

**Logos**

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

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

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

## EXECUTIVE SUMMARY

Bangladesh is a country with the population of about 140 mln. and the labour force being about 60mln. 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 enabling to inform the delivery planning and resource allocation decisions and assess progress in the TVET sector. It has addressed needs for improving 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” (ex., 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 of such objectives is to ensure access to TVET of the people with lower levels of general education particularly those who accomplished primary school and reached Grades 6-8. Special attention is also proposed 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 are 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 be 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 their availability, frequency of data collection, relevance and reliability.

Data were collected from the public and private providers, NGOs, associations of trade bodies, joint-venture projects and other agencies. Data from journals, statistical booklets, and electronic publications were 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 cover 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 on the FDI and the local investments are viewed as important indicators of the future demand for skilled workforce
- migration outflows of skilled workers.

The data on the supply of TVET involved:

- enrolment and the seat capacity in the public and private TVET providers and NGOs per type of institutions, TVET programmes and awards
- data on the supply of specialist training courses provided by the line ministries for relevant industries
- 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 of the Certificate and Diploma holders,
- 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 were 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 were available on the numbers of applicants; the data on enrolments barely reflect the demand for training programmes<sup>1</sup>.

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 are 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.<sup>2</sup> Its findings indicated that companies in this country do not have a conventional definition of the levels of skills and therefore the terms "skilled and high-skilled worker" cannot be used in the 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

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<sup>1</sup> Training institutions in Dhaka and Chittagong experience the 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.

<sup>2</sup> 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

aggravated further when the supply of TVET graduates significantly exceeds the demand for them from the economy.

The allocation of the demand for the educated and skilled workforce across industries can be advised through the comparative assessment of the productivity growth and employment growth in different industry subsectors. It can be assumed that the sub-sectors with fast growing productivity and exports were to increase inputs from the 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. These data are regularly published and available on the Websites. The Census of Manufacturing Industries (CMI) is also regularly conducted by BBS.

This study benefitted from the data 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 incorporate demands for information from the TVET planners and decision makers.

The flows of skilled and educated migrants remain an important factor in the 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 the district level show how significant the 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 have been found on the skilled returnees who contribute to the supply of 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 the 19 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 are however collected by the individual institutions and can be obtained from them.

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

Hundreds of large and small NGOs offer skills training through short courses. The NGO providing skills training do maintain the record of their activities but these data are 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.

Industrial companies are considerable suppliers of semi-skilled and skilled workforce through the 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.<sup>3</sup> Employers prefer recruiting apprentices and helpers who develop skills through work practice rather than formal training. The workers also prefer to learn a trade while working because of immediate earning and employment opportunity. Since the establishment surveys are conducted rarely and do not collect data on workers learning trades on the job, this source of data is not currently available and needs to be explored further.

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

#### *Findings on the data regarding the supply matching demand in TVET*

Although it was possible to conceptually outline a sub-set of data enabling to make judgment on the degree of a match between the demand and supply in TVET, most of specific data such as the employment status of the 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 the regular basis. Importantly, the lack of industrial practices of qualifying the jobs as “semiskilled, skilled or high-skilled” or the “technician-level jobs” in Bangladesh prevented from making direct comparisons between the demand for and supply of graduates for the individual trades. New data collection mechanisms are required for producing and processing such data.

The data which are currently lacking on TVET involve:

- actual numbers of youth dropping from general schooling after the Grade 5 who are willing to acquire skills, and the data on progression from different types and levels of education to formal TVET programs,
- potential district-level and upozila-level demand for skills development courses,
- regional and district level mapping of TVET program, 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.

#### **Principle recommendations**

- A system of TVET-related data needs to be developed in Bangladesh given the massive training supply and growing demand from youth. Collecting and processing

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<sup>3</sup> R. Rahman, A Mondal, R.Islam, op.cit.

data is expensive and such cost is only justifiable if the data are able to inform certain policy and management decisions in TVET.

- 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. Availability of accurate data on the industries' occupational and qualifications structures would allow improving the information base for TVET decisions. The establishment surveys should be more frequent enabling to assess the growth and structural changes in the labour force of the formal economy and its needs for the educated and skilled workforce. The demand for skilled workforce in specialist trades may also be studied by the associations of trade bodies.
- The supply side 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 communities in order to impart skills for income-generating activities. As long as the TVET system is not going to be involved in the massive provision of skills training for income generating, the data on the demand for and supply of such programmes could be collected once in several years.
- Developing the information enabling 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.
- The information on enrolments and graduations of individual TVET providers should be made publicly available allowing for benchmarking of performance. A dedicated website may be set up 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. Private training providers should be encouraged to collect the above data and supply them to the relevant agencies.
- The TVET data should be collected, stored and processed, by a dedicated and competent organization set up for this purpose (sort of the 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. These data would be used by the policy-makers, TVET administrators and national planners enabling to

coordinate, monitor and evaluate the progress in TVET. These data would also be indispensable for making investment and funding decisions on TVET.

- The work on the data system will continue enabling to expand the data entries, eliminate duplications 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.
- 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 maintaining the supply-demand equilibrium between the TVET and the labour markets.
- 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. Apparently, the types of data, and methods of collecting those on the demand for and supply of skills in the informal economy are different and will be addressed later.
- 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 to make decisions on balancing the supply with demand and allow for coordination of providers.
- The role of the economic sectors through the Association of trade bodies and other industry bodies needs to be encouraged enabling to improve assessments of the demand for skilled and educated graduates and improve linkages to the TVET provision.

## 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 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).

The 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 the primary school but failed to complete the Grade 8. Such data are 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
<b>Total</b>	<b>82,868</b>	<b>80,401</b>	<b>17,952</b>	<b>16,226</b>

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
<b>Total</b>	<b>17,386</b>	<b>18,500</b>	<b>7,338</b>	<b>7,399</b>

Source: BBS

Some estimate of the number of drop-outs from the primary school 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<sup>+</sup> and qualify for the formal TVET Programmes. About 30,00,000 pupils reach Grade 5 annually. Therefore about (30,00,000 - 8,00,000) = 22,00,000 students drop out annually after completion of Grade 5. **(to be checked?? with the writer)**

The data on this large group of youth who although have not reached Grade 8 but may be able and willing to undertake vocational training, are 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 the 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. These data which are currently unavailable, are suggested to 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 are not currently available on the numbers of graduates applying for TVET courses with different levels of general education. The data actually collected inform only on the numbers of students enrolled in the TVET programmes that does not reflect the demand for TVET.

**Table D06: Annual school graduations from Grades 8-11 applying for formal TVET programmes (by location and gender)<sup>4</sup>**

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

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 applicants per *type of the TVET programmes* (or *per individual TVET programme*) in which young people wish to enroll. These data are not currently available. These data would allow estimating 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 4. 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 the overseas market. Some joint-venture training institutions established in collaboration with a foreign employer also see the applicant-to training place ratios being 3-4:1. The institutions at the district level may also have more applicants than the seating capacity. The evening courses and short courses attract more students in Dhaka and Chittagong but in other districts there are fewer applicants than the 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)**

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>					
	<b>Total for polytechnics public</b>					
2	Polytechnics (private)					
	<i>Per programme</i>					
	<b>Total for polytechnics private</b>					
3	Technical colleges					
	<b>Total for technical colleges</b>					
4	Commercial colleges					

	<b>Total for commercial colleges</b>				
5	Technical Training Centres (TTCs) (Govt.)				
	<b>Total for TTCs</b>				
6					
7	<b>Specialist TVET institutions of the line ministries</b>				

#### 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 size of the economy, sectoral distribution of employment, share of skilled workers in the different industries, etc. **Table D08** presents 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 2001-2002<sup>5</sup>**

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.

<sup>5</sup> The growth rate of the public sector establishments is currently negative

**Table D09: Labour force by gender and residence**

	Labour Force Surveys (Millions)		
	1999-2000	2002-03	2005-06
<b>Total labour force</b>	40.7	46.3	49.5
Male	32.2	36.0	37.3
Female	8.5	10.3	12.1
<b>Total urban labour force</b>	9.2	11.3	11.7
Male	7.1	8.6	8.9
Female	2.1	2.7	2.8
<b>Total rural labour force</b>	31.5	35.0	37.8
Male	25.1	27.4	28.4
Female	6.4	7.6	9.3
<b>Total youth in labour force (aged 15-29)</b>	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.**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
<b>Bangladesh</b>						
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
<b>Urban</b>						
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
<b>Rural</b>						
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
<b>All ages</b>	<b>84.0</b>	<b>23.1</b>	<b>88.7</b>	<b>25.7</b>	<b>88.0</b>	<b>29.8</b>

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.<sup>6</sup> 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** informs 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 are available on the under-employment by the educational and vocational qualification.

**Table D11: Underemployment Rates by Residence and Gender<sup>7</sup>**

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
<b>Underemployment %</b>	<b>34.0</b>	<b>23.1</b>	<b>72.3</b>	<b>26.7</b>	<b>16.0</b>	<b>71.8</b>	<b>36.4</b>	<b>25.3</b>	<b>75.9</b>

Source: *Labor Force Survey 2002-03*

### 1.4.3 Data on sectoral distribution of employment in the economy

<sup>6</sup> 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.

<sup>7</sup> 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.

**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.<sup>8</sup>

**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 are presented in the **Table D13**.

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

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	5.8	7.7	5.1	5.54	9.54	4.29

<sup>8</sup> R. Rahman, A Mondal, R.Islam, op.cit.

Area and Sector	LFS 2002-03			LFS 2005-06		
	Bangladesh	Urban	Rural	Bangladesh	Urban	Rural
service & others						

Source : LFS

#### 1.4.4 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**.

**Table D14: Employed Persons by Broad Sector of Employment and Occupational Group**

Major Occupation	Informal economy	Individual, Private Formal economy	Private Formal Sector	Government Sector	Total (%)	Total 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
<b>Total (%)</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>44,332</b>	<b>22.2</b>
<b>Total number (Million)</b>	<b>35,078</b>	<b>4,688</b>	<b>2,680</b>	<b>1,877</b>	<b>44,332</b>	-	-
<b>Total (%)</b>	<b>79.1</b>	<b>10.6</b>	<b>6.1</b>	<b>4.2</b>	<b>100.0</b>	-	-
<b>% Female</b>	<b>22.3</b>	<b>20.4</b>	<b>28.7</b>	<b>13.9</b>	<b>22.2</b>	-	-

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

<b>Total</b>	100	100	100	100	100	100
<b>Professional and Technical</b>	3.9	6.4	3.1	4.71	9.49	3.23
<b>Administrative Managerial</b>	0.2	0.6	0.1	0.47	1.09	0.28
<b>Clerical</b>	3.4	7.2	2.2	2.14	5.05	1.24
<b>Sales</b>	14.8	22.4	12.4	14.17	21.23	11.98
<b>Services</b>	4.5	6.7	3.7	5.82	10.5	4.37
<b>Agriculture</b>	51.4	26.6	59.2	48.41	15.53	58.62
<b>Forestry, Fishery, Production and Transportation</b>	21.9	30.0	19.3	24.27	37.11	20.28

Table D16 shows the total number of employees in the manufacturing industries, their employees **on the shop floor (to check)????** as well as shares of unskilled workers.

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

Periods	Number of establishments	All employees	Operational staff <sup>9</sup>	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

#### 1.4.5 Data on the employment and qualification structures by economic 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**.

**Table D17: Employed Labor Force by Educational Level**

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
	<b>Agriculture</b>	<b>22,931</b>	<b>59.2</b>	<b>16.8</b>	<b>9.8</b>	<b>7.6</b>	<b>5.3</b>	<b>1.1</b>	<b>0.2</b>

<sup>9</sup> What is a definition of the operational staff as compared to all employees???

<b>A</b>	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>B</b>	<b>Industry</b>	<b>6,062</b>	<b>47.4</b>	<b>20.7</b>	<b>12.9</b>	<b>7.7</b>	<b>7.0</b>	<b>3.9</b>	<b>0.4</b>
	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
<b>C</b>	<b>Services</b>	<b>15,329</b>	<b>39.0</b>	<b>15.9</b>	<b>11.5</b>	<b>10.2</b>	<b>14.3</b>	<b>8.7</b>	<b>0.4</b>
	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
<b>Total</b>	<b>44,322</b>	<b>50.6</b>	<b>17.0</b>	<b>10.8</b>	<b>8.5</b>	<b>8.7</b>	<b>4.1</b>	<b>0.3</b>	

Source: *Labor Force Survey 2002-03*

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

N	Sub-sectors	Employment (thousands)	Qualification structures				
			Managers and professionals	Technicians	Clerks	High-skilled and skilled workers	Semi-skilled workers
	<b>Manufacturing Industries</b>						
	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						
	<b>OTHER INDUSTRIES</b>						
	Construction						
	Communication						
	Transport, etc.						
	<b>Services</b>						
	Education						
	Health, etc.						
	Financial services, Banking, and Insurance, etc.						

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

The existing occupations in the industry sectors/sub-sectors at the technician and high-skilled and skilled worker levels along as with the job titles should be identified enabling to adjust the TVET supply to such structures. It is apparent that many positions could be occupied by the 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 collecting data on the actual numbers of diploma and certificate holders employed in the economy.

The data on the occupational structures at the polytechnic diploma level and skilled worker level need to be collected as suggested in **Table D19** and **Table D20**. These data would be able to indicate a true demand for the educated and skilled workforce in the different industries and at different qualification levels. These data would also allow assessing 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 jobs	Currently filled by staff without a Diploma
	MANUFACTURING INDUSTRIES			
	Wearing apparel	Apparel designer	100	
		Shift manager	400	
		Maintenance technician/garments	300	
		Accountant	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			
	<b>OTHER INDUSTRIES</b>			
	Construction			
	Communication			
	Transport , etc.			
	<b>SERVICES</b>			
	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
	<b>INDUSTRIES</b>			
	Wearing apparel	Sewing machine operator Cloth cutter	5,000 1,000	12 months on the job training
	Drugs & pharmaceutical	Fitter	500	NSS2/Fitter or 2 years of on the job training
	Mfg. of textile	Maintenance of looms Weaver Quality controller	500 10,000	

	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			
	Paper & paper products			
	Fabricated metal products			
	Plastic products			
	<b>OTHER INDUSTRIES</b>			
	Construction			
	Communication			
	Transport			
	<b>SERVICES</b>			
	Education			
	Health, etc.			
	Finance, Banking, and Insurance			

#### 1.4.7. 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. Basically these trades 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 the 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
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.	Platters	1800
9.	Certified Welders	600
10.	Ship's plan Readers	48
11.	Lofters	36
12.	Electricians	180
13.	Safety Trained Personnel	540
14.	Quality Control Engineers	72
15.	Shipwrights	120
16.	Marine Mechanics	144
17.	Pipe Fitters	120
18.	Crane Operators	72
19.	Machine Operators	216
20.	Painters	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 the in-flows of high capital investments will also most likely demand for more and higher educated and skilled employees. Some data on the FDI inflows by industry-sector are presented in **Table D22** (see also **Annex 1: Major local investments in industry sectors**)

**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
<b>Total</b>	<b>845.3</b>	<b>792.5</b>

Source: Bangladesh Bank Enterprise Survey, 2007

The employment growth and the productivity growth in the industry sectors can be advised by the data from the **Table D23**. The industries with high employment growth and high productivity growth (expressed as “gross value addition (GVA)”) may obviously 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 industries	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 are not collected in the country<sup>10</sup>.

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,

<sup>10</sup> During one of the interviews with associations of companies and trade bodies, it was said that the demand for replacement because of sickness, etc. was to be about 0.5 to 1% in the old companies and below 0.5% in the new companies. The worker turnover which is found to be common in the garment industry, textiles, and IT sector, 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.

garments, etc. have been upgrading their technologies vary rapidly. The introduction of CNC machines in manufacturing industries has become common. 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 workers<sup>11</sup>**

N	Sub-sector	Technician and skilled worker qualifications	Numbers per qualification employed	Average exits each year	Replacement need (%)
	Wearing apparel	Shift manager Apparel designer Cloth cutter	200 1000 5000	20 50 500	10% 5% 10%
	Drugs & pharmaceutical	Fitter	500		
	Mfg. of textile	Maintenance technician/ looms Weaver Cutter Quality controller	500 10,000		
	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				

<sup>11</sup> Replacement demand is caused by the employees quitting industry, changing a trade, retirements, sickness, mortality, migration, etc.

	chemicals				
	Iron & steel basic industry				
	Leather & leather products				
	Beverage industries				
	Paper & paper products				
	Fabricated metal products				
	Plastic products				
	Construction				
	Transport, etc.				
	<b>SERVICES</b>				
	Education				
	Health, etc.				
	Financial services, Banking, and Insurance				

#### 4. Demand for skilled workforce from overseas markets<sup>12</sup>

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 of the demand for skilled workers, see **Annex 2: Forecasted demand in the overseas employment market**). 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**.

<sup>12</sup> 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.

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

SL.	Job category	Total	SL.	Job category	total
01.	Production Operator	41,545	20.	Tiles Fixer	3,294
02.	Driver	56,177	21.	Fitter	3,281
03.	Factory Worker	36,452	22.	Gardener	3,279
04.	Mason	21,643	23.	Barber	3,161
05.	Carpenter	18,887	14.	Cleaner	2,976
06.	Operator	18,614	25.	Pipe Fitter	2,674
07.	Electrician/ Electrical Technician	14,311	26.	Heavy vehicle driver	2,500
08.	Machine Operator	12,669	27.	Kitchen Worker	2,105
09.	Helper	12,053	28.	Rod binder	2,021
10.	Tailor	11,742	29.	Restaurant worker	1,732
11.	Welder/Fabricator	10,898	30.	Machinist	1,625
12.	Printer	10,884	31.	Guide	1,494
13.	Steel Fixer	8,043	32.	Architect	1,332
14.	Plumber	6,456	33.	Workshop employee	1,279
15.	Production Worker	6,190	34.	Laundry employee	1,128
16.	Technician	4,842	35.	Shuttering Carpenter	1,081
17.	Plasterer	3,823	36.	Embroiderer	1,049
18.	Mechanic	3,395	37.		
19.	Shepherd	3,323	38.		

Source: BMET

The data in **Table D26** do not indicate the qualification levels of the occupations which are in demand overseas. It is proposed therefore to collect data according to the format suggested in the **Table D27**.

**Table D27: Occupational and qualification structures of people going overseas**

	Occupational groups of migrants	Holders of TVET awards (Degree/Diploma/National Certificate, License, etc.)	Migrants without awards (indicate years of experience in the occupation)
<b>1</b>	<b>Professional jobs</b>		
	Doctors Engineers Architects University/college teachers Accountants Computer Programmers Computer operators Pharmacists Transport Engineers Etc.		
<b>2</b>	<b>Technician jobs</b>		

	Paramedics Nurses Foremen Duct Technician Etc.		
<b>3</b>	<b>Skilled worker jobs</b>		
	Mechanics Welders Masons, Carpenters Electricians Painters Cooks Drivers Plumbers Tailors Tile fixers Machine operators Rod binders Scaffolders Fitters Pipe fitters Gas operator Sales personnel, etc. Farmers Gardeners Clerks		
<b>4</b>	<b>Semi-skilled workers</b>		
	Cleaners House keepers General workers Laborers		
<b>5</b>	<b>Unskilled workers</b>		

## CHAPTER II: DATA ON THE SUPPLY SIDE IN TVET

Structure of TVET in Bangladesh is presented in the **Annex 3: Structure of the education and TVET**.

### 1. Structure of TVET providers and their training capacity

### 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) <sup>13</sup>	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 <sup>nd</sup> shift 8,370
2	Polytechnic Institutes Monotechnic Institutes	42 5	4-year Diploma programs	19,057 including a 2 <sup>nd</sup> shift
3	Technical Teacher Training Center (TTTC) in Dhaka	1	Instructor training programs mostly for polytechnics	240
4	Vocational Teacher Training Institute (VTI)	1	Teacher training for TSCs	????

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 Narayanganj and 11 Technical Training Centers (TTCs). 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

<sup>13</sup> *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.

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, Tiles Fixer, Knitting and Linking operator, Mechanical Fitter, Sewing Machine Maintenance, Mid-level supervisor in 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 girls<sup>14</sup>.

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*

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)**

<sup>14</sup> There is a provision of stipend for female TVET students which helped to increase enrollment of girls.

Type of Institution	No. of Instit.	Location		Enrolment	
		Urban	Rural	Total	Female
Polytechnics (Govt.)	27	??	??	17826	1618
Polytechnics (Non Govt.)	07			0697	1778
Technical Colleges (Govt.)	61			9519	1771
Commercial Colleges (Govt.)	16			2682	700
Glass & Ceramic Institute (Govt.)	1			171	17
Graphic Arts Institute (Govt.)	1			255	70
Survey Institutes (Govt.)	7			557	11
Technical Training Centres (TTCs) (Govt.)	12			1967	172
Textile Institutes (Govt.)	6			856	0
Textile Vocational Centres (Govt.)	28			5007	581
Agricultural Training Institutes (Govt.)	12			7102	1102
Agricultural Training Institutes (Non Govt.)	17			7785	120
SSC (Voc) (Non govt.) Programmes???	1771			05158	20280
Programmes?? (Programmes?)	1180			70025	71200
<b>Total</b>	<b>7728</b>			<b>211226</b>	<b>67567</b>

Source: BTEB

**Question: why in the above table there are only 13 TTCs while it is said on this page that there are 37 of them?**

**See also the two last lines on SSCs and HSCs (are they institutions?)**

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

**Table S04: Institutions offering technical education programmes??? (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 Resources<sup>8</sup>

#### 1.4 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
<b>Trade and Certificate Level</b>			
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
<b>Diploma Level</b>			
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 (**since only 11 TTCs are shown in the table below ???**) 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
	<b>Total :</b>	<b>970</b>	<b>970</b>	<b>940</b>	<b>880</b>	<b>790</b>	<b>580</b>	<b>750</b>	<b>600</b>	<b>640</b>	<b>680</b>	<b>780</b>

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		8,370	-	8,370

Awards	Type of institution	Name of the course	Number of institutions	Seating Capacity		
				General shift	Second shift	Total
		(Vocational)				
	Vocational Teachers Training Institution	Certificate -in – Vocational Education	01	120	-	120
	Vocational Teachers Training Institute	Diploma -in – Vocational Education		120	-	120
Diploma	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
	Technical Teachers Training College	B.Sc. in Technical Education		40	-	40
Degree	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
	<b>Total</b>			<b>113</b>	<b>26,960</b>	<b>14,550</b>

Source: BTEB

**Table S09: Number and intake on all TVET programmes accredited by the BTEB (Position as on 20 May 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 Education	1-year	1		1		120		120	
2	Diploma-in- Vocational Education	1-year	1		1		80		80	
3	Diploma-in- Engineering	4-year	47	130	177	73	19,056	16,416	35,472	46
4	Diploma-in- Engineering (Glass & Ceramics)	4-year	1		1		120		120	
5	Diploma-in- Engineering (Printing)	4-year	1		1		80		80	
6	Diploma-in- Engineering	4-year	2		2		120		120	
7	Diploma-in- Marine Engineering	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 Engineering	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 Technology	3-year	-	49	49			1,740	1,740	
			<b>74</b>	<b>288</b>	<b>362</b>	<b>80</b>	<b>22,546</b>	<b>27,486</b>	<b>50,032</b>	<b>55</b>
<b>B Certificate Programme</b>										
14	Certificate-in- Vocational Education	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		118,890	118,890	100
17	HSC (Vocational.)	2-year	64		64		16,680		16,680	
18	SSC (Vocational).	2-year	89	1,707	1,796	95	12,600	108,800	121,400	90
19	SSC (Voc-Textile)	2-year	40		40		3,600		3,600	
20	National Skill Standard. II & III	1-year	-	6	6			660	660	
21	Certificate-in-Health Technology	1-year	-	77	77	100		1,980	1,980	100
22	Certificate in Secretarial Science	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	
	<b>Sub-Total</b>		<b>199</b>	<b>3,118</b>	<b>3,317</b>	<b>94</b>	<b>34,844</b>	<b>230,946</b>	<b>265,790</b>	<b>87</b>
<b>C Trade Level</b>										
25	National Skill Standard.- Basic	360- hour	8	75	83	90	500	3,640	4,140	88
26	Certificate in Computer Training	3/6-	3	472	475	99	120	13,880	14,000	99
	<b>Sub-Total</b>		<b>11</b>	<b>547</b>	<b>558</b>	<b>98</b>	<b>620</b>	<b>17,520</b>	<b>18,140</b>	<b>97</b>
	<b>TOTAL</b>		<b>284</b>	<b>3,953</b>	<b>4,237</b>	<b>93</b>	<b>58,010</b>	<b>275,952</b>	<b>333,962</b>	<b>83</b>

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

**Table S10: Intake capacity of TVET programmes trade-wise (what kind of programmes are those: Certificate/Diploma or non-formal programmes???) How does Table S10 link to Table S 11?**

Name of Trades	Intake Capacity
Agro based Food	810
Audio Video System	6,735
Automotive	1,605
Building Maintenance	9,090
Carpentry	630

Name of Trades	Intake Capacity
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

The data on the Certificate level programmes (Provided by Technical School and Colleges, TVI and Non Govt. School and Madrasa) are presented in the **Table S11**. **(first, there is no data in this table. Second, what is the link between Table S10 and S11??**

**Table S11: Certificate level courses (S.S.C and HSC Vocational)<sup>15</sup>**

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

<sup>15</sup> 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).

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 and 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 (In addition to the division into “government/non-government” it could be useful to indicate the types of institutions delivering each type of these awards.**

Sl No	Programme	Number of Institutions		Total	Seating capacity
		Government	Non-Government		
1	Diploma-In-Technical Education	1	-	1	176
2	Diploma-In-Vocational Education	1	-	1	176
3	Diploma-In-Engineering	43	112	155	17700
4	Diploma-In-Agriculture	12	49	61	7610
5	Diploma-In-Textile Engineering	6	12	18	1218
6	Diploma-In-Survey	2	-	2	264
7	Diploma-In-Printing	1	-	1	55
8	Diploma-In-Glass and Ceramic	1	-	1	88
9	Diploma-In-Forestry (Three Year)	1	-	1	55
10	Diploma-In-Marin Engineering	1	-	1	22
11	Diploma-In-Ship Building Engineering	1	-	1	22

SI No	Programme	Number of Institutions		Total	Seating capacity
		Government	Non-Government		
1 2 .	Diploma-In- Air Craft Maintenance Engineering • Avionics • Aeronautics	1 1	- -	1 1	22 22
1 3 .	Diploma-In-Commerce	-	7	7	616
1 4 .	H S C ( Management)	-	1288	1288	90,275
1 5 .	Certificate-In-Vocational Education	1	-	1	176
1 6 .	Certificate-In-Vocational Education (Non-Formal)	1	-	1	176
1 7 .	H S C (Vocational)	64	-	64	2875
1 8 .	SSC (Vocational)	64	1473	-	1,11,900
1 9 .	SSC (Vocational) TTC	17	-	17	5,000
2 0 .	SSC (Vocational) Textile	40	-	40	3,600
2 1 .	National Skill Basic Standard (360 Hour)	8	80	88	4,340
2 2 .	National Skill Standard-2 and 3	-	6	6	660
2 3 .	Non-Government Computer Training Institute	-	455	455	15,480
2 4 .	Certificate-In- Secretarial Science Health Technology and Services	1	-	1	22
2 5 .	Diploma-In-Medical Ultrasound Technology	-	9	9	220
2 6 .	Diploma-In-Dental Technology	-	10	10	220

SI No	Programme	Number of Institutions		Total	Seating capacity
		Government	Non-Government		
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	-	-	-	-
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

SI No	Programme	Number of Institutions		Total	Seating capacity
		Government	Non-Government		
4 3 .	Certificate-In-Medical Marketing and Management Technology	-	5	5	110
4 4 .	Certificate-In-Paramedical Technology	-	31	31	704
4 5 .	Certificate-In-Integrated Medicine Technology	-	1	1	22

Source : BTEB

There is 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 programmes by private providers (position on 20 May 2007)**

SI No.	Courses Title	Duration	No. of Institutions	Intake Capacity
<b>A</b>	<b>Diploma Programme</b>			
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
			<b>288</b>	<b>27,486</b>
<b>B</b>	<b>Certificate Programme</b>			
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
		<b>Sub-Total</b>	<b>3,118</b>	<b>230,946</b>
<b>C</b>	<b>Trade Level</b>			
11	National Skill Standard.- Basic	360- hour	75	3,640
12	Certificate in Computer Training	3/6-month	472	13,880
		<b>Sub-Total</b>	<b>547</b>	<b>17,520</b>
		<b>TOTAL</b>	<b>3,953</b>	<b>275,952</b>

Source: BTEB

### 1.3 Formal training courses delivered by Madrashes

Madrashes (**what are they?**) 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 Madrashes. Some 100 vocational centers will be set-up in Madrashes each with 2 classrooms and 2 workshops.

**Table S14** summarized data on the numbers of Madrashes involved in the provision of vocational courses (Dakhil). **Please describe what Dakhil means. Table S14 is unclear: is first line about numbers of madrashes delivering Dakhil and the second line about enrolments in dakhil? Then there are very few students in each course**

**Table S14: Enrolment in vocational programs in Madrashes**

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 (*please check if this correct??*) **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

SL. No.	Group	2004			2005		
		Appeared	Passed	% of Pass	Appeared	Passed	% of Pass
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 programmes**

Sl.	Award	Trades	Enrolment	Passed	% of success
1.	Diploma-In-Engineering 4 Years (2005)	Civil	1,220	612	
		Mechanical	752	451	
		Electrical	980	462	
		Power	538	306	
		Electronic	572	353	
		Computer	1,308	521	
		Architecture	96	56	
		Automobile	56	31	
		RAC	49	41	
		Comical	35	32	
		Food	36	32	

Sl.	Award	Trades	Enrolment	Passed	% of success
		Civil (Wood)	18	18	
		Ceramic	22	22	
		Glass	17	17	
		Printing (Graphic Re-Pro :)	26	24	
		Printing (Offset)	32	22	
		Surveying	138	50	
3.	Diploma-In-Engineering 4 Years (2006)	Civil	587	245	
		Mechanical	260	115	
		Electrical	479	237	
		Power	226	140	
		Electronic	199	108	
		Computer	702	228	
		Architecture	37	10	
		Automobile	24	21	
		RAC	08	05	
		Comical	02	02	
		Food	05	05	
		Printing (Graphic Re-Pro :)	02	00	
		Printing (Offset)	10	04	
		Surveying	82	25	
5.	Diploma-In-Textile Engineering 4 Years (2005)	1 <sup>st</sup> Year	1,735	683	
6.	Diploma-In-Textile Engineering 4 Years (2005)	2 <sup>nd</sup> Year	568	277	
7.	Diploma-In-Textile Engineering 4 Years (2005)	3 <sup>rd</sup> Year	336	243	
15.	Diploma-In-Technical Education	Civil	09	07	
		Electrical and Electronic	09	09	
		Mechanical	07	05	
16.	Diploma-In-Technical Education	Civil	10	04	
		Electrical and Electronic	17	13	
		Mechanical	09	04	
17.	Diploma-In-Commerce	Secretarial Science	299	144	
		Accountant	321	172	
18.	Certificate-In-Computer Training	Desktop Publication	210	200	
		Computer Application	9,230	9,225	
19.	Certificate-In-Computer Training	Objected Oriented Programming	831	823	
		Database Programming	7,631	7627	
20	HSC (Business Management)	Computer Operation	12,956	8,262	
		Secretarial Science	9,928	5,314	

Sl.	Award	Trades	Enrolment	Passed	% of success
		Accountant	2,580	1,650	
		Banking	581	376	
		Entrepreneurship Development	580	367	
21.	SSC (Management)	Computer Operation	17,993	10,306	
		Secretarial Science	14,396	7,383	
		Accountant	4,170	2,685	
		Banking	1,097	742	
		Entrepreneurship Development	1,588	907	
22.	Certificate-In-Health Technology	Paramedical	29	29	
		Medical Ultrasound	82	82	
23.	SSC (Vocational) 9 <sup>th</sup> Class	Dares Making and Tailoring	14,941	8,243	
		General Electrical Work	16,405	8,790	
		Building Maintenance	9,498	4,875	
		General Mechanic	8,568	4,333	
		Audio Video System	6,094	2,942	
		Computer Operation	7,340	3,893	
		Food Processing and Preservation	4,396	2,365	
		Agro based food	846	439	
		Automotive	2,316	909	
		Weaving	556	390	
		Drafting (Maniacal)	214	117	
		Ship Culture and Birding	47	35	
		Livestock Raring and Farming	90	59	
		Ceramic	34	09	
		Fish Culture and Birding	485	205	
		Architectural Drafting with AutoCAD	171	88	
		Food and Vegetable Cultivation	450	249	
		Poultry Raring and Farming	719	277	
		Drafting (Civil)	607	288	
		Dry Printing and Finishing	685	508	
		Machine Tools Operation	1,099	427	
		Welding Works	1,535	603	
		Civil Construction	2,563	1,319	
		Farm Machineries	2,084	749	
		Plumbing and Pipe Fitting	141	52	
		Joinery and Cabinet Making	22	02	
		Electrical Machine Maintenance	437	252	
		Refrigeration and Air conditioning	1727	770	
		Electrical Maintenance			

Sl.	Award	Trades	Enrolment	Passed	% of success
		Works	322	140	
		Welding & Fabrication	264	73	
		Wood Working	455	177	
		Radio and Television	335	175	
24.	SSC (Vocational) Final	Dares Making and Tailoring	8,755	5,437	
		General Electrical Work	9,535	5,943	
		Building Maintenance	5,772	3,462	
		General Mechanic	5,398	3,220	
		Audio Video System	224	145	
		Computer Operation	3,623	2,240	
		Food Processing and Preservation	2,612	1,552	
		Agro based food	3,429	2,026	
		Automotive	978	598	
		Weaving	449	325	
		Drafting (Maniacal)	130	97	
		Livestock Raring and Farming	34	21	
		Ceramic	16	07	
		Fish Culture and Birding	133	87	
		Architectural Drafting with AutoCAD	110	87	
		Food and Vegetable Cultivation	210	133	
		Poultry Raring and Farming	278	171	
		Drafting (Civil)	350	213	
		Dry Printing and Finishing	502	409	
		Machine Tools Operation	523	356	
		Welding Works	752	398	
		Civil Construction	1,178	684	
		Farm Machinerics	832	545	
		Plumbing and Pipe Fitting	103	56	
		Joinery and Cabinet Making	16	11	
		Electrical Machine Maintenance	353	274	
		Refrigeration and Air conditioning	825	553	
		Electrical Maintenance Works	10	04	
		Welding & Fabrication	113	72	
		Wood Working	252	158	
		Ship Culture and Birding	26	15	

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 H.S.C 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) ??? which are advised by the in Madrasha Education Board (check if correct). Why there is a need for such a Board in addition to BTEB?

**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
<b>525752</b>	<b>149424</b>	<b>28.42</b>	<b>538295</b>	<b>145867</b>	<b>27.09</b>	<b>501507</b>	<b>192713</b>	<b>38.43</b>

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

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

**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; These 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 programme<sup>16</sup>

#### 3.2 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**.<sup>17</sup> Data on TVET teachers (instructors) are 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.

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

Type of Institution	No. of	Teachers			
		Inst	Total		
Polytechnic Institute (Govt.)	27	1180	166		
Polytechnic Institute (Non Govt.)	07	465			
Technical College (Govt.)	61	707	75		
Commercial College (Govt.)	16	68			
Glass & Ceramic Institute (Govt.)	1	10	1		

<sup>16</sup> 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.

<sup>17</sup> In the public TVET more than 25% of the teacher posts remain vacant. The teacher/ student ratio in certain institutions has reached 1:20.

Type of Institution	No. of	Teachers			
	Inst	Total	Female		
Graphic Arts Institute (Govt.)	1	16	0		
Survey Institute (Govt.)	2	17	1		
Technical Training Centre (TTCs) (Govt.)	12	250	60		
Textile Institute (Govt.)	6	15	2		
Textile Vocational Centre (Govt.)	28	221	26		
Agricultural Training Institute (Govt.)	12	112	5		
Agricultural Training Institute (Non Govt.)	17	150	18		
SSC (Voc) (Non Govt)??	1224	7511	1860		
HSC (B. Management) (Non Govt)??	1180	6120	075		
<b>Total</b>	<b>2728</b>	<b>17185</b>	<b>2208</b>		

Source: BTEB

**Table S23** supplies data on the grading of teaching staff in the TVET system. **(The last column needs to be filled in if data are available)**

**Table S23: Instructors in TVET Institutions**

Sl.	Level of TVET	Name of the post	Total	Women
1	Polytechnic Institute (20)	Chief Instructor (Tech)	91	
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	
9		Chief Instructor (Non tech)	18	
10		Instructor (Tech)	339	
11		Instructor (Non tech)	95	
12		Junior Instructor (Tech)	339	
13		Junior Instructor (Non Tech)	95	
14	Women Polytechnic (3)	Chief Instructor (Tech)	12	
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)	1043	
21		Junior Instructor (trade and general subjects)	558	
22	Technical training Centers (Rev. budget)	Chief Instructor	110	
23		Senior Instructor	150	

Sl.	Level of TVET	Name of the post	Total	Women
24		Instructor	400	
25	Technical training Centers (Dev. budget)	Chief Instructor	160	
26		Senior Instructor	320	
27		Instructor	120	
28	Bangladesh Institute of Marine Technology	Senior Instructor	13	
29		Instructor	27	
30		Workshop Superintendent	3	

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** (there are overall 37 government polytechnics and 97 private, etc. see the data in *the second table below*. Why in the Table S24 there are only a portion of these institutions covered? If no full data are available, it should be said “that data are based on a sample”)

Sl.	Level of TVET	Name of the post	Total	Women
1	Polytechnic Institute (20)	Principal	20	
2		Vice Principal	20	
3	Polytechnic Institute (18)	Principal	18	
4		Vice Principal	18	
5	Women Polytechnic (3)	Principal	3	
6		Vice Principal	3	
7	Technical School & College	Principal	64	
8	Technical training Centers (Rev. budget)	Principal	11	
9		Vice Principal	11	
10	Technical training Centers (Dev. budget)	Principal	26	
11		Vice Principal	26	
12	Bangladesh Institute of Marine Technology	Principal	1	
13		Vice Principal	1	

Source : DTE

Type of Institution	No. of	Principals and other managerial staff in TVET		
	Inst	Total	Female	
Polytechnic Institute (Govt.)	37			

Type of Institution	No. of	Principals and other managerial staff in TVET			
		Inset	Total		
Polytechnic Institute (Non Govt)	07				
Technical College (Govt)	64				
Commercial College (Govt)	16				
Glass & Ceramic Institute (Govt)	1				
Graphic Arts Institute (Govt)	1				
Survey Institute (Govt)	2				
Technical Training Centre (TTCs) (Govt)	12				
Textile Institute (Govt)	6				
Textile Vocational Centre (Govt)	28				
Agricultural Training Institute (Govt)	12				
Agricultural Training Institute (Non	47				
SSC (Voc) (Non govt)??	1224				
HSC (B. Management) (Non Govt)??	1180				
<b>Total</b>	<b>2778</b>				

Source: BTEB

**Table S25: Student/teacher ratios (is it for public institutions only???) (are such data available for the TTCs?)**

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

#### 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. **(Any gross data available??)**

*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*

*Specialist programmes of other ministries*

- *Ministry of Local Government, Rural Development and Cooperatives (LGRD)* runs the course leading to the Diploma in Engineering in Surveying in the institution affiliated with BTEB
- *Ministry of Environment and Forests* runs Diploma programmes in Engineering in Forestry in one institution and in Engineering in Forestry (in-service) in the two institutions affiliated with BTEB.
- *Ministry of Social Welfare* organizes vocational courses in the Orphanages and Corrective Centers. This ministry has the training facility for physically retarded and the handicapped peoples.
- *Ministry of Shipping*, through three marine training schools, trains seamen, inland and sea-going personnel.
- *Ministry of Energy and Mineral Resources* provides training in house-wiring for the rural electrification program.
- *Ministry of Defense* runs Diploma-in-Engineering in two institutions affiliated with BTEB. It has training facilities in Bangladesh Machine Tools Factory (BMTF).
- *Ministry of Agriculture* runs a Diploma course in Agriculture in 13 institutions with the intake capacity of 2,400 annually. BTEB has designed and conducted the Diploma distance courses for more than 20,000 in-service block supervisors.
- *Department of Social Services (DSS)* is a department under the Ministry of Social Welfare. During 2005, DSS implemented 20 training courses in sewing, livestock rearing, crop production, fish culture, knitting, electronics, refrigeration, garment and computer. Average course duration was 12.36 weeks with some 155 participants in each course.
- *Bangladesh Rural Development Board (BRDB)* is a training provider at the Upazila level in livestock rearing, crop production, fish culture, sewing and integrated farming.
- *Department of Livestock (DLS)* conducts training courses on livestock rearing and integrated farming.
- *Department of Fisheries (DoF)* organizes training programs on fish culture to various stakeholders.

- *Bangladesh Power Development Board*, through three specialized training centers (in Ashuganj, Ghorasal, and Khulna), four regional training centers (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.
- *Bangladesh Railway* offers skill upgrading program for its technical staff. It operates four diesel locomotive training centers in Dhaka, Chittagong, Parbatipur and Lalmonirhat.
- *Bangladesh Jute Mills Corporation* has four training centers with a yearly training capacity of some 2,600. The duration of courses is 1-6 weeks.
- *Bangladesh Chemical Industries Corporation* provides training through the Central Fertilizer Training Institute (CFTI) in Ghorashal for technical personnel of the existing and planned fertilizer factories in the country. The CFTI trains 250 persons annually. This is the only recognized training institution specializing in the process industries and particularly in fertilizer industry. It can train workers to the level of NSS-I, as well as supervisors and first-line managers for process industries. The Training Institute for Chemical Industries (TICI) at Palash, Narshingdi runs programmes, as indicated in **Table S28**.

**Table S27: 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)*

- *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 1,00,000 trainees annually.
- *Training facilities in the Hill districts* involve 6 institutions providing technical education for SSC, HSC levels and diploma courses. These institutions are: Technical Training Centre at Rangamati, Khagrachhari and Bandarban, Swedish Technical Institute at Kaptai, Textile Vocational Training center at Rangamati, and Vocational Training Institute at Khagrachhari
- A broad range of agencies are involved in the provision of specialist programmes for the fast developing marine occupations. A summary of such TVET provision is presented in **Table S28**.

(Could the above text be presented in some sort of a table??)

**Table S28: 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)	
	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	

SL	Ministry/Department/Institution (YOE) and Courses	Duration	Seat Capacity
	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
		Engineering	2 years
		Sub Total	56
ii)	Institution	Seamen's Training Centre (Year of establishment : 1952)	
	Courses	Fresher	4-6 months
		Refresher	4-6 months
		Sub Total :	512
B	Department	Inland Water Transport Authority (IWTA)	
i)	Institution	Deck Personal Training Centre (DPTC)	
	Courses	Deck Cadet	1 year
		Refresher	3 months
		Sub Total :	125
ii)	Institution	Marine Fisheries Academy	
	Courses	Nautical	
		Engineering	2 years
		Marine Fisheries	2 years
		Sub Total :	135

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

## 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 supervised by the Department of Women Affairs**

Name of Institution	Location	Training Courses	Duration of training	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 (each year in two batches since 1986)
Begum Rokeya Training Centre	Chattrapur, Mymensingh.	Agro-based Training	-----	200

Name of Institution	Location	Training Courses	Duration of training	Total trainees per year
Computer Training Centre	Head Office at Eskaton	Computer application Graphics and Design Web page Design	Different types of duration	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 rearing, 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 & Vocational Training Centre	Dinajpur,	Different Vocational Training	Ended in 2005	-
Women Handicrafts & Agriculture Training Centre	Rajshahi	Sewing, Livestock Fishery, Dairy, Horticulture, Basic Computer, Garments, Vegetable & 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 are no comprehensive data available on training facilities of numerous NGOs operating in the country<sup>18</sup>. Some data on the numbers of NGOs run training centres are given in **Table**

<sup>18</sup> 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. The NGOs are generally providing training on not-profit basis.

**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.<sup>14</sup>

**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

**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

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
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 NGO 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**<sup>19</sup>.

**Table S34: Training programmes of BRAC**

Name of trade	Total output	Female
Poultry and Livestock	23,378	12,238

<sup>19</sup> 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.

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, Pisciculture	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 welding<sup>20</sup>. However, no systematic data are collected on such a provision.

**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

<sup>20</sup> The study also indicated that most of private training institutions are operating with shortage of required level of equipment and qualified instructors.

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
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 work force (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. **(Please compare here with the ILO data collected through comparative study on productivity)**

### 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 unions<sup>21</sup>.

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

### 6.3 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 Skills Development Center (CSDC) is the employer-led institution and is a role model of industry-government cooperation (**what does it do?**). The Dhaka Chamber of Commerce and Industry (DCCI) has established **logistics training facilities???**.

Bangladesh Association of International Recruiting Agencies (BAIRA) has training facilities. The member recruiting agencies have their training centers to provide some refresher training for the selected candidates for overseas market<sup>22</sup>. Presently about 50 recruiting agencies have their own training centers but only 10-15 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 centers 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.

<sup>21</sup> 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.

<sup>22</sup> Government has made it mandatory for the recruiting agencies concerned with overseas employment to have training centers of their own as a condition for renewing licenses.

Duration of courses spans 3-6 months. Annual output at these training centers is about 30,000-50,000 a year.

**Could this information be somehow structured as a table?**

## **7. Number of skilled workers returning from overseas employment**

**This Section should provide information on the numbers and occupational/skills structures of workers returning from overseas, per year. These data are an important part of the supply-demand dimensions for Bangladesh labour /training markets.**

## **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 markets 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 the only type of TVET – related data which 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 (1 and 2) in each major occupation. Collecting such data on semi-skilled workers or jobs with low qualification requirements is not worthwhile because of the particularly high labour turnover 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 per major skilled trade would be rather useful.

The data on the supply side per trade from both public and private providers are 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 that skilled workers will be employed as technicians.

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)<sup>23</sup>**

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

<sup>23</sup> Industrial Training Institutes of India: The Efficiency Study Report. ILO, New Delhi; ILO, Geneva. 2004, 95p

## 2. Data on employability and skills utilization by TVET graduates

### *Data available in Bangladesh*

Some data have 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 tends 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 make 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, a graduate from a six- month trade training course needs to wait for the employment offer for only a few months (**Reference to the source of data required???**)<sup>24</sup>.

A recent study on the employability of graduates was carried out by the World Bank which 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
<b>Total</b>	<b>7.3</b>	<b>1.3</b>	<b>44.7</b>	<b>46.8</b>

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

<sup>24</sup>

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 some other study conducted by BTEB, 40% of graduates (**graduates from which courses???**) were in local employment, 10-15%-foreign employment, 30% in self-employment, 10% continued studying, other s (some 5-10%)- were perhaps, unemployed.

Some overall estimates suggest that the employment rates for TVET graduates within one year after the course completion ranged from 30% to 50%. (**what reference???**)<sup>25</sup>

#### *Experience of other countries*

Some 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**).

The data on the type of employment in the trades different from those in which training had been provided, still may not allow to assess 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.

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**.<sup>26</sup> 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 to the formal TVET.

**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

<sup>25</sup>

<sup>26</sup> Survey of employability of vocational graduates in Egypt. Draft report. Skills and Employability Department, ILO, Geneva, 2006

30%	10%	12%	14%	34%
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**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 programmes.

### 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 these 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 do not allow assessing unemployment in the individual trades/qualification levels.

**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
<b>Number (000)</b>									
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
<b>Total</b>	<b>2002</b>	<b>1500</b>	<b>502</b>	<b>562</b>	<b>396</b>	<b>166</b>	<b>1440</b>	<b>1104</b>	<b>336</b>
<b>Unemployment Rate (%)</b>									
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

Level of Education	Bangladesh			Urban			Rural		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
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 the 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. They involve: Bdjobs.com, A1jobs.com, Linajobs.com and Chakri.com.bd. These sites, however, mainly cover professional and managerial positions. A few posts suitable for the TVET graduates may also be found on these sites. **Annex 5** provides a listing of job position 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

### Observations

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

#### *Availability of data*

- the TVET-related data are 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 the 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 the employment overseas. Such data are available since 1976 and updated annually.
- DYD and DWA publish data on their training programs involving the student intake and graduations for different courses. This data is available annually and published regularly.
- The data on proprietary TVET providers are not collected in an organized manner. The only data on this sector are 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.
- The data on TVET providers, courses, enrolment capacity, institutions, student intake, and graduations are also published by the departments like BMET, DTE, BTEB, DYD, Department of Textile, BANBEIS, BBS, etc. These data are reliable but not published regularly. The data on student employment status may be also available in the individual institutions.
- The training NGOs maintain their own data on courses. As these courses cover specific groups of their beneficiaries, these data are not publicly available.
- No data on the demand for TVET graduates from the economy are available as such demand has not been 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. Census of Manufacturing Industries (CMI) 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 flows, local and foreign investment which are relevant for understanding of the demand for TVET graduates. Such data are available on the website and updated regularly.

#### *The types of data to be generated*

The data which are currently lacking on TVET involve:

- actual numbers of youth dropping from general schooling after the Grade 5 who are willing to acquire skills, and the data on progression from different types and levels of education to formal TVET programs,
- potential district-level and upozila-level demand for skills development courses,
- regional and district level mapping of TVET program, 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
  - a) 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) that mostly allows informing the policy decisions such as whether to expand or reduce enrolments in SSC (Voc), etc. No evidence however has been found that the currently collected data on TVET programmes have been used in such decisions.
- since such data are not *occupation-specific*, they do not permit to make assessments on the situation in the training markets regarding particular trade areas and individual trades;
- the industry demands for skilled workforce are commonly expressed in terms of occupations and qualifications, for this reason the above types of data are unable to connect to the demands of industry
- such data don't trace 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.

### **Recommendations:**

#### *Data collection*

- A system of TVET-related data needs to be developed in Bangladesh given the massive training supply and growing demand from youth. Collecting and processing

data is expensive and such cost is only justifiable if the data are able to inform certain policy and management decisions in TVET.

- 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. Availability of accurate data on the industries' occupational and qualifications structures would allow improving the information base for TVET decisions. The establishment surveys should be more frequent enabling to assess the growth and structural changes in the labour force of the formal economy and its needs for the educated and skilled workforce. The demand for skilled workforce in specialist trades may also be studied by the associations of trade bodies.
- The supply side 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 communities in order to impart skills for income-generating activities. As long as the TVET system is not going to be involved in the massive provision of skills training for income generating, the data on the demand for and supply of such programmes could be collected once in several years.
- Developing the information enabling 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.
- The information on enrolments and graduations of individual TVET providers should be made publicly available allowing for benchmarking of performance. A dedicated website may be set up 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. Private training providers should be encouraged to collect the above data and supply them to the relevant agencies.
- The TVET data should be collected, stored and processed, by a dedicated and competent organization set up for this purpose (sort of the 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. These data would be used by the policy-makers, TVET administrators and national planners enabling to

coordinate, monitor and evaluate the progress in TVET. These data would also be indispensable for making investment and funding decisions on TVET.

- The work on the data system will continue enabling to expand the data entries, eliminate duplications 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.
- 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 maintaining the supply-demand equilibrium between the TVET and the labour markets.
- 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. Apparently, the types of data, and methods of collecting those on the demand for and supply of skills in the informal economy are different and will be addressed later.
- 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 to make decisions on balancing the supply with demand and allow for coordination of providers.
- The role of the economic sectors through the Association of trade bodies and other industry bodies needs to be encouraged enabling to improve assessments of the demand for skilled and educated graduates and improve linkages to the TVET provision.

## ANNEXES

### **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 privatisation	
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, 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, Operators of drilling rigs.	
Oman	IT Professionals, Agriculture, Fishing, Metalworking, 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, Tile Fixers.	
Libya	Plumbers, Carpenters, Pipe fitters, Electricians, Painters, Welders, Rod binders, Steel fixers, 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						Diploma (Engineering)					Diploma	Fazil



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 Marketing Executive Instructor	Diploma in Electronics Engineering
3.	Engineer	Diploma in

SL.#	Position	Qualification
	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	Mechanical Engineering
4.	Engineer Manager (Technical ) Diploma Engineer CAD Operator Chief Engineer Assistant Professor Assistant Engineer Project Manager Implementation Engineer Support Engineer Solutions Engineer Instructor	Diploma in Electrical Engineering

SL.#	Position	Qualification
	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 Software Engineer Hardware Engineer Instructor	Diploma in Computer Engineering

SL.#	Position	Qualification
	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 Yarn Dyeing Technician Fabric Dyeing Technician Sr. Lecturer	Textile Engineering

SL.#	Position	Qualification
	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 Press Mechanic Plumber Electric Line man	SSC Trade Course
38.	Draftsman	Diploma in

SL.#	Position	Qualification
		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
4.	Directorate of Technical Education	Shiksha Bhaban, Abdul Gani Road, Dhaka	Mr. Syed Nurun Nabi, Assistant Director
5.	Directorate of Technical	Shiksha Bhaban, Abdul Gani	Mr. Mustafizur

SL#	Name of the institution	Address	Contact Person
	Education	Road, Dhaka	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 Technical Training Center	Bangla-German Technical 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	S. R. Tower, 105 Uttara,	Md. Mojibar
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	Fashion Technology (BIFT)	Dhaka-1230	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 <sup>th</sup> Floor), 13/A Sonargaon Road, Dhaka-1000, Bangladesh	
4.	BKMEA	Planners Tower (12 <sup>th</sup> 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, Upzila 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 Technology Bogra (IITB)	Sherpur Road, Colony, Bogra	051-64550
16.	Bangladesh Institute of	Mofiz paglar More, Sharpur	Md.Shahabudin

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

3 1.	Chittagong Technical College and School	129, Muradpur, Asian Highway, Chittagong	K. M. M. Musa 651954, 650377,
3 2.	Shamoly Ideal Polytechnic Institute	House- 9/3, Road-01, Samoly, Mohammadpur, Dhaka	Fozlul Haque 8130146
3 3.	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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