15	15	352
28.	Diploma-In-Physiotherapy Technology		-	4	4	88
29.	Diploma-In-Radiology and Imaging Technology		-	2	2	44
30.	Diploma-In-Pharmacy Technology		-	5	5	120
31.	Diploma-In-Integrated Medicine Technology		-	3	3	66
32.	Diploma-In-Nursing Technology		-	4	4	88
33.	Diploma-In-Optical Refraction Technology		-	-	-	-
34.	Certificate-In-Medical Ultrasound Technology		-	4	4	88
35.	Certificate-In-Dental Technology		-	2	2	44
36.	Certificate-In-Laboratory Medicine Technology		-	7	7	154
37.	Certificate-In-Physiotherapy Technology		-	-	-	-

²⁰ Different private institutes are offering these courses. Basically these institutes offer courses on health technology and services.

	Programme	Type of Institutions	Number of Institutions		Total	Seating capacity
			Govt.	Non-Govt.		
38.	Certificate-In-Radiology and Imaging Technology		-	-	-	-
39.	Certificate-In-Pharmacy Technology		-	-	1	22
40.	Certificate-In-Integrated Acupuncture Technology		-	1	1	22
41.	Certificate-In-Nursing Technology		-	3	3	66
42.	Certificate-In-Optical Refraction Technology.		-	2	2	44
43.	Certificate-In-Medical Marketing and Management Technology		-	5	5	110
44.	Certificate-In-Paramedical Technology		-	31	31	704
45.	Certificate-In-Integrated Medicine Technology		-	1	1	22

Source: BTEB

There exist a large number of private TVET institutions in Bangladesh. They are offering SSC (voc), HSC (voc) and HSC (BM) courses. SSC (voc) is equivalent to general SSC and has a quota of 15% for admission to polytechnics. These data are summarized in **Table S13**.

Table S13: Data on supply of formal programs by private providers (2007)

Sl No.	Courses Title	Duration	No. of Institutions	Intake Capacity
A	Diploma Programme			
1	Diploma-in- Engineering	4-year	130	16,416
2	Diploma-in- Textile Engineering	4-year	20	1,800
3	Diploma-in- Agriculture	4-year	88	7,490
4	Diploma-in- Aircraft Maintenance Engineering (Avionics & Aerospace)	4-year	1	40
5	Diploma-in-Health Technology	3 -year	49	1,740
			288	27,486
B	Certificate Programme			
6	Diploma in Commerce	2-year	7	616

7	HSC (Business Management)	2-year	1,321	118,890
8	SSC(Vocational).	2-year	1,707	108,800
9	National Skill Standard. II & III	1-year	6	660
10	Certificate-in-Health Technology	1-year	77	1,980
	Sub-Total		3,118	230,946
C	Trade Level			
11	National Skill Standard.- Basic	360- hour	75	3,640
12	Certificate in Computer Training	3/6-month	472	13,880
	Sub-Total		547	17,520
	TOTAL		3,953	275,952

Source: BTEB

1.3 Formal training courses delivered by Madrashas

Madrashas²¹ are becoming increasingly involved in the delivery of vocational courses. Their number has reached 9200. TVET courses leading to SSC (Voc) have so far been included in 36 Madrashas. Some 100 vocational centres will be set-up in Madrashas each with 2 classrooms and 2 workshops.

Table S14 summarized data on the numbers of Madrashas involved in the provision of vocational courses (Dakhil). In this table the first line indicates number of Dhakhil Madrasha and second line shows the number of students ($\times$ 000) in thousands

Table S14: Enrolment in vocational programs in Madrashas

Type of Madrashah	2001	2002	2003	2004	2005
Madrashas					
Dakhil	5,273	5,385	5,974	6,315	6,685
Students (000)					
Dakhil	2,059	2,081	2,168	2,092	2,236

Source: BBS

2. Data enabling monitoring of operations and outputs of TVET institutions

Data on operations of TVET institutions commonly involve enrolments, student throughput (assessed by comparing enrolments with the numbers of students who appeared for a final test/examination, enabling to calculate the retention rates) and graduations. No data are collected systematically enabling to assess the *retention rates* and graduation rates on different courses of different institutions.

²¹ 'Madrasha' is the educational institution (school) providing education on Islamic religion alongwith other subjects. 'Madrasha' is the Arabic term of 'school'. 'Dhakhil' means secondary level Madrasha (school).

Table S15 summarizes data on examinations and graduations available in Bangladesh. **Table S16** provides data on enrolments and graduations for the programmes accredited by BTEB. These data do permit to assess the final graduation rates (effectiveness of TVET providers) but do not permit to assess the retention rates (numbers of students who enrolled, continued studying and appeared for the final examination).

Table S15: Examination results on technical education programmes

SL. No.	Group	2004			2005		
		Appeared	Passed	% of Pass	Appeared	Passed	% of Pass
1.	Diploma in Commerce	563	437	77.62	620	316	50.97
2.	Diploma in Engineering	3946	2167	54.92	5640	2917	51.72
3.	Diploma in Printing	39	24	61.54	58	46	79.31
4.	Diploma in Textile	81	69	85.18	244	266	92.62
5.	Diploma in Survey	58	36	62.07	138	50	36.00
6.	Diploma in Marine	32	23	71.87	40	20	50.00
7.	Diploma in Forestry	62	40	64.52	51	43	84.31
8.	Diploma in Agriculture	1979	1818	91.86	2378	1212	50.79
9.	Diploma in Tech-Education	29	25	83.21	-	-	-
10.	Certificate in Vocational Education	-	-	-	-	-	-
11.	National Skill standard-II	137	126	91.97	99	96	96.97
12.	National Skill standard –III	231	215	93.07	195	185	94.87
13.	SSC (Vocational) IX	59077	25924	43.75	84767	34148	39.97
14.	SSC Vocational) X	31452	16090	51.16	35779	18403	51.44
15.	Survey Final	-	-	-	-	-	-
16.	Aminship Certificate	-	-	-	-	-	-
17.	Certificate in Computer Application (100 hour)	2506	2412	96.25	4619	4388	95.00
18.	Basic Trade (Link Course) (Optional Subject of SSC)	-	-	-	-	-	-
19.	HSC (Business Management)	18996	12959	68.22	26625	15969	59.98
20.	Certificate in Sec. Sci.	-	-	-	-	-	-
21.	Basic Trade (Self Finance)	-	-	-	-	-	-
22.	Diploma in Ceramic	26	26	100.00	22	22	100.00
23.	Private Exp. Tech & Vocational	108	103	94.44	159	151	94.97
24.	H. S. C (vocational)	1141	335	29.36	1512	460	30.42

Source: BTEB

Table S16: Examination results on BTEB-accredited TVET programs

Sl.	Award	Trades	Enrolment	Passed	Pass Rate%
1.	Diploma-In-Engineering 4 Years (2005)	Civil Mechanical Electrical Power Electronic Computer Architecture Automobile RAC Comical Food Civil (Wood) Ceramic Glass Printing (Graphic Reproduction) Printing (Offset) Surveying	1,200 752 980 538 572 1,308 96 56 49 35 36 18 22 17 26 32 138	612 451 462 306 353 521 56 31 41 32 32 18 22 17 24 22 50	51% 60% 47% 57% 62% 40% 53% 55% 84% 91% 89% 100% 100% 100% 92% 69% 36%
2.	Diploma-In-Engineering 4 Years (2006)	Civil Mechanical Electrical Power Electronic Computer Architecture Automobile RAC Comical Food Printing (Graphic Reproduction) Printing (Offset) Surveying	587 260 479 226 199 702 37 24 08 02 05 02 10 82	245 115 237 140 108 228 10 21 05 02 05 00 04 25	42% 44% 49% 62% 54% 32% 27% 88% 63% 100% 100% 0% 40% 30%
3.	Diploma-In-Textile Engineering 4 Years (2005)	1 st Year	1,735	683	39%
4.	Diploma-In-Textile Engineering 4 Years (2005)	2 nd Year	568	277	49%
5.	Diploma-In-Textile Engineering 4 Years (2005)	3 rd Year	336	243	72%
6.	Diploma-In-Marine Engineering 4 Years (2004)	3 rd Year	32	27	84%
7.	Diploma-In-Textile Engineering 4 Years (2005)	3rd Year (2 nd shift)	42	37	88%
6.	Diploma-In-Forestry (2005)	Regular Irregular	34 07	33 07	97% 100%

Sl.	Award	Trades	Enrolment	Passed	Pass Rate%
7.	Diploma-In-Forestry (2005)	6 th term	51	43	84%
8.	Diploma-In-Technical Education	Civil Electrical and Electronic Mechanical	09 09 07	07 09 05	78% 100% 71%
9.	Diploma-In-Technical Education	Civil Electrical and Electronics Mechanical	10 17 09	04 13 04	40% 76% 44%
10.	Diploma-In-Commerce	Secretarial Science Accountant	299 321	144 172	48% 54%
11.	Certificate-In-Computer Training	Desktop Publication Computer Application	210 9,230	200 9,225	95% 100%
12.	Certificate-In-Computer Training	Object Oriented Programming Database Programming	831 7,631	823 7627	99% 99.9%
13.	HSC (Business Management)	Computer Operation Secretarial Science Accountant Banking Entrepreneurship Development	12,956 9,928 2,580 581 580	8,262 5,314 1,650 376 367	64% 54% 64% 65% 63%
14.	SSC (Management)	Computer Operation Secretarial Science Accountant Banking Entrepreneurship Development	17,993 14,396 4,170 1,097 1,588	10,306 7,383 2,685 742 907	57% 51% 64% 68% 57%
15.	Certificate-In-Health Technology	Paramedical Medical Ultrasound	29 82	29 82	100% 100%
16.	SSC (Vocational) 9 th Class	Dress Making and Tailoring General Electrical Work Building Maintenance General Mechanic Audio Video System Computer Operation Food Processing and Preservation Agro based food Automotive Weaving Drafting (Maniacal) Shrimp Culture and Breeding Livestock Raring and Farming Ceramic Fish Culture and Breeding Architectural Drafting with AutoCAD Fruit and Vegetable Cultivation Poultry Raring and Farming Drafting (Civil) Dying, Printing and Finishing Machine Tools Operation Welding Works Civil Construction	14,941 16,405 9,498 8,568 6,094 7,340 4,396 846 2,316 556 214 47 90 34 485 171 450 719 607 685 1,099 1,535 2,563	8,243 8,790 4,875 4,333 2,942 3,893 2,365 439 909 390 117 35 59 09 205 88 249 277 288 508 427 603 1,319	55% 54% 51% 51% 48% 53% 54% 52% 39% 70% 55% 74% 66% 26% 42% 51% 55% 33% 47% 74% 39% 39% 51%

Sl.	Award	Trades	Enrolment	Passed	Pass Rate%
		Farm Machineries	2,084	749	36%
		Plumbing and Pipe Fitting	141	52	37%
		Joinery and Cabinet Making	22	02	09%
		Electrical Machine Maintenance	437	252	58%
		Refrigeration and Air conditioning	1727	770	45%
		Electrical Maintenance Works	322	140	43%
		Welding & Fabrication	264	73	28%
		Wood Working	455	177	39%
		Radio and Television	335	175	52%
17.	SSC (Vocational) Final	Dress Making and Tailoring	8,755	5,437	62%
		General Electrical Works	9,535	5,943	62%
		Building Maintenance	5,772	3,462	60%
		General Mechanics	5,398	3,220	60%
		Audio Video System	224	145	65%
		Computer Operation	3,623	2,240	62%
		Fruit Processing and Preservation	2,612	1,552	59%
		Agro based food	3,429	2,026	59%
		Automotive	978	598	61%
		Weaving	449	325	72%
		Drafting (Mechanical)	130	97	75%
		Livestock Raring and Farming	34	21	62%
		Ceramic	16	07	44%
		Fish Culture and Breeding	133	87	65%
		Architectural Drafting with AutoCAD	110	87	79%
		Fruit and Vegetable Cultivation	210	133	63%
		Poultry Raring and Farming	278	171	62%
		Drafting (Civil)	350	213	61%
		Dying, Printing and Finishing	502	409	81%
		Machine Tools Operation	523	356	68%
		Welding Works	752	398	53%
		Civil Construction	1,178	684	58%
		Farm Machineries	832	545	66%
		Plumbing and Pipe Fitting	103	56	54%
		Joinery and Cabinet Making	16	11	59%
		Electrical Machine Maintenance	353	274	78%
		Refrigeration and Air conditioning	825	553	67%
		Electrical Maintenance Works	10	04	40%
		Welding & Fabrication	113	72	64%
		Wood Working	252	158	63%
		Shrimp Culture and Breeding	26	15	58%

Series of examination data are also available for individual types of TVET programmes. **Table S17** provides the gender-wise data for S.S.C Vocational, and **Table S18** provides such data for H.S.C programmes; **Table S19** provides data for HSC Business Management programmes, **Table S20** provides the same type of data for Diploma in Engineering. **Table**

S21 provides data on the examination results for SSC (Voc) appeared by the Dhakhil student from Madrasha²²

Table S17: Examination results on S.S.C Vocational programmes

Year	Participants			Graduate			Passing rate			Expelled
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	
1997			1586			998			62.92	10
1998			5276			1954			71.45	45
1999	6438	2165	8603			5860			68.12	80
2000	10683	3877	14560	6585	2420	9005	61.64	62.42	61.85	210
2001	14241	5814	20055	7449	4014	11463	52.31	69.04	57.16	545
2002	17189	8401	25590	7670	3450	11120	44.62	41.07	43.45	603
2003	21460	10168	31628	8703	3606	12309	40.55	35.46	38.92	512
2004	21613	9839	31452	11345	4754	16199	58.49	48.32	51.19	219
2005	21460	10167	31627	8703	3606	12309	40.5	35.47	38.92	226
2006	21674	9778	31452	11345	4745	16090	52.2	48.53	51.16	279
Total	134758	60209	201829	61800	26595	97307	45.86	44.17	48.21	2729

Source: BTEB

Table S18: Examination results on HSC programmes

2001			2002			2003		
Appeared	Passed	% Pass	Appeared	Passed	% Pass	Appeared	Passed	% Pass
525752	149424	28.42	538295	145867	27.09	501507	192713	38.43

2004			2005			2006		
Appeared	Passed	% Pass	Appeared	Passed	% Pass	Appeared	Passed	% Pass
483481	230792	47.74	415088	245659	59.18	412024	263358	63.92

Source: BBS

Table S19: Examination results on H.S.C Business Management programmes

SL.	Year	Number of Students	Pass	% of Pass
1.	2002	13659	6026	44.12
2.	2003	18224	11565	63.46
3.	2004	20343	13892	68.29
4.	2005	26625	15969	59.98
5.	2006	42331	29520	69.74

Source: BTEB

²² Madrasha education system is controlled by Madrasha Education Board under the Ministry of Education. SSC (voc) course has been introduced in some Madrashas. The examination of SSC (voc) in Madrasha is controlled by BTEB.

Table S20: Examination results on the Diploma programmes in engineering

SL.	Year	Duration of Courses	Number of Students	Pass	% of Pass
1.	2003	4 Years	4176	2061	49.61
		3 Years	2563	1148	44.79
2.	2004	4 Years	4088	2272	55.58
		3 Years	1119	301	26.90
3	2005	4 Years	5874	3052	51.95
		3 Years	574	248	42.54
4.	2006	4 Years	6407	2811	43.87

Source: BTEB; This data are generated annually but published annually or bi-annually; records are available for 1990 -2006

Table S21: Examination results for SSC (Voc) in Madrashes

Year	Dakhil	
	Appeared	Pass
2000	152294	83401
2001	150278	146607
2002	148711	78009
2003	163217	68345
2004	176659	105686
2005	156814	97380
2006	161999	122808

Source: BBS

3. Data on TVET staff per type and level of program²³

3.1 Data on TVET instructors/teachers

Data on the numbers of teachers, gender-wise, in public and private providers delivering formal TVET programmes are presented in **Table S22**.²⁴ Data on TVET teachers (instructors) is generally published by BTEB, BMET, DTE, etc. There are two institutions providing training for instructors -- TTTC and VTTI under DTE. The capacity of the Technical Teachers Training Center (TTTC) in Dhaka is only 20-25 graduates a year.

²³ Recruitment rules for the posts of instructors and managers in TVET require the following qualifications: Graduate (Bachelor degree) in engineering or Diploma in Engineering with experiences. In some posts SSC (voc) with experience is also eligible.

²⁴ In the public TVET more than 25% of the teacher posts remain vacant. The teacher/ student ratio in certain institutions has reached 1:20.

Table S22: Total numbers of teachers in TVET institutions gender-wise

Type of Institution	No. of	Teachers	
	Inst.	Total	Female
Polvtechnic Institute (Govt.)	37	1189	166
Polvtechnic Institute (Non-Govt.)	97	465	-
Technical College (Govt.)	64	792	75
Commercial College (Govt.)	16	68	-
Glass & Ceramic Institute (Govt.)	1	10	1
Graphic Arts Institute (Govt.)	1	16	0
Survey Institute (Govt.)	2	17	1
Technical Training Centre (TTCs) (Govt.)	13	359	69
Textile Institute (Govt.)	6	45	3
Textile Vocational Centre (Govt.)	28	331	26
Agricultural Training Institute (Govt.)	12	112	5
Agricultural Training Institute (Non-Govt.)	47	150	18
SSC (Voc) (Non-govt.)??	1224	7511	1869
HSC (B. Management) (Non-Govt.)??	1180	6120	975
Total	2728	17185	3208

Source: BTEB

Table S23 supplies data on the grading of teaching staff in the TVET system.²⁵

Table S23: Instructors in TVET Institutions

Sl.	Level of TVET	Name of the post	Total	Women
1	Polytechnic Institute (20)	Chief Instructor (Tech)	91	126
2		Chief Instructor (Non tech)	19	
3		Instructor (Tech)	320	
4		Instructor (Non tech)	65	
5		Workshop Superintendent	105	
6		Junior Instructor (Tech)	351	
7		Junior Instructor (Non Tech)	79	
8	Polytechnic Institute (18)	Chief Instructor (Tech)	113	N/A
9		Chief Instructor (Non tech)	18	
10		Instructor (Tech)	339	
11		Instructor (Non tech)	95	

²⁵ Gender segregated data on the instructional staff is not readily available in the department. This data would be useful for analysis. These data can be collected from the record of human resource department of DTE and BMET.

Sl.	Level of TVET	Name of the post	Total	Women
12		Junior Instructor (Tech)	339	
13		Junior Instructor (Non Tech)	95	
14	Women Polytechnic (3)	Chief Instructor (Tech)	12	N/A
15		Chief Instructor (Non tech)	3	
16		Instructor (Tech)	36	
17		Instructor (Non tech)	6	
18		Junior Instructor (Tech)	36	
19		Junior Instructor (Non Tech)	9	
20	Technical School & College	Chief Instructor and Instructors (trade and general subjects)	852	34
21		Junior Instructor (trade and general subjects)	558	
22	Technical Training Centres (Rev. budget)	Chief Instructor	58	2
23		Senior Instructor	179	12
24		Instructor	297	44
25	Technical Training Centres (Dev. budget)	Chief Instructor	170	18
26		Senior Instructor	376	48
27		Instructor	548	101
28	Bangladesh Institute of Marine Technology	Senior Instructor	13	-
29		Instructor	27	-
30		Workshop Superintendent	3	-
31	Technical Teacher Training College	Instructional staff	24	6
32	College of Leather Technology	Instructional staff	59	9
33	Graphics Institute	Instructional staff	31	3
34	College of Glass and Ceramics	Instructional staff	45	11
35	College of Textile Technology	Instructional staff	74	8

Source: DTE

3.2: Data on TVET staff employed in managerial positions

Table S24 presents data on different managerial posts available in TVET which appear to involve only positions of the principal and vice-principal.

Table S25 provides comparative data on student/teacher ratios in the different types of educational institutions.

Table S24: Managerial Staff in TVET Institutions

Sl.	Level of TVET	Name of the post	Total	Women
1	Polytechnic Institute (40)	Principal	20	-
2		Vice Principal	20	-
5	Women Polytechnic (3)	Principal	3	1
6		Vice Principal	3	-
7	Technical School & College	Principal	64	-
8	Technical Training Centres (Rev. budget)	Principal	11	-
9		Vice Principal	12	-
10	Technical Training Centres (Dev. budget)	Principal	26	1
11		Vice Principal	26	-
12	Bangladesh Institute of Marine Technology	Principal	1	-
13		Vice Principal	1	-

Source: DTE

Table S25: Student/teacher ratios (public and private)

Levels of education	2002	2003	2004	2005
Primary	56	54	51	47
Secondary	44	39	31	35
College	23	20	16	15
University	15	17	16	16

Source: BTEB

Data on student/teacher ratio for the TVET providers is not available in the published documents of BBS, BTEB, BMET or DTE, which would be useful for designing effective TVET programs. Data on recent situation from DTE and BMET have been collected. Presently Student/teacher ratio is 36 in polytechnics, 26 in TSCs and 24 in TTCs.

4. Data on the provision of specialist formal TVET programmes by the line Ministries

Ministry of Health is responsible for training of medical specialists. Medical colleges produce some 2500 medical graduates and dental surgeons annually. Training facilities exists for paramedics: x-ray technicians, radiographers, dressers, dental technicians, health assistants, midwives, physiotherapist, dental assistant, dietitian, laboratory technician, etc. Since 2005, new private hospitals and clinics have emerged with increased training facilities for health care workers.

Ministry of Civil Aviation and Tourism: Bangladesh Tourism Corporation is involved in skills training for the Hotel Management and Catering Industry.

These courses are not affiliated with BTEB. Hospitality management is now considered a growth industry with new international franchise and good offshore demand.

Bangladesh Tourism Corporation has training centre named National Hotel and Tourism Training Institute (NHTTI)²⁶, which offers diploma and certificate courses in the following fields:

1. Diploma in Hotel Management
2. Professional chef course
3. Food and beverage service
4. Food and beverage production
5. Front office and secretarial operation
6. Bakery and Pastry Production
7. House Keeping and laundry operation
8. Travel agency and tour operation
9. Computer literacy.

Annual production capacity is about 500. Duration of these courses vary from 4 months to 1 year. Moreover some other private training institutes offer these types of courses. These institutes are located in Dhaka and Sylhet.

Ministry of Textile offers a 4-year Diploma in Textile Engineering in two institutions with the annual intake capacity of 160 students. It's textile vocational training institutions provide the Certificate-level training. Examples of the line ministries –based specialist training provision are provided in **Table S26, S27 and S28**.

Table S26: Training programs of the Ministry of Textiles

	Name of the course	Duration	Seat capacity	Enrolments	Passed Out
1.	S.S.C.(vocational Textile Course)	2 years	3600	2653	1525
2.	Diploma in Textile Engineering	4 years	4041	344	295

Source: Textile Department

Table S27: Specialist programs of other ministries

Sl	Name of the Ministry/Department	Training program
1	Ministry of Local Government, Rural Development and Cooperatives (LGRD)	Diploma in Engineering in Surveying
2	Ministry of Environment and Forests	Diploma in Engineering in Forestry (1 instt.) and Diploma in Engineering in Forestry (in-service) (2 inst)

²⁶ NHTTI is located at Mahakhali, Dhaka

3	Ministry of Social Welfare	- Vocational courses in the Orphanages and Corrective Centres. - Training facility for physically retarded and the handicapped peoples.
4	Ministry of Shipping	Marine training schools (3) train seamen, inland and sea-going personnel.
5	Ministry of Energy and Mineral Resources	In house-wiring for the rural electrification programme.
6	Ministry of Defense	- Diploma-in-Engineering in two institutions. - Training facilities in Bangladesh Machine Tools Factory (BMTF).
7	Ministry of Agriculture	- Diploma course in Agriculture in 13 institutions (intake capacity of 2,400 annually). - Diploma distance courses for more than 20,000 in-service block supervisors.(BTEB affiliated)
8	Department of Social Services (DSS)	Training courses in sewing, livestock rearing, crop production, fish culture, knitting, electronics, refrigeration, garment and computer.
9	Bangladesh Rural Development Board (BRDB)	Training in livestock rearing, crop production, fish culture, sewing and integrated farming at the Upazila level
10	Department of Livestock (DLS)	Courses on livestock rearing and integrated farming.
11	Department of Fisheries (DoF)	Training programmes on fish culture to various stakeholders.
12	Bangladesh Power Development Board	- Three specialized training centres (in Ashuganj, Ghorasal, and Khulna), - Four regional training centres (in Rajshahi, Khulna, Chittagong, and Tongi) and - One engineering academy (in Kaptai), engages in upgrading engineers, technicians, tradesmen, and other non-technical officers and staff.
13	Bangladesh Railway	Skill upgrading programme for its technical staff. It operates four diesel locomotive training centres in Dhaka, Chittagong, Parbatipur and Lalmonirhat.
14	Bangladesh Jute Mills Corporation	Four training centres with a yearly training capacity of some 2,600. The duration of courses is 1-6 weeks.
15	Bangladesh Chemical Industries Corporation	Central Fertilizer Training Institute (CFTI) in Ghorashal for technical personnel of fertilizer factories in the country. The CFTI trains 250 persons annually.

The Training Institute for Chemical Industries (TICI) at Palash, Narshingdi runs programmes, as indicated in **Table S28**.

Table S28: Training programmes of TICI

SL #	Name of the Courses	Capacity	Enrolment	Passed Out	
Long Courses					
1.	Advanced Industrial Technology (AIT)	120	120	1048	
2.	Industrial Technology (IT)				
3.	Basic Industrial Technology (BIT)				
Upgradation					
1.	Integrated Industrial Technology-1	1200	1200		
2.	Integrated Industrial Technology-2				
3.	Integrated Industrial Technology-3				
4.	Specific Technical Subjects Including (HRD)				
5.	Tailor Made Course				

Source: Training Institute for Chemical Industries (TICI)

Other public sector training institutes are active in Bangladesh including:

- *Bangladesh Industrial and Technical Assistance Center (BITAC)*, a semi-government organization under the Ministry of Industries undertakes initial training in technical careers and advanced training for skilled workers to improve industrial productivity. It offers training in the following trades: Machine shop, Foundry, Machine Mould design, Pattern making, Welding, Heat Treatment, Electroplating, Automotive, Auto-Electricity, Machine Maintenance, Electrical Maintenance, Mechanical Drafting, Plastic Processing Technology, Quality Control. Each program consists of 14 weeks and is conducted three times a year. The center is ideal for training of skilled workers to attain the level of NSS I and also skilled workers to the level of supervisors.
- *Bangladesh Small and Cottage Industries Corporation (BSCIC)*, a semi-government organization under the Ministry of Industries, offers training in trades and handicrafts through its five VTCs established in regional locations outside Dhaka. Most of the courses are of 4-6 months duration. It has in Dhaka the 'Small and Cottage Industries Training Institute (SCITI)', which offers courses to persons engaged in developing small and cottage businesses. The SCITI conducts mostly ½ week courses on entrepreneurship development, industrial management, marketing management and financial management. It has trained 7,099 persons so far, including overseas participants.
- *Bangladesh Handloom Board* trains weavers in weaving and loom technology.
- *Bangladesh Road Transport Corporation (BRTC)*, a semi-government organization has the facilities of training in their centers all over the country relating to automobile body building, welding and maintenance (of 8-16 weeks duration).
- *Bangladesh Computer Council* reported that about 4,000 training centers are imparting training in various computer applications mainly covering the standard software applications. These institutions offer courses at the level of Diploma, Certificates and short term courses. The centers spread all over the country with an annual intake of 100,000 trainees annually.

Furthermore, a broad range of agencies are involved in the provision of specialist programs for the fast developing marine occupations. A summary of such TVET provision is presented in **Table S28a**.

Table S28a: Training courses in the trades related to marine field

SL	Ministry/Department/Institution (YOE) and Courses	Duration	Seat Capacity	
1	Name of the Ministry	Ministry of Expatriates' Welfare and Overseas Employment		
	Department	Bureau of Manpower, Employment and Training (BMET)		
	Institution	Bangladesh Institute of Marine Technology (BIMT) (Year of establishment : 1958) ²⁷		
	Courses	i) Diploma in Marine Engineering	4 years	40
		ii) Diploma in ship Building Engineering	4 years	40
		iii) Marine Diesel Artificer	2 years	25
		iv) Shipbuilding and Mechanical Drafting	2 years	25
		v) Shipbuilding Welding	2 years	25
		vi) Shipwright Plater	2 years	35
				190
2	Name of the Ministry	Ministry of Shipping		
A	Department	Department of Shipping		
i)	Institution	Marine Academy (Year of establishment : 1962)		
	Courses	Nautical	2 years	30
		Engineering	2 years	26
		Sub Total		56
ii)	Institution	Seamen's Training Centre (Year of establishment : 1952)		
	Courses	Fresher	4-6 months	193
		Refresher	4-6 months	319
		Sub Total :		512
B	Department	Inland Water Transport Authority (IWTA)		
i)	Institution	Deck Personal Training Centre (DPTC)		
	Courses	Deck Cadet	1 year	25
		Refresher	3 months	100
		Sub Total :		125
ii)	Institution	Marine Fisheries Academy		
	Courses	Nautical		45
		Engineering	2 years	45
		Marine Fisheries	2 years	45
		Sub Total :		135

²⁷ Passed out trainees from Bangladesh Institute of Marine Technology have better employability in the job market.

In summary, it is clear that comprehensive TVET data is not available from those other Ministries involved in TVET.

5. Supply of non-formal training courses by public and private providers and NGOs

5.1 Structure of available non-formal training courses provided by the government agencies

Ministry of Youth and Sports through its *Department of Youth Development (DYD)* provides training mostly in basic skills through 47 national Youth Training Centers and mobile training facilities. Training targets dropouts and unemployed youth aged 15-30 years in technical trades, secretarial courses, dressmaking, block and boutique, printing, pisci-culture, livestock rearing, poultry, etc. During 1986-90, DYD trained about 31,300 youths. These courses are provided in partnership with some NGOs, such as BRAC.

These courses are not however affiliated with BTEB. DYD is also operating self-employment schemes for youth by offering training in a variety of skills, such as welding, electrical wiring, radio and TV repair, garment making, dairy farming and poultry. The data on such provision are presented in **Table S29**.

Table S29: Training centres operated by the Department of Youth Development

SL.#	Institutions Name	Number of Centers
01.	National Youth Center	01
02.	Technical Training Centres	70
03.	Livestock, Poultry and Pisciculture Training Centres	55
04.	Dress-making Training Centres	68
05.	Block and Batik Printing Training Centres	09
06.	Secretarial Science Training Centres	05
07.	Steno-typing Training Centres	32
08.	Central Human Resource Development Centre	01
09.	Zonal Human Resource Development Centre	04

Source: Ministry of Youth & Sports

Ministry of Women and Children Affairs is involved in skill development through its training centers under the Department of Women's Affairs which are presented in **Table S30**.

Table S30: Training institutions and courses under the Department of Women Affairs

Name of Institution	Location	Training Courses	Duration	Total trainees per year
National Women Training & Development Academy	Head Office at Eskaton	Secretarial Science (Bangla & English) Embroidery Tailoring Batik, Tie-Dye, etc.	6 months or 1 year	805
Women Training Centre (WTC)	64 Districts Sadar & 136 Upazila	Handicrafts etc.	1 year	7,280
Women Agriculture Training Centre	Zirabo, Gazipur.	Crop production, Vegetable production, Duck and poultry rearing, Fish cultivation, and other practical agro-based training	1 year	200
Begum Rokeya Training Centre	Chattrapur, Mymensingh.	Agro-based Training	-----	200
Computer Training Centre	Head Office at Eskaton	Computer application Graphics and Design Web page Design	Various	270 (App)
Rural Women's Agro-based Training & Production Centre	Zirani, Gazipur	Agro-based Training	4 Months	120
Ma Fatema (R) Women Training & Development Complex	Shariakandi, Bogra	Poultry & Dairy farming, Tailoring, Embroidery, Garments, Computer, Food processing,	4 Months	150
Women Agriculture Training Centre	Morolgonj, Bagerhat.	Poultry, Fishery, Livestock, Horticulture, Computer,	3 months	200
Bibi Ayesha (R) Women Training Academy	Zirani, Gazipur	Poultry, Fishery, Dairy, Horticulture, Basic Computer, Garments,	6 Months	200
Homeless Girl Children's Shelter home & VTC	Dinajpur,	Different Vocational Training	Ended in 2005	-
Women Handicrafts & Agriculture Training Centre	Rajshahi	Sewing, Livestock Fishery, Dairy, Horticulture, Basic Computer, Garments, Vegetables & other agro- based Training	3 Months	200
Women Handicrafts & Agriculture Training Centre	Dinajpur	Livestock, poultry, Fishery, Dairy, Horticulture, Basic Computer, Garments, Vegetable & other agro- based Training	3 months	200

Source: Directorate of Women Affairs

5.2 Training delivered by the NGOs

There is no comprehensive data available on training facilities of numerous NGOs operating in the country²⁸. Some data on the numbers of NGOs run training centres are given in **Table S31**. During 2005 NGO trained around 53,176 trainees in various fields- livestock rearing, crop production, fish culture, sewing, garment, computer, handicrafts, electronics and knitting are most important. Course duration varied from one week to 62 weeks depending on the type of course. Course duration for the engineering subjects is longer than the course duration of the agricultural subjects. Average number of participants varied considerably depending on the type of course. During 2005 on average each NGO trained 302 trainees. Highest number of trainees per institute was 479 for nursery development followed by plumbing.¹⁴

Table S31: Number of NGO operated training centers

Name of NGO	Number of Training Institutions by Division						All
	Dhaka	Chittagong	Rajshahi	Khulna	Sylhet	Barisal	
BRAC	32	15	23	17	17	37	141
Proshika	29	1	6	4	3	9	52
ASA	24	10	2	7	1	27	71
TMSS	-	-	21	-	7	1	29
Others	44	12	39	30	32	114	276
All	129	38	91	58	60	188	569

Source: Study for TTI

Sample-based data given in **Table S32** indicate the type of training facilities available in NGOs. **Table S33** describes the structure of skills training provided by NGOs in upazilas.

Table S32: Training capacity of some NGOs

Training capacity	Training facilities		Hostel	
	Number of NGOs	Percentage	Number of NGOs	Percentage
Less than 25	14	16.47	25	39.06
25-49	45	52.94	26	40.62
50-74	12	14.11	6	9.38
75-99	3	3.53	3	4.69
100-124	3	3.53	-	-
150-174	4	4.71	1	1.56
Over 200	4	4.71	3	4.69

Source: SDC Financing Strategies, October 2006

²⁸ About 70% of NGOs surveyed by ADB study team have training facilities that can accommodate 50 participants or less. GTZ, in a study conducted in 2002, estimated that over 100 NGOs are offering skills training. It was estimated that the majority of them are based in Dhaka, Chittagong and Rajshahi Divisions. Some of these providers, like Under Privileged Children's Education Programme (UCEP), Mirpur Agricultural Works and Training School (MAWTS), etc. run certificate and diploma courses with their own certifications. The entry requirements to such courses vary widely. NGOs generally provide training on not-profit basis.

Table S33: Courses offered by NGO-managed institutions at Upazila Level

Type of Course / Trade	Upazilas with the type of course	Number of institutions offering such courses	Average course duration (weeks)	Total enrolments 2007	Average enrolment per institute
Livestock	124	332	6	16,787	135
Agriculture	111	175	7	12,738	115
Fishery	98	175	4	11,194	114
Sewing	70	103	14	3,884	55
Garment	39	48	7	930	24
Computer	15	16	27	360	24
Handicrafts	12	20	8	652	54
Electronics	12	12	26	322	27
Knitting	11	14	16	375	34
Surveying	10	10	1	1,130	113
Block/Boutique	10	10	8	480	48
Book Keeping	8	11	2	1,361	170
Integrated Agriculture	6	6	3	305	51
Refrigerant & AC	5	5	4	145	29
Driving	5	5	12	56	11
Bee keeping	5	6	4	155	31
Poultry	4	8	7	145	36
Electrical	4	4	62	105	26
Nursery development	3	4	2	1,438	479
Farm Machinery	3	3	3	80	27
Carpentry	2	2	13	65	33
Auto Mechanic	2	2	27	32	16
Welding	1	1	52	12	12
Plumbing	1	1	10	300	300
Mobile Servicing	1	1	2	30	30
Fitting	1	1	12	45	45
Communicative Language	1	1	3	25	25
Civil Estimation	1	1	1	25	25
All	186	565	27	53,176	302

Source: Individual NGOs and study reports, BTEB

Example of the non-formal training programmes delivered by BRAC, one of the best performing training NGOs, is given in **Table S34**²⁹.

Table S34: Training programmes of BRAC

Name of trade	Total output	Female
Poultry and Livestock	23,378	12,238
Fishery	6,484	1,396
Sewing, Tailoring	9,323	8,807
Entrepreneurship	30	18
Goat rearing	1,799	1,019
Block and Boutique	2,013	2,003
Nursery and and Forestry	1,238	653
Computer training	147	86
Candle making	34	12
Steno typing	58	55
Arsenic testing, Psciculture	166	35
Electrical and house wiring	35	28

Source: BRAC Presentation April 19, 2007

5.3 Non-formal training courses offered by the private providers at upozila level

Sample-based data on the mix of training courses available from the private providers in upozilas is presented in **Table S35**. The most demanded courses are computer, sewing, electrical, secretarial science, mobile servicing, garment, refrigeration, farm machinery, book keeping, electronics, driving, crop production and welding³⁰. However, no systematic data are collected on such a provision.

²⁹ BRAC is a multi-sector NGO having good facilities for skills development. Through enterprise and employment development training, it aims to poverty alleviation enhancing skills of the ultra poor. During 2005, 6,76,000 people received skills training. BRAC is not entered into formal TVET but has partnered with Ministry of Youth and Sports in some informal courses.

³⁰ The study also indicated that most of private training institutions are operating with shortage of required level of equipment and qualified instructors.

Table S35: Courses available from private training providers in Upazilas (sample-based)

Type of Course / Trade	Nos of UZ having Particular Type of Course	Number of Institutions offering Specific Course	Average Course Duration (Week)	Total enrolments 2007	Average Trainee per Institute
Computer	138	207	48	5,981	29
Sewing	38	44	50	1,610	37
Electrical	32	38	83	1,499	39
Secretarial Science	27	34	100	1,881	55
Mobile Servicing	25	22	16	434	20
Garment	15	24	64	750	31
Refrigerant & AC	14	16	51	625	39
Farm Machinery	14	16	87	610	38
Book Keeping	14	20	99	1,031	52
Electronics	13	14	78	437	31
Driving	11	11	39	271	25
Agriculture	10	13	122	740	57
Welding	8	8	58	196	25
Auto Mechanic	8	8	49	190	24
Livestock	8	7	42	195	28
Civil Estimation	6	8	96	350	44
Block/Boutique	5	5	23	125	25
Handicrafts	4	5	86	135	27
Plumbing	3	3	77	126	42
Knitting	3	3	8	72	24
Fishery	3	3	20	75	25
Poultry	2	4	72	200	50
Health-Care	2	2	32	45	23
Communicative Language	2	2	12	75	38
Carpentry	2	2	59	41	21
Radio/TV Mechanic	1	6	104	180	30
Integrated Agriculture	1	1	208	400	400
Goat rearing	1	2	39	80	40
All	197	405	79	18,354	45

Source: Findings of the research report and occasional study reports by BTEB.

6. Supply of skills training by industry

6.1 Data on in-house training for employees

ADB study on TVET reveals that: 26% of manufacturing establishments in Bangladesh provide their employees with in-service formal training; employers extend in-service training to only a small fraction of its workforce (between 4-3%); about 18% of enterprises have in-house programmes and some 13% of training are provided externally. Vocational schools (31%) and private sector partner firms (26%) are the source of external training.

Findings of study reveals the average training time required for highly skilled workers, skilled workers and semi skilled workers in some selected sectors. Table S37 shows the average training time required for different level of skill in selected eight sectors.³¹

Extent of on-the-job and off-the-job training of the workforce is revealed in the Table: S36³²

Table S35a: Extent of On-the-job and Off-the-job training of the Workforces in the Sub-Sectors

Sub-Sector	N	Annual on-the-job trainees				Annual off-the-job trainees				Annual total trainees	
		No.of trainees	%	% of payroll spent	No. of training days	No.of trainees	%	% of the payroll spent	No.of training days	No.	%
Textiles	5	4496	95.70	1.33(5)	12.2(5)	202	4.30	1.50(2)	11.0(2)	4698	100
Pharmaceuticals	5	1579	97.17	3.55(5)	49.2(5)	46	2.83	2.63(4)	28.5(4)	1625	100
Food Manufacturing	5	115	100.0	1.72(5)	69.4(5)	-	-	-	-	115	100
Ceramics	4	328	99.09	3.15(4)	78.5(4)	3	0.9	10(1)	150.0(1)	331	100
Furniture	5	265	79.58	3.12(5)	78.8(5)	68	20.4	1.83(3)	13.0(3)	333	100
Transport Equipment	4	1086	97.32	1.33(3)	29.0(4)	30	2.68	2.33(3)	150.0(1)	1116	100
Leather & Leather Goods	4	4400	99.77	4.07(2)	-	10	0.23	1.5(1)	-	4410	100
Information Technology	4	275	89.58	9.25(4)	130(3)	32	10.4	11.67(3)	52.5(2)	307	100
All Sub-Sectors	36	12544	96.90	3.34	60.26	391	3.02	4.26	16.11	12935	100

³¹ This data has been analysed in the 'Study on mapping and analysis of growth oriented industrial sub-sectors and their skill required in Bangladesh' conducted by BIDS.

³² This table is derived from analysis of 'Study on mapping and analysis of growth oriented industrial sub-sectors and their skill required in Bangladesh' conducted by BIDS.

Table S35b: Occupational and Qualification Structures of Workers in the Workshop

Sub-Sector	N	Number of workers with Identifiable skills levels											Total workers with skills (a+b+c+d)		Number of vacancies in each skilled occupation (e)		Total number of jobs in each skilled occupation (a+b+c+d+e)	Total unskilled workers in the workshop
		Highly Skilled (a)			Skilled (b)			Semi-Skilled (c)			Apprentices acquiring skills on-the-job (d)							
		Number	%	Training Time (Months)	Number	%	Training Time (Months)	Number	%	Training Time (Months)	Number	%	Number	%	Number	%		
Textiles	5	2370	48.06	13.2	988	20.04	5.4	796	16.14	4.28	777	15.78	4931	100	-	-	4931	2778
Pharmaceuticals	5	1259	26.10	13.6	1408	29.19	8.4	1118	23.18	4.5	863	17.89	4648	96.37	175	3.63	4823	1008
Food Manufacturing	5	935	45.88	24	303	14.87	13.5	398	19.53	5.25	255	12.51	1891	92.79	147	7.21	2038	1340
Ceramics	4	190	14.59	16.5	668	50.31	6.75	336	25.87	3.5	104	7.99	1298	99.69	4	0.31	1302	335
Furniture	5	333	11.38	15.6	1016	34.71	7.2	1003	34.27	3.6	335	11.45	2687	91.80	240	8.20	2927	942
Transport Equipment	4	745	43.83	28	217	12.76	10.5	610	35.88	5.25	128	7.53	1700	100	-	-	1700	551
Leather & Leather Goods	4	942	27.15	12	898	25.79	8	496	14.24	3	1134	32.57	3470	99.66	12	0.34	3482	3711
Information Technology	4	185	55.72	12	75	22.59	6	40	12.05	3	10	3.01	310	93.37	22	6.63	332	39
All Sub-Sectors	36	6959	32.31	16.86	5573	25.88	8.22	4797	22.28	4.05	3606	16.74	20935	97.21	600	2.79	21535	10704

6.2 Data on the formal apprenticeships

Apprenticeship training program is organised under Apprenticeship Ordinance 1962. It is governed by Apprenticeship Rules, 1967. The Ordinance is being revised to broaden the scope and coverage to make it more flexible and respondent for the needs of the industries in consultation with the employers and trade unions³³.

Presently 3 industries namely: (i) British-American Tobacco Limited, (ii) Unilever Bangladesh Limited and (iii) Gulfra Habib Limited are conducting formal apprenticeship training under this ordinance. Data on their training programmes in the last 5 years is shown in **Table S36**.

Table S36: Formal apprentices trade-wise

Trades	2003	2004	2005	2006	2007	2008	Total
Electrical Technology	21	25	25	31	16	16	313
Mechanical Technology	8	8	8	20	22	0	
Turner	0	8	8	8	8	6	
Machinist	0	6	6	6	6	6	
Foundry		1	1	1	1	1	
Fitter		3	4	4	4	3	
Total	29	51	52	70	57	54	

Source: BMET

6.2.1 Informal apprenticeships

Workplace learning is very much practically suitable to achieve skill on the specific job areas. It is cost effective in operation. Various forms of workplace learning are there such as:

- Bangladesh is traditionally enriched in imparting various skills in different, trades on the basis of work place learning. These are practiced through generation after generation on family tradition. The trades are Carpentry, Blacksmith, Goldsmith, Pottery, Agricultural works, Masons and Other handicraft works.
- Presently workplace learning practices are prevailing in some other industries. These are Readymade garments factory, Pharmaceutical industries, Textile industries, Jute industries, etc. These trainees basically work as helpers and assist the operations to perform the production process properly.

³³ There are three apprenticeship training offices situated in Dhaka, Chittagong and Khulna under BMET. Apprenticeship is being implemented to develop industrial skills within industry under the Ordinance. The ordinance has provisions for promoting, developing and regulating systematic apprenticeship programmes in the industries and for securing certain minimum standards of skills.

6.3 Training institutions operated by other employer-related agencies

Several employers' associations have their training establishments. Bangladesh Garments Manufacturers and Exporters Association (BGMEA) runs the BGMEA Institute of Fashion and Technology (BIFT) which is a fully self-financed training institute. The Chittagong Skill Development Centre (CSDC) is the employer-led institution and is a role model of industry-government cooperation. It provides technical training in different industrial trades. CSDC offers training courses for the in-service trainees and operated on the basis of requirement of the industries. The courses are operated on i) Telecommunications, ii) Executive leaderships and iii) Ready made garments. The courses are summarized below:

(1) TELECOMMUNICATIONS

- GSM Fundamentals
- Infrastructure, site acquisition & civil works - level 1 and Level 2
- Fiber Optic Transmission– Level 1 and Level 2
- RBS & Microwave – Level 1 and Level 2
- Base Transceiver Station (BTS) Installation
- Basic Microwave Propagation & Microwave Link Installation

(2) EXECUTIVE LEADERSHIP

- Project management Professional (PMP) Certification
- Effective Leadership for Organizational Excellence
- Managerial effectiveness AND leadership skills
- Effective Performance Management
- Management of Creativity & Innovation
- Communication & Presentation Skills
- Negotiation Skills
- Improving Service Quality
- Managing Organizational Change
- Supervisory, Managerial & Leadership Skills
- Team Building
- Effective Decision Making & Problem Solving Skills
- Interpersonal Skills

(3) READY-MADE GARMENTS

- Garments Machine Maintenance
- Garments Quality Control (QC)
- Preventive maintenance
- RMG social and environmental compliance

The Dhaka Chamber of Commerce and Industry (DCCI) has set up training centre to cater to the needs of the professional training for industrial management and productivity improvement. DCCI Business Institute³⁴ provides training on business and productivity. The

³⁴ DCCI Business Institute is the training institute established by Dhaka Chamber of Commerce and Industries.

Institute is an affiliate of ITC- UNCTD, WTO, Geneva. The major courses of DCCI are as follows:

- Shipping Procedures for Export & Import
- Effective Office Management
- Effective Negotiation Skills
- Human Resource Development (HRD)
- Proper L/C Procedures for Export & Import Operations
- Quality Management & ISO 9000
- Project Management
- Quality Management System for Productivity Improvement
- Managing Finance
- Garments Merchandising: Operations & Management
- How to Develop Distribution Network for Marketing of Products
- Import and Indenting Procedures
- Reduction of Wastage and measures to increase Productivity in RMG
- Rules & Procedures of VAT & Income Tax
- Tour Management for Tours Operators
- Material Planning and Inventory Control
- Effective Selling Skills
- How to Operate Import & Export Business Successfully
- Garments Merchandising: Operations & Management
- How to develop Distribution Network for Marketing of Products

Bangladesh Association of International Recruiting Agencies (BAIRA) has training facilities. The member recruiting agencies have their training centres to provide some refresher training for the selected candidates for overseas market³⁵. Presently about 50 recruiting agencies have their own training centres but only 10-15 agencies maintain the minimum standard of training. Most of the training is of very short duration and provides mostly skills upgrading for the selected workers for the overseas employment. About 15 recruiting agencies run specialized training centres in collaboration with foreign employers, to cater to the foreign employment demands (mostly with the employer from Singapore). The trades in which training is provided are - Industrial Carpenter, Welding (with TIG, MIG and 6G), Rod binder, Marine fitter, Shutterer (Steel fixer), Pipe fitter, etc. Duration of courses spans 3-6 months. Annual output at these training centres is about 30,000-50,000 a year.

7. Number of skilled workers returning from overseas employment

Overseas employment market is a short term contractual in nature. All the contracts are 2-3 years in duration. After completion of the tenure most of the workers return home acquiring technical skill in a trade. There is no data available on returnee skilled migrants at all. But this data would be very useful on analysis of the supply-demand dimensions for labour markets.

³⁵ Government has made it mandatory for the recruiting agencies concerned with overseas employment to have training centres of their own as a condition for renewing licenses.

CHAPTER III: DATA ON EVIDENCE THAT SUPPLY MATCHES DEMAND IN TVET

1. Demand-supply ratios for selected occupations

Steering the linkages between the training and the employment market require data on the demand-supply ratios for particular occupations and qualifications. Such ratios can be produced through direct comparisons between the structures of TVET supply and the occupational and qualification structures of the economy. It is an important form of TVET related data that is able to link the data on supply with the data on demand. Such data should compare the total numbers of *high-skilled and skilled employees* working in the economy with the numbers of TVET graduates produced annually at higher occupational levels in each major occupation. Collecting such data on semi-skilled workers or jobs with low qualification requirements is not always worthwhile because of the high labour turnover that often exists in such trades and for such workers.

The major assumption underpinning this type of data is that the TVET graduates having undertaken long (and costly) education and training will be pursuing working careers in the trades in which they had been trained or at least in some neighboring trades where the acquired skills could be used. The national data of this type may however be difficult to work out and maintain, while the regional or district-level balances of the supply and demand on major skilled trade would be rather useful.

The data on the supply side per trade from both public and private providers is mostly *available* in Bangladesh. It means that it is quite possible to know how many high-skilled TVET graduates will be produced every year in the mass trades such as welders, electricians, fitters, etc. at the high skills levels. If it also becomes known how many jobs in the economy require skilled and high-skilled welders, electricians and fitters, etc., it would be possible to make judgments on whether the annual supply of skilled workers reflects the (potential) demand fairly. From experience, it may be recommended that the overall number of skilled and high-skilled workers produced in a certain trade each year should not exceed 10% of the total number of skilled jobs in this occupation. Collecting such data for the Diploma level occupations could be a lot easier because there are fewer people who will be required in the economy as for instance, electronics technicians and the capacity to produce electronics technicians is rather limited in the country. The risk however is that technicians can easily accept a job of a skilled worker, if need be, while the probability is perhaps less than skilled workers will be employed as technicians. However, in those sectors where labour turnover is more than 10% per year, more accurate data on actual vacancies should be used.

As mentioned above, such comparisons are most practical at the regional, district-wise and local level where the data can be easily collected and interpreted. Such comparisons should take account of migration of skilled workers in each trade, which in case of Bangladesh can make an important impact. **Table SMD01** (supply-matching-demand) outlines the type of data required.

Table SMD01: Example of data on demand-supply ratios in selected occupations, (district-level)³⁶

Trades	No. of skilled jobs in each trade	Graduations from public providers	Graduations from private providers	Supply-demand ratios trade-wise
Welder	870	212	277	0.56
Mechanic (Diesel)	355	59	41	0.28
Wireman	930	164	9	0.19
Mechanic (motor vehicle)	1 800	134	68	0.11
Fitter	3 560	249	2493	0.77
Turner	660	86	12	0.15
Machinist	497	89	21	0.22
Electrician	3 450	251	1 847	0.61
Mechanic (refrigeration and A/C)	240	50	17	0.28
Electronic mechanic	931	230	228	0.49

2. Data on employability and skills utilization by TVET graduates

Data available in Bangladesh

Some data has been collected in Bangladesh on the employment status of TVET graduates from various trade courses in terms of wage employment, self employment and overseas employment. Analysis showed that some 40% of graduates were in local wage employment, 39% in self employment and 21% were employed overseas. Share of employment abroad was higher for the engineering graduates but lower for the graduates from the agriculture-related trades. A high share of graduates from the agricultural programmes tend to be self-employed.

Studies conducted under the PRSP estimated that TVET graduates' employability is higher than that of the general education graduates. There is also a significant difference in employment rates by type of courses. Usually for half of graduates it takes around six months to get a job, while for other graduates it may take about one year. No significant difference has been found in the employability of graduates from both, public and private institutions. The lowest employment rates were among the SSC (Voc) graduates (4%) and HSC (BM) graduates (5%). Most of such graduates transited to further education. These courses appear to be catering to the youth with white-collar job aspirations who can afford pursuing higher education.

About one third of graduates from the SSC (Voc) conducted by the TTCs preferred to continue studies in the higher secondary college. The rest of the graduates enroll in the polytechnics or get absorbed either in self-employment or in wage employment. By contrast,

³⁶ Industrial Training Institutes of India: The Efficiency Study Report. ILO, New Delhi; ILO, Geneva. 2004, 95p

a graduate from a six- month trade training course needs to wait for the employment offer for only a few months.³⁷.

A recent study on the employability of graduates was carried out by the World Bank whose findings are summarized in the **Table SMD02**.

Table SMD02: Employment status of TVET graduates

Course	Employed (%)	Self-Employed (%)	Further Education (%)	Unemployed (%)
Basic Trades	14.1	4.0	23.7	58.1
SSC (Voc)	3.1	0.9	47.4	48.7
HSC (Voc)	28.6	1.1	20.9	49.5
HSC (BM)	4.7	0.7	53.5	41.1
Diploma	18.3	2.4	32.9	46.4
Total	7.3	1.3	44.7	46.8

Source: *The Bangladesh VET System: An Assessment*, World Bank, 2006

A feasibility study “Socio-Economic Viability of establishment of Technical Training Institute at Upazila level” found that 41% of TTC graduates were in local employment, 44%-self-employed and 14% - in foreign employment. In another study conducted by BTEB, 40% of graduates from certificate courses were in local employment, 10-15%-foreign employment, 30% in self-employment, 10% continued studying, others (some 5-10%)- were perhaps, unemployed. Some overall estimates suggest that the employment rates for TVET graduates within one year after the course completion ranges from 30% to 50%.³⁸

Experience of other countries

Many other countries collect data on the labour market success of graduates involving shares of TVET graduates who entered employment and self-employment in the occupations in which they had been trained, etc. per trade, vocational award and preferably gender-wise (see **Table SMD03**).

Data on the type of employment in trades which differs from those in which training had been provided, still may not allow an assessment of the final outcomes of training programmes. For this reason, useful data may be collected on the utilization of acquired knowledge and skills in the current jobs of graduates. **Table SMD04** provides examples of such data.

³⁷ This is estimated on the basis of the feed back information from the passed out trainees from the institutes like Technical Training Centres and Technical School and Colleges

³⁸ Analysis of all the responses from the interviews with the training institutions and feedback report from the passed graduates estimate the average employment rate as 30-50%.

More detailed data can be acquired on the assessment by graduates of the demand for the acquired qualification. Example of such data is given in **Table SMD05**.³⁹ Data on relative wage levels of TVET graduates as compared to the untrained and trained on-the-job workers per occupation and gender may also be very useful enabling to assess comparative private returns from formal TVET programs.

Table SMD03: Labour market destinations of skilled electricians

In wage employment	Self-employed or employer	Assisting parents in their job/business	Doing domestic work	Not working but studying	Working and studying	Do not know
15%	14%	30%	26%	2%	4%	9%

Table SMD04. Utilization of the acquired skills in the current job/electricians

Working in the trade acquired through training	Working in another trade but highly use the skills	Working in another trade and rarely use the skills	Never used the acquired skills	Do not know
30%	10%	12%	14%	34%

Table SMD05: Graduate assessment of the labor market demand for the occupation acquired through training/electricians

Very high	High	Average	Less than average	Low	Don't know
20%	21%	24%	5%	6%	24%

The above types of data are not currently collected in Bangladesh. For this reason, it is difficult to monitor the impact of different TVET programs.

3. Data on unemployment by the level of education and training

Table SMD06 contains data available in Bangladesh on the unemployment of people with different educational levels and formal qualifications. An important finding arising from this data is that the unemployment rates increase with the levels of education. Levels of unemployment of the Certificate holders are particularly high. Such data however does not allow an assessment of unemployment in the individual trades/qualification levels. Despite this, data is available from BBS in the Labour Force Survey which shows the educational level of unemployed persons.

³⁹ Survey of employability of vocational graduates in Egypt. Draft report. Skills and Employability Department, ILO, Geneva, 2006

Table SMD06: Unemployed population (aged 15 years and over) by level of education, residence and gender

Level of Education	Bangladesh			Urban			Rural		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
Number (000)									
No education	793	580	213	132	90	42	661	490	171
Class I-V	261	194	66	59	42	18	201	152	49
Class VI-VIII	196	151	45	58	41	17	138	110	28
Class IX-X	223	183	40	72	57	14	152	125	26
SSC, HSC & equivalent	327	244	83	149	105	43	178	139	39
Degree & above	189	137	52	87	58	29	102	79	23
Others	13	11	2	5	3	2	8	8	0
Total	2002	1500	502	562	396	166	1440	1104	336
Unemployment Rate (%)									
No education	3.4	3.4	3.6	3.2	3.1	3.5	3.5	3.4	3.6
Class I-V	3.3	3.1	4.3	3.3	2.9	4.5	3.4	3.1	4.2
Class VI-VIII	3.9	3.8	4.3	4.3	3.9	5.6	3.8	3.8	3.7
Class IX-X	5.6	5.7	5.2	6.2	6.3	6.0	5.4	5.4	4.8
SSC, HSC & equivalent	7.8	7.0	11.7	8.7	7.7	12.9	6.6	6.6	10.7
Degree & above	9.5	8.1	17.4	7.7	6.2	14.7	10.6	10.6	22.8
Others	9.6	8.9	15.7	9.0	5.7	31.2	11.0	11.0	0.0
Total	4.3	4.2	4.9	5.0	4.6	6.2	4.1	4.0	4.4

Source: BBS

However studying the unemployment rates of recent TVET graduates has only a limited value. The coverage of data on unemployment needs to be expanded towards *skilled adults with qualifications*. Such data provide a basis for identification of the trades in the labour market where both young and experienced skilled workers and technicians cannot find employment (their share among the unemployed will tend to increase over time).

4. Data on skilled job vacancies advertised in press and internet

Large companies in Bangladesh usually advertise their vacancy positions on their websites. There are also some job search internet services to advertise the demand for various jobs. These include: Bdjobs.com, A1jobs.com, Linajobs.com and Chakri.com.bd. Whilst these sites mainly cover professional and managerial positions, a few posts suitable for TVET graduates can also be found. **Annex 5** provides a listing of job positions, titles and sometimes, associated with them qualifications, which are demanded by companies. Advertisements for the jobs requiring TVET Diploma, SSC (Voc) and other qualification levels are published in some newspapers.

CHAPTER IV OBSERVATIONS AND RECOMMENDATIONS

1. Observations

Observations and recommendations of this report are based on the data collected from statistical sources as well as interviews with relevant agencies and institutions (list of contacted agencies is in **Annex 6**).

Availability of data

- TVET related data is usually published through regular or occasional publications and on some websites. BTEB publishes annual reports comprising the data on intake and passed out graduates course-wise and level-wise. The latest annual report available is of 2005-2006. It covers all the institutions both public and private affiliated with BTEB.
- BMET also generates data on student intakes and graduations and some other related data. Annual reports with such data are not however published annually. BMET website also publishes data on employment overseas. Such data has been available since 1976 and updated annually.
- DYD and DWA publish data on their training programmes including student intake and graduations data for different courses. This data is available annually and published regularly.
- Data on private TVET providers is not collected in an organized manner. The only data on this sector is available from the BTEB and cover the courses affiliated with BTEB. In this study, some data on private TVET providers have been collected from individual institutions.
- Data on TVET providers, courses, enrolment capacity, institutions, student intake, and graduations are also published by departments such as BMET, DTE, BTEB, DYD, Department of Textile, BANBEIS, BBS, etc. This data is reliable but not published regularly. The data on student employment status is also available from some individual institutions.
- Those NGOs who deliver training maintain their own data on courses. As these courses cover specific groups of their beneficiaries, the data is generally not publicly available.
- No data on the demand for TVET graduates from the economy is available as such demand has not been properly assessed.
- TVET providers do not maintain any record of the student demand for courses in individual trades.
- BBS produces a considerable number of TVET-related data. BBS conducts national population census every 10 years (last census was conducted in 2001). Labour Force Surveys (LFS) are normally conducted every 3-4 years. Last LFS was carried out in 2005-2006. BBS annually publishes the data relating to TVET on population, age group, workforce, GDP growth, employment, education, and TVET, however the level of detail reported on is of limited value in TVET planning.
- Census of Manufacturing Industries (CMI) has great potential to improve understanding of the demand side of the TVET skills equation, but it is not regularly conducted by

BBS. Improving the practice of establishment surveys would be a very important input to the TVET data system.

- BOI publishes data on growth of industries, employment in industry, FDI flow and local and foreign investment which is relevant for understanding of the demand for TVET graduates. Such data is available on the website and updated regularly.

The type of data to be generated

The data which is currently lacking on TVET includes:

- actual numbers of youth leaving general schooling after the Grade 5 who are willing to acquire skills;
- data on progression from different types and levels of education to formal TVET programmes;
- potential district-level and upazila-level demand for skills development courses;
- regional and district level mapping of TVET programme, annual enrolments per trade and award;
- the demand for and supply of TVET covering massive skilled occupations employed in the local economy and overseas;
- data on unemployment and under-employment of the educated, skilled and experienced workforce;
- labour market success of TVET graduates in the occupations in which they received training;
- rates of return to TVET per type of programme, etc.

Structure of available data

- the currently available data focus primarily on the type of courses and graduates (such as SSC (Voc) and Diploma programmes). This mostly is relevant for informing policy decisions such as whether to expand or reduce enrolments in SSC (Voc), etc. However, no evidence has been found that this data on TVET programmes have been used for such a purpose;
- since the data collected is generally not *occupation-specific*, it does not permit an assessment of the training market regarding particular trade areas and individual trades;
- industry demands for skilled workers is commonly expressed in terms of occupations and qualifications, for this reason, the data on supply described above is not able to be matched with the demands of industry;
- available data does not trace the employment of graduates in the occupations in which they had been trained. Many TVET graduates may find themselves employed in entirely different trades where the acquired skills and knowledge cannot be utilized (meaning negative private returns to such training), etc.

2. Recommendations:

A national system of TVET-related data would be useful mostly for advising policy decisions and for the monitoring purposes. However, at the local level, systems of TVET-related data would permit decisions to be made on balancing the supply with demand and would allow for improved coordination of providers.

It is recommended that:

12. A system of TVET-related data be developed in Bangladesh given the massive training supply and growing demand from youth. Collecting and processing data is expensive and such costs are only justifiable if the data can inform certain policy and management decisions in TVET.
13. In order to assess the demand for TVET programmes, the requirements of the population and the economy need to be surveyed and published regularly. BBS needs to review its practices of conducting the establishment surveys to incorporate the demand for information required by TVET planners, as availability of accurate data on the industries' occupational and qualifications structures would allow improvements to the information base for TVET decisions. The establishment surveys should be more frequent, enabling more effective assessments of the growth and structural changes in the labour force and industry demands for an educated and skilled workforce.
14. Industry should be directly involved in providing data on the demand for skilled workers across different occupations. This may be a task undertaken by industry associations or trade bodies with assistance from government as necessary. The role of the economic sectors through the Association of trade bodies and other industry bodies needs to be encouraged, enabling them to improve assessment of the demand for skilled and educated graduates and improve their linkages to the TVET system.
15. The collection of supply side data in TVET should cover all major providers. Not all of them, however, may need to be followed-up on the annual basis. For instance, many short-term programmes are conducted by NGOs in the community to impart skills for income-generating activities. As long as the TVET system is not given a major role in the provision of skills training for income generation, the data on the demand for and supply of such programmes could be collected once in several years.
16. Generating data to assess how the supply of TVET services matches the demand for them is a new task for many countries. One of the principal indicators here remains the labour market success of TVET graduates. TVET providers should be strictly required to follow up on the labour market status of their graduates and report to their respective agencies: BMET, DTE, DYD, etc on the annual basis. This work should be implemented at various qualification levels and cover graduates of polytechnics, SSC (voc), HSC (voc) and graduates from shorter courses. Collection of data should become a compulsory function

assigned to the TVET institutions. TVET providers should be provided with standard questionnaires and their staff trained in the standard procedures for such surveys enabling to ensure reliability of data.

17. Information on enrolments and graduations of individual TVET providers should be made publicly available allowing for benchmarking of performance. This may or may not be linked to a dedicated website that could be established to guide the public on TVET providers and their course offerings, to provide guidance on the content of TVET programmes and the national TVET qualifications, and to guide TVET students and graduates on the employment opportunities in various trades and industries.
18. Private training providers offering programs not affiliated with BTEB should also be encouraged to collect the above data and supply them to the relevant agencies.
19. TVET data should be collected, stored and processed, by a dedicated and competent organization set up for this purpose (ie: a skills training and labour market observatory). Such an organization should have funds and staff trained in the collection, processing and interpretation of data related to TVET. This data would be used by the policy-makers, TVET administrators and national planners to coordinate, monitor and evaluate progress in TVET. This data would also be indispensable for making investment and funding decisions in TVET.
20. Ongoing work on the data system should continue to expand the data entries, eliminate duplication and develop methods for combining the data. Methodological and technical guidance for the TVET information system needs to be developed further involving standard forms and techniques of data collection, processing, and interpretation as well as the formats in which the data will be provided to various users. National professionals need to be trained in handling the TVET-related data to ensure sustainability of this important work initiated by the TVET reform project.
21. Data on demand for and supply of TVET may best be structured on the basis of the system of occupational qualifications which is currently undergoing a review by the TVET reform project. This would allow for identification of qualification structures in the economy, as well as skills shortages, and will help maintain the supply-demand equilibrium between TVET and the labour market.
22. Skills development in the vast informal economy of Bangladesh is taking place on an enormous scale as it is a matter of personal survival for millions of people. This issue has not been touched upon during the current phase of this study. It would appear that the type of data, and methods of collection for the demand and supply of skills in the informal economy are different and will be addressed later in the TVET Reform Project.

Annex 1: Major local investments in industry sectors

Industries	Investment/disinvestment	Expected impact on employment and demand for skills
Bangladesh Small and Cottage Industries Corporation (BSCIC)	Tk. 80,899.1 million has been invested in 3394 new units	Created some 300,000 jobs
Bangladesh Chemical Industries Cooperation (BCIC)	Industry has incurred a loss of Tk. 29.49 crore during 2006-2007. 10 companies out of 12 enterprises (7 Fertilizer Factories, 2 Paper mills, a Cement factory, and a Glass sheet factory) are scheduled for privatization	
Bangladesh Sugar and Food Industries Corporation (BSFIC)	15 sugar mills incurred loss of 10.105 million in 2006-07	
Bangladesh Jute Mills Corporation (BJMC), Bangladesh Jute Mills Corporation (BJMA)	Out of 38 mills involving 11,200 looms, 10 are closed, while 14 are in full and 24 in partial operation	
Export Processing Zones (EPZ)	In the 8 EPZs there are more than 200 industrial units. During 2005-2007, these industries received an investment of US\$ 264,0 mln.	
Telecommunication sector		Employs some 1,50,000 workers and experiences a further increase in the demand for employees by 5-10% every year.

Annex 2: Forecasted demand in the overseas employment market

Countries of destination	Principal trades in demand	Numbers of demand
UAE	Rod binder, Pipe fitter, Mason, Tiles fixer, Duct Technician, Electrician, Plumber, Carpenter, Painter, Steel fixer, Crane operator, Oil and gas exploration, Tourism, Chemicals and Health sector.	
Kingdom of Saudi Arabia	Hotel management, Nurse, Electrician, Plumber, Mason and Carpenter	
Kuwait	Fertilizer and Chemical Industries) Construction, Hotel management, Nurse, Sales persons, Drivers, Technicians, House- keepers, Electricians, Air condition mechanics, Vehicle mechanics, Health technicians, Pipe fitters, Caterers, Engineers, Computer Programmers and Operators of drilling rigs.	
Oman	IT Professional, Agriculture, Fishing, Metal working, Domestic services, and Automotive.	
Malaysia	Electricians, Electronics, Garments, Construction and Plantation workers	
Singapore	IT sector, Shipyard workers, health workers, Hotel employees, Rod binders, Shutterers, Carpenters, Welder (6G), Marine fitters and Tile Fixers.	
Libya	Plumbers, Carpenters, Pipe fitters, Electricians, Painters, Welders, Rod binders, Steel fixers and Tiles fitters.	

Annex 3: Structure of the education and TVET in Bangladesh

Age	Grade																	
26+																		
25+	XX						Ph. D(Engr)	Ph.D(Medical)										
24+	XIX			Ph. D	PostMBBS Dipl				Ph. D (Education)									
23+	XVIII		M.Phil		M.Phil(Medical)													
22+	XVII	MA/MSc/MCom/MSS/MBA			LLM	M B B S BDS	MSc(Engr)	MSc.(Agr)			M B A	M.Ed & M A(Edn)			MA(LSc)			
21+	XVI	Bachelor (Hons)	Masters (Prel)		LLB(Hons)	BSc.Eng BSc.Agr BSc.Text BSc.Leath	BSc.Eng	BSc (Tech.Edn)		B B A	B.Ed & &Dip.Ed		BP ED	Dip.(LSc)	Kamil			
20+	XV		Bachelor (Pass)															
19+	XIV																	
18+	XIII																	Diploma in Nursing
17+	XII	Secondary	Examination				HSC				HSC Vocational		C in Edu.	C in Agri	Diploma in Comm	Alim		
16+	XI		HIGHER SECONDARY EDUCATION															
15+	X		Examination				SSC		TRADE Certificate/ SSC Vocational		ARTISAN COURSE e.g. CERAMICS						Dakhil	
14+	IX		SECONDARY EDUCATION															
13+	VIII		JUNIOR SECONDARY EDUCATION															
12+	VII																	
11+	VI																	
10+	V	PRIMARY EDUCATION													Ebtedayee			
9+	IV																	
8+	III																	
7+	II																	
6+	I																	
5+	PRE-PRIMARY EDUCATION																	
4+																		
3+																		

Annex 4: Current vocational qualification framework in Bangladesh

National Skill Standard (NSS) Classification

III	Semi-skilled	Routine/Repetitive job under minimum supervision and new job under direct supervision
II	Skilled	Routine/Repetitive job without supervision and new/complex job with supervision.
I	Highly Skilled	Limited planning of job and coordination and supervision of activities of a group of workers.
Subsequently the following two standards were added by BTEB:		
NSS	Skill Level	Competence Level (Capable of doing)
Basic	Basic Skilled	Routine/Repetitive job under 100% supervision.
Master	Master Craftsman	Planning of a new complex job coordination and supervision of activities of a group of workers and evaluation and control of quality of works.

First year course content of SSC (voc) meets the requirement of National Skill Standard Grade-111 (Semi-Skilled level). Similarly Second year course content meets the requirement of Grade-11 (Skilled level). The trainees on completion of each part are employable as semi-skilled and skilled workers attaining the certificates of national skill standard Grade-111 & Grade-11 on completion of 1st and 2nd year respectively.

Annex 5: Demand for professional and managerial staff (summary of newspaper advertisements)

SL.#	Position	Qualification
1.	Engineer Civil Engineer Diploma Engineer Senior Project Engineer Senior Engineer Junior Project Engineer Engineer civil Team Leader (Survey & Design) Design Engineer CME Manager Quality Controller Regional Project Manager Construction Supervisor Office Engineer/Quantity Surveyor Site Engineer Fabric Construction Technician Project Engineer Manager Field Engineer Field Engineer(Structure) Assistant Engineer Instructor Draftsman Operator Maintenance Officer Auto CAD Operator Planning Engineer Material Engineer Surveyor	Diploma in civil Engineering
2.	Technician Sub Assistant Engineer Workshop in Charge Assistant Manager (Technical) Diploma Engineer Engineer Laboratory Technician Maintenance Engineer Assistant Engineer Lecturer/ Associate professor Project Manager Assistant Professor Commercial Officer IT Executive Assistant Bio Medical Engineer	Diploma in Electronics Engineering

SL.#	Position	Qualification
	Marketing Executive Instructor	
3.	Engineer Workshop in Charge Assistant Manager (Technical) Diploma Engineer CAD Design Engineer CAD Operator Irrigation Engineer Mechanical Engineer Washing Manager Chief Engineer Project Engineer Auto Mechanic Press Mechanic Assistant Maintenance Manager Shift Supervisor Assistant Engineer Field Engineer Instructor Draftsman Maintenance Manager Maintenance in Charge Project Manager Production Engineer Foreman Production Officer Field Engineer Testing Engineer Generator Engineer Commercial Officer Engineering Trainee Engineer Maintenance Engineer Supervisor Plant Mechanic Shift in Charge Purchase Officer Paper Machine Shift In Charge Quality Control Officer	Diploma in Mechanical Engineering
4.	Engineer Manager (Technical) Diploma Engineer CAD Operator Chief Engineer Assistant Professor Assistant Engineer Project Manager Implementation Engineer	Diploma in Electrical Engineering

SL.#	Position	Qualification
	Support Engineer Solutions Engineer Instructor Field Engineer Draftsman Executive Engineer Service Engineer Assistant General Manager Production Officer Supervisor Building Supervisor Testing Engineer (Meter) Commercial Officer Trainee Engineer Marketing Executive Generator Operator	
5.	CAD Design Engineer Architect (Design and Planning) Assistant Engineer Chief Instructor Jr. Architect Auto CAD Operator Executive (Plumbing) Drafts Man	Diploma in Architect
6.	Power Engineer Power Manager Chief Engineer Assistant Maintenance Manager Assistant Engineer Field Engineer Inspector Power Tiller Technician	Diploma in Power
7.	Chief Engineer Manager Engineering and Maintenance Assistant Maintenance Manager	Diploma in Marine Engineering
8.	Lecturer/ Associate professor Project Manager Implementation Engineer Solutions Engineer Support Engineer	Telecommunication Engineering
9.	Laboratory Assistant (Computer) System Analyst Data Entry Operator Project Manager Implementation Engineer Support Engineer Solutions Engineer Computer Network manager/Engineer Computer Programmer	Diploma in Computer Engineering

SL.#	Position	Qualification
	Software Engineer Hardware Engineer Instructor Assistant Teacher	
10.	Computer Operator Data Entry Operator	Trade/ Certificate Course
11.	Laboratory Technologist Lab Assistant	Diploma in Laboratory Technology
12.	Assistant Physiotherapist	Diploma in Physiotherapy
13.	Medical Technologist Mechanical in Charge Medical Assistant	Diploma in Medical Technology
14.	Senior Engineer	Electro Medical Technology
15.	Nurse	Diploma in Nurse
17.	Driver	
18.	Production line in Charge Production Supervisor	Diploma in Food Technology
19.	Senior Technician	Knitting
20.	Senior Technician	Textile & Clothing
21.	Senior Technician	Sweater
22.	Helper Weaving Helper Dyeing Production Officer Assistant. Production Officer production Manager Prof./Associate professor Associate professor Lecturer Surveyor Garments Technologist Director Director production General Manager Merchandising Manager Quality Manager Maintenance Manager Merchandiser Quality Controller Garment Technologist	Textile Technology
23.	Lecturer/ Associate professor Dyeing & Finishing Technician Sweater Technician	Diploma in Fashion Design
24.	Lecturer/ Associate professor Quality Assurance Technician Knitting Technician	Textile Engineering

SL.#	Position	Qualification
	Yarn Dyeing Technician Fabric Dyeing Technician Sr. Lecturer Assistant Professor Technologist Manager Sr. Executive Manager (Dyeing & Finishing) Executive Production Officer Knit Quality Controller Dyeing Master Floor Supervisor Assistant Project Manager Knitting Manager Inspector Assistant Seizer Laboratory Technician Laboratory Assistant	
25.	Lecturer/ Associate professor	Sewing Technology
26.	Graphic Designer Production Manager Garment Quality Controller Sweater Technician Computer Graphic Designer	Diploma in Graphic Design
27.	Lecturer/ Associate professor Garment Technologist	Apparel manufacturing Technology
28.	Technical Manager	Graduate in Pattern making & Garment
29.	Pattern Master	
30.	Electrician Technician Plant Attendant Lab Technician Engine Driver Radio Technician Mechanic Auto Mechanic Press Mechanic Mechanical Foreman Press Mechanic Mechanical Fitter Technical Trainee	Trade Course (Voc)
36.	Generator Operator Industrial Electrician House Wearing Electrician Auto Mechanic	SSC Trade Course

SL.#	Position	Qualification
	Press Mechanic Plumber Electric Line man	
38.	Draftsman	Diploma in Draftsmanship
39.	Shift Supervisor Quality Control Officer Selection Officer	Diploma in Glass & Ceramics
40.	Sr. Technician	Woven, Knit, Sweater, Patterns, Fittings.
41.	Jr. Technician	Woven, Knit, Sweater, Patterns, Fittings.
42.	Production Manager Technical Manager Quality Assurance Manager Garment Technologist	Garment Manufacturing Technician
43.	Washing Manager	Garments Washing Technology
44.	Sampling master Engraving manager Loom Technician	SSC Textile
45	Foreman Supervisor Service Engineer Engineer Sub- Assistant Engineer	Diploma in Engineering
	Welder	Trade Course
	Fitter/Pipe Fitter	Trade Course
	Surveyor	Diploma in Survey
	Mason/ Carpenter/ Shuttering	Trade Course

Annex 6: Agencies and persons contacted during collection of data

A. Government organisations

SL#	Name of the institution	Address	Contact Person
1.	Bangladesh Technical Education Board (BTEB) Department	Agargao, Shere Bangla nagar, Dhaka	Mr. Shahjahan Mia Secretary
2.	Bangladesh Technical Education Board (BTEB) Department	Agargao, Shere Bangla nagar, Dhaka	Dr. Nitai Chandra Sutradhar, Chairman
3.	Directorate of Technical Education (DTE)	Shiksha Bhaban, Abdul Gani Road, Dhaka	Dr. Md. Wazed Ali, Project Officer

SL#	Name of the institution	Address	Contact Person
4.	Directorate of Technical Education	Shiksha Bhaban, Abdul Gani Road, Dhaka	Mr. Syed Nurun Nabi, Assistant Director
5.	Directorate of Technical Education	Shiksha Bhaban, Abdul Gani Road, Dhaka	Mr. Mustafizur Rahman, Director
6.	Rangpur Polytechnic Institute	Rangpur Polytechnic Institute	Mr. ANM Salahuddin, Principal
7.	Bureau of Manpower, Employment and Training	89/2 Kakrail, Dhaka	Mr. Md. Ahsan Habib, Director,
8.	Bureau of Manpower, Employment and Training	89/2 Kakrail, Dhaka	Mr. Md. Anisur Rahman Mandol, Deputy Director
9.	Bangla-German Technical Training Center	Bangla-German Technical Training Center, Mirpur, Dhaka	Mr. Nazimuddin Ahmed, Principal
10.	BITAC	Tejgao, Dhaka	Dr. Syed Ehsanul karim, Additional Director,
11.	Textile Department	BTMC Bhaban, Kawran Bazar, Dhaka	
12.	Department of Women Affairs	37/3 Eskaton Garden Road, Dhaka	Zakia Yasmin Jowrder, PD
13.	Bangladesh Rural Development Board (BRDB)	Palli Bhaban, 5 Kawran Bazar, Dhaka	
14.	Training Institute for Chemical Industries (TICI)	P.O. Sarkarkhana, Polash , Narsingdi -1611, Bangladesh	MD.Abdul Aziz (Chemist) 01914537975
15.	Department of Social Welfare	Samaj Seba Bhaban, E8/B 1, Agargaon Sher-e-Bangla Nagar, Dhaka-1207	
16.	Comilla BRTC Training Institute	BRTC Bus Dipot	Abdur Rashid 01915-534305, 081-61988
17.	Narayanganj BRTC Training Institute	Khanpur, Narayanganj	
18.	Department of Youth Development	Juba Bhaban, 108 Motijheel, C/a Dhaka	Aloka Prova Das 9560758
19.	Rural Development Academy, (RDA), Bogra.	Rural Development Academy,(RDA), Bogra	Mostafizur Rahman 051-78602, 51001

B. Private organisations

1.	BGMEA Institute of Fashion Technology (BIFT)	S. R. Tower, 105 Uttara, Dhaka-1230	Md. Mojibar Rahman 01710899887
2.	Bangladesh Garment Manufacturers Exporters Association (BGMEA)	BGMEA Complex, 23/1 Panthapath Link Road, Kawran Bazar, Dhaka-1215,	Saira 01726200056
3.	Bangladesh Knitwear Manufacturers Exporters Association (BKMEA)	Planners Tower (12 th Floor), 13/A Sonargaon Road, Dhaka-1000, Bangladesh	
4.	BKMEA	Planners Tower (12 th Floor), 13/A Sonargaon Road, Dhaka	S. M. Russel 01711983100
5.	Romdo Institute of Medical Technology	42/4, Boundary Road, Mymensingh	Abdul Matin Director (Aca) 01199926004
6.	Mymensingh Institute of Science Technology (MIST)	27/B, C.K Gosh Road, Mymensingh	Shahana Aktar Director (Aca) 01717784496
7.	Model Institute of science & Technology (MIST)	B. I. D. C. Road DUET, Gazipur	Md. Haidar Alom (Deputy Director) 01712246373
8.	Royal Institute of Technology (RIT)	Abdus Sattar Sarani (West Bhurulia), DUET, Gazipur	Md. Sarwar Hossain (Deputy Director) 01711426418
9.	Mutlob Technical and Computer Training Institute	DUET, Gazipur	Nurul Hq (Director) 01715260574
10.	Training Institute for Chemical Industries (TICI)	P.O. Sarkarkhana, Polash, Narsingdi	Md. Abdul Aziz (Chemist) 01914537975
11.	A.R.T.T. School and College	Ghoradia, Narsingdi.	M N U Ahmad (Principal) 01717829030
12.	Narsingdi Polytechnic Academy	Press Club Bhaban, Upzilla More Narsingdi	(Principal) 01714355154
13.	North Bengal Institute of Computer Technology(NBICT)	Khan House, S.P. Lane, Malotinagor, Bogra	01712101252, 01712156505.
14.	Bogra Technical Institute, Bogra	Sherpur Road, Banani, Shahjahanpur, Bogra	M. Serajul Islam Talukder (Principal) 01711190701
15.	Institute of Information	Sherpur Road, Colony,	051-64550

	Technology Bogra (IITB)	Bogra	
16.	Bangladesh Institute of Information Technology (BIIT).	Mofiz paglar More, Sharpur Road, Bogra	Md.Shahabudin Saikat (Principal) 01711387069
17.	Islami Bank Institute of Technology (IBIT).	Islami Bank Plaza (5 th Floor), Thana Road, Bogra	F.M.Nurunnabi (Principal) 01912017916
18.	Prime Institute of Science and Technology (PISMT)	Ibrahim Manshon, 29/2 Islambad, R.K. Road Rangpur	Md. Akkas Ali Sharkar (Principal) 01713210263
19.	Bangladesh Institute of Medical Technology and Ultrasonography (BIMTU) Rangpur.	Ibrahim Manshon, 29/2 Islambad, R.K. Road Rangpur	Md. Akkas Ali Sharkar (Principal) 01713210263
20.	Institute of Health Technology Rangpur	Sharpur Road, Bogra	Dr. Shiduzzaman (Principal) 051-66762
21.	Swanirvar Technical Training Centre.	Voberbazar Charmatha Bogra-5842, Bangladesh. Mobile: 01711976306	
22.	The German Technical Training Institute	Malotinagar, Battola, Bogra	01720411262
23.	Shamoly Ideal Polytechnic Institute	350/a, CDA Avenue, Muradpur, Chittagong.	Ashutos Chokroborty 031-651739, 01819067200
24.	Islami Bank Institute	Lal chan Road, Chittagong	Alamgir Hossain 031-625310, 01819328610
25.	Textile Vocational Institute Rangamati	T&T area, Rangamati Pouroshava	Sekendar Badsha 0351-62836,
26.	Forest School Chittagong	Forest School, East Nasirabad, Chittagong-4209	Delwar Ahmed 684405
27.	Agriculture Training Institute	Agriculture Training Institute, Hathajari, Chittagong	031-2601011
28.	Daffodil Institute of information Technology	1147/A, Ifco Complex, Nasirabad, Chittagong	Ataur Rahman 031-651354, 01713493269
29.	Sukurchhari Agricultural Training Institute	Office of the Project Director, Sukurchhari Agricultural Training Institute, Rangamati	Tapan kumar Pal 0351-62945, 62946, 01556508807
30.	Chittagong Science and Technology Institute.	222 Sholoshahar, Patchlaish, Chittagong	031619572, 01554325130

31.	Chittagong Technical College and School	129, Muradpur, Asian Highway, Chittagong	K. M. M. Musa 651954, 650377,
32.	Shamoly Ideal Polytechnic Institute [	House- 9/3, Road-01, Samoly, Mohammadpur, Dhaka	Fozlul Haque 8130146
33.	Bangladesh Skill Development Institute	H-11, R-2b, Mirpur Road Dhanmondi, Dhaka-1205	088-02-8110818

C. NGOs

1.	MAWTS	1/3-1/A, Pallabi Mirpur-2 Dhaka	Md. Atiar Rahman Manager 01713384091
2.	Grameen Shikka	Grameen Bank Complex, Mirpur-2, Dhaka	Abdur Rahman 01732122252
3.	Proshika	i/1-Ga, Section-2, Mirpur-2 Dhaka	
4.	CARITAS	2, Outer Circular Road Shantibagh, Dhaka-1217, Bangladesh	Md. Atiar Rahman Manager 01713384091
5.	BRAC	BRAC CENTRE 75 Mohakhali, Dhaka-1212 Dhaka	S.M. Tofazzel Hossain 01712792440
6.	TMSS Technical Institute.	TMSS Campus, Rangpur Road, Thengamara, Bogra	Md. Ahsan Habib (Principal) 01713377229
7.	Rangpur Dinajpur Rural Service (RDRS).	RDRS Rangpur, Bangladesh	Ashafa Satim Senior Manager 01735400604

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