BANGLADESH SKILLS SNAPSHOT 2012

National Skills Survey Phase 1

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development and Cooperation SDC

Funded by the Swiss Agency for Development and Cooperation SDC and managed by the ILO TVET Reform Project.

Bangladesh Skills Snapshot 2012

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1. FOREWORD

The National Skills Survey (NSS) Phase 1 was commissioned on behalf of the National Skills Development Council Secretariat funded by the Swiss Development Corporation (SDC).

The NSS was funded by SDC as part of its support to the National Skills Development Council (NSDC) to:

- Coordinate data collection, analyse supply demand gaps and develop a **national summary of the supply and demand for skills;**
- Work with key industry bodies to collect **demand side data** on skills and occupations in demand in the medium and long term;
- Work with key government agencies to collect **supply side data** on the nature and scope of skills supply in the medium and long term; and
- **Build the capacity of key organisations** with key data roles for the future operation of the National Skills Data System.

Whilst the report herein addresses each of these four objectives, the following key issues should be noted;

Delayed establishment of NSDC Secretariat: The NSDC Secretariat was not physically established until 2012, and at the time of this report, is developing its capacity for skills supply and demand data collection and analysis. This NSS Phase 1 was thus a driving force in beginning the processes within the Secretariat, but there were some significant delays during the process.

Capacity within contributing organizations: Industry Skills Councils (ISCs) and some key industry representative groups are, with few exceptions, embryonic. This survey also provided the impetus for many ISCs to not only coordinate their collective skills demands but to recognize and codify these demands. Success in developing the ISCs for this purpose has been moderate, and strenuous efforts continue to develop industry's leading role in skill development in Bangladesh. Attempts were made to involve the nine existing ISCs in providing supply data, resulting in the survey concentrating on those nine industry sectors.

Lack of initial data: Whilst key government agencies do collect more extensive data on skills supply, much of it is incomplete and incompatible, resulting in a less than comprehensive picture of skills supply being available. Due in part to the NSS Phase 1, that government is taking a more coordinated and homogeneous approach to recording skills supply in the country.

Whilst the limited capacity of agencies to collect and analyse data was recognised before the NSS Phase 1, the survey has provided the impetus for agencies, especially the NSDC Secretariat and the Bangladesh Technical Education Board, to begin implementing new, more comprehensive, data systems.

Overall there were difficulties faced by the NSS Phase 1 process. However, any limitations to the size and scope of the survey are easily outweighed by the development of the agencies involved and the beginning of a more accurate picture of skills supply and demand in Bangladesh. Improved information and data of this type will support further development of an industry led TVET system based on industry competency standards and the new National Qualifications Framework to specifically target actual skills in demand. Along with this, the use of ISCO (and BISCO) occupational codes will assist TVET practitioners to focus on employment outcomes for learners and more closely align individual courses and qualifications with specific occupations and jobs. All these factors will be reflected in the new TVET data collection and analysis systems currently being developed. More importantly, the use of NTVQF, recognized competency standards and employment codes will help industry to identify and codify their own needs in a standard way and in a way that government can respond to their immediate and future needs.

FOREWORD

The report itself consists of two separate reports which were produced through two parallel processes:

The first process was the extensive and time consuming process of developing and engaging ISCs to participate in the survey and the on-going collection and data analysis process. As stated above, this process was limited to the nine sectors capable of participating and was also limited in the ability of those ISCs to accurately recognise their sector's own skill needs. It interrogated existing government data knowing that some of this data was incomplete. It is therefore a "bottom-to-top" mainly qualitative approach that has moderate immediate validity but in the long term, will provide the most useful and valid information on skills demand.

The second process took an econometric approach, taking statistical data where it was available and drawing empirical conclusions based on logical assumptions. Whilst this approach is more traditional, conclusions were cross-referenced with the results of the ISC led approach above to validate the data where possible and thus overcome previous industry criticisms of the econometric approach as being disconnected with the realities of the workplace.

In conclusion, whilst the shortcomings of this first NSS must be acknowledged, it should also be recognised as an important first step by the NSDC to better understand the dynamics and key issues with the supply and demand of skills in Bangladesh.

Dr. Kamal Abdul Naser Chowdhury
Co-Chair, Executive Council,
National Skills Development Council (NSDC)
Secretary, Ministry of Education

Salauddin Kasem Khan
Co-Chair, Executive Council,
National Skills Development Council (NSDC)
Chairman, Chittagong Skills Development Centre

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6. LIST OF ACRONYMS

BANBEIS	Bangladesh Bureau of Educational Information and Statistics
BBS	Bangladesh Bureau of Statistics
BITAC	Bangladesh Industrial Technical Assistance Centre
BM	Business Management
BMET	Bureau of Manpower Employment and Training
BNFE	Bureau of Non-Formal Education
BRAC	Bangladesh Rural Advancement Committee
BSCO	Bangladesh Standard Classification of Occupations
BTEB	Bangladesh Technical Education Board
CAMPE	Campaign for Popular Education
CBT&A	Competency Based Training and Assessment
CEO	Chief Executive Officer
CMES	Centre for Mass Education in Science
DAM	Dhaka Ahsania Mission
DTE	Directorate of Technical Education
DYD	Department of Youth Development
ECNSDC	Executive Committee of NSDC
FGD	Focus Group Discussion
FIVDB	Friends in Village Development Bangladesh
GDP	Gross Domestic Product
HSC (Voc)	Higher Secondary School Certificate (Vocational)
ILO	International Labor Organization
ISC	Industry Skills Council
ISCO	International Standard Classification of Occupation
ISSQ	Industry Sector Standards and Qualifications
IT	Information Technology
KSA	Kingdom of Saudi Arabia
MAWTS	Mirpur Agricultural Workshop and Training School
MIS	Management Information System
MOE	Ministry of Education
MOEWO	Ministry of Expatriates' Welfare & Overseas Employment
MOLE	Ministry of Labor and Employment
NGO	Non Government Organization
NHTTI	National Hotel and Tourism Training Institute
NSDC	National Skills Development Council
NSDP	National Skills Development Policy

LIST OF ACRONYMS

NSS	National Skills Survey
NTVQF	National Technical Vocational Qualification Framework
RMG	Ready Made Garments
RPL	Recognition of Prior Learning
SDC	Swiss Development Corporation
SIT	Science and Information Technology
SOS	Save Our Soul
SQA	Skills Quality Assurance
SSC (Voc)	Secondary School Certificate (Vocational)
TMSS	Thengamara Mohila Somobay Samity
TOR	Terms of Reference
TSC	Technical School and College
TTC	Technical Training Centre
TTTC	Technical Teachers Training College
TVET	Technical Vocational Education and Training
UAE	United Arab Emirates
UCEP	Under Privilege Children's Educational Programmes
VTI	Vocational Training Institute
VTTI	Vocational Teachers Training Institute
WB	World Bank

7. EXECUTIVE SUMMARY

The scope of the National Skill Survey Phase 1 covers the collection and analysis of (1) demand data from nine selected industry sectors, (2) manpower export data and (3) supply data from formal and non-formal public and private Technical and Vocational Education and Training (TVET) providers. The nine selected sectors of industries/organizations are; agro-food, construction, informal skills, information technology, leather and leather goods, light engineering, ready-made garments, tourism and hospitality and water transport/ship building.

The primary quantitative demand data was collected from 1164 skilled workers in 206 selected industries/organizations for 35 selected priority jobs. The primary supply data was collected from thirteen selected non-formal (four public and nine private/non-government) TVET providers. The secondary quantitative supply data (concerning manpower export) was collected from the Bangladesh Technical Education Board (BTEB) for all formal TVET providers and supported by data from the Bureau of Manpower, Employment and Training (BMET). The qualitative data was collected through the organization of two-step focus group discussions with representatives from the selected industries/organizations and also through two larger discussion meetings with formal and non-formal TVET providers and BMET staff.

Analysis of responses from industries and manpower export data

Of the industries/organizations consulted, 50% focused on providing products and services to domestic markets, 26% focused on international markets and 24% focused on both international and domestic markets. The ownership of these industries/organizations was private (96%), public (2%) and another arrangement (2%).

The three fastest growing sectors among the nine consulted were information technology, ready-made garments and water transport/ship building. The demand projection of the nine industry sectors up to 2015 with a benchmark of 2012 are presented in Annex 3.

Of the skilled workers consulted, 20% had achieved twelve or more years of education. Skilled workers in the IT sector had achieved the highest levels of education with 90% completing twelve or more years of formal learning. Workers in the construction sector had achieved the lowest levels of education with only 1% completing twelve years or more of formal learning.

Approximately 80% of the workforce had not received any training and among the 20% that had, only 11% had received training which was classifiable under the NTVQF. The self-classification of the employed workforce under the guidance of the data collection team and the designated industry representatives into NTVQF levels however, resulted in 5% of workers reporting that their levels of competency were below Level 1, 15% reporting at Level 1, 32% reporting at Level 2, 36% reporting at Level 3, 6% reporting at Level 4 and 6% reporting at Level 5.

Considering the levels of training which the workers had reportedly received, the results from this self-classification exercise seemed not to match the real situation. Reasons for this could be workers not fully understanding the classification process and/or not nderstanding the NTVQF levels.

The self-classifications of the employed workforce have been assigned provisional Bangladesh Standard Classification of Occupations (BSCO) numbers ready for entry into the National Skills Development Council (NSDC) data cell under NTVQF levels 1–6, along with the provision for Pre-Vocational Levels 1 and 2. The findings on education levels achieved, training received, experience acquired and workers' self-classification under NTVQF levels are presented in nnexes 7-11.

A similar lack of understanding was expressed by Industry Skills Council representatives when preparing skilled workforce demand data classified into NTVQF levels using job descriptions, job specifications and personnel specifications. Representatives strongly recommended that the capacity of the industries/organizations and the capacity of TVET

providers needed to be strengthened in order to accurately report demand figures and to plan and implement training in line with NTVQF levels.

According to BMET data, remittances earned US$12.165 billion in 2011, which amounted to approximately 13% of Bangladesh's Gross Domestic Product (GDP). This was a very significant contribution for which national direct investment/expenditure was almost negligible. Manpower export trends in 2011 compared to 2007 went up in the case of Singapore (by 27%) and up in the case of the United Arab Emirates (24%). Manpower exports for Malaysia came down to 0.27% and also went down for the Kingdom of Saudi Arabia in 2010 (to 3.45%) but rose again in 2011 (to 20%).

A discussion meeting was organized with BMET to obtain their expertise on how to bring the demand and the supply of Bangladesh's skilled workforce closer, specifically in the context of exporting manpower. BMET strongly recommended strengthening the capacity of training providers to bring training programmers in line with NTVQF levels. They also recommended strengthening the capacity of ISCs/industries to accurately report skilled workforce demands according to the NTVQF levels, using job descriptions, job specifications and personnel specifications.

Analysis of the TVET providers' data

The enrollment capacity in all the 17 formal BTEB-affiliated courses in the public and private institutions n 2011 was 447,430, which was approximately 4% of the age group of the population. As per the UNESCO Global Monitoring Report 2011, this proportion was comparatively 7% in India, 41% in Indonesia, 43% in Malaysia and 43% in Australia. Actual enrollment in BTEB-affiliated courses in 2011 was 343,822, of which 277,933 were in private institutions. This resulted in 103,608 unused seats in the BTEB-affiliated courses in 2012 which was 23% of the capacity. The passing out rate in 2007 for the male candidates was 59%. This Figure rose in 2011 to 79% however, which was an increase of 20% in five years. Passing graduates were awarded diplomas and certificates; however these were not in line with the NTVQF.

TVET institutions under the Directorate of Technical Education (DTE) are in crisis in terms of teachers, not only in numbers but also in terms of their competence for delivering skills. Both the Director General of DTE and the Chairman of BTEB along with the Chief Executive Officer of the NSDC Secretariat have strongly recommended capacity strengthening of staff to enable the planning and implementing of training programmers in line with NTVQF levels.

Total enrollment in the four public and nine private/NGO TVET providers was 499,397 in 2011. Distribution of the total enrollment was public 15% and private 85%.The non-formal providers' self-classification of their courses in terms of NTVQF levels was 35% below Level 1, 51% at Level 1, 13% at Level 2, 0.5% at Level 3 and 0.5% at Level 5. It is recommended that the NSDC along with the BTEB must put in intense efforts to ensure that the non-formal public and private/NGO providers conform to NTVQF levels.

Unclassified workforce demand supply gap

The total employed workforce in the 206 industries in 2011 was 121,016. Of this, 55% were male and 45% were female. Considering that the BTEB formal courses reported female students comprising just 23% of enrolment however, the male and female gap in the supply side is significant. These statistics need the urgent attention of TVET policy planners and implementers.

The unclassified demand data projection against the 14,466 employed workers in 2012 based on 35 identified jobs from 206 industries was 10,661 in 2013, 6,695 in 2014 and 8,653 in 2015. The average growth rate of demand for the unclassified workforce with 2012 as the baseline for the nine sectors was 74% in 2013, 46% in 2014 and 60% in 2015.

According to the BBS Labour Force Survey 2010, the total employment in the six broad sectors of the national economy was 14.5 million in 2010. The distribution was as follows; mining and engineering

EXECUTIVE SUMMARY

was 0.109 million (0.7%), manufacturing was 6.731 million (47%), electrical gas and water supply was 0.123 million (0.7%), construction was 2.617 million (18%), hotel and restaurant was 0.832 million (6%) and transport and communication was 4.037 million (28%).

The average national growth rate of employment including these six broad sectors from 2005 to 2010 was 3.32% with 6.34% in manufacturing, 13% in construction, 4% in hotels and restaurants and 3.81% in transportation and communication. Demand of the unclassified workforce, estimated on the annual growth rates, should be approximately 0.9 million in the six broad sectors of the economy and accordingly the national demand for employment in the country should be 1.6 million.

As per BMET data, the total manpower exported in 2011 was 568,062 with 402 categories of jobs, however there was overlapping of similar categories. Of this manpower, 0.2% were classified as professional, 40% were classified as skilled, 5% were classified as semi-skilled and 55% were classified as less skilled. Using these trends, the total unclassified skilled workforce demand including export of manpower was approximately 2.168 million per year.

On the supply side, in the BTEB-affiliated formal courses the enrolment capacity was 447,430 and in the non-formal non-affiliated courses by the 13 public and private/NGO providers, enrolment capacity was 499,397. As per these figures, the gross estimate of the total certifiable enrolment capacity of the non-formal non-affiliated courses was approximately 500,000.

The total enrolment in the formal and non-formal courses was approximately 946,827 students, which does not include the numbers receiving pre-service/normal training provided by some industries. With the average passing rate of the BTEB standing at approximately 75%, the optimum number of graduates both from formal and non-formal courses with unclassified skills is stimated to be approximately 0.71 million.

These results demonstrate that with these trends in the employment growth rate of the unclassified workforce, the gap between demand and supply is estimated at approximately 1.458 million each year. These are numbers which can be used by both industries/organizations and TVET providers for planning purposes.

Recommendations

The summary above highlights some very important recommendations of the industries/organizations and the formal TVET providers. These warrant establishment and operationalising of a demand supply analysis and gap analysis mechanism at the national level. This should be initiated by the National Skills Development Council and fully staffed by professionals who possess high levels of competence in demand supply analysis and gap analysis. A mechanism and series of sequential steps for how these analyses can be carried out have been developed and added in Section 7 of this report. The mechanism describes how to establish the demand supply ratio of the skilled workforce at present and also how to project ratios up to 2030.

Based on the findings of the analysis and synthesis, a series of key recommendations have been presented for the consideration of industries, concerned government ministries and departments and public/private/formal/non-formal TVET providers.

SKILLS SNAPSHOT PART I: SUPPLY AND DEMAND

8. SUPPLY AND DEMAND

8.1 SCOPE OF THE SURVEY

The design of the survey consisted of two main components:

- Skilled workforce demand by the industries
- Supply of graduates as skilled workers by TVET providers

The survey focused on identifying the extent of the gap between the demand for skilled workers and the supply of suitable graduates from TVET institutions. This was done in order to recommend appropriate remedial measures to be taken to reduce this gap. The demand side had two components; the demand of local industries and the demand of the global employment market. The supply of TVET graduates comes normally from two routes; formal public and private providers affiliated with BTEB and the non-formal public and private providers. The other important source to supplement supply is the industries themselves taking proactive measures to update and upgrade the employed workforce.

In the process of deciding the scope/size of industry demand, considerable consultation was conducted with the ILO, ISC representatives and other stakeholders concerned. This resulted in the selection of nine key industry sectors. The ISCs of these nine sectors (created by and working with the ILO's TVET Reform Project and Swiss Development Corporation's Skill Development Project) were then asked to work with the survey team to provide insight into skill demands. The sectors chosen were: agro-food, construction, informal skills, information technology, leather and leather goods, light engineering, ready-made garments, tourism and hospitality and water transport/ship building.

In consultation with the ISCs, a total of 35 priority jobs were selected from the nine sectors. The list of 35 jobs with skills matched to NTVQF Levels 1-5 was derived from Competency-Based Training and Assessment documents prepared by the ISCs and approved by the BTEB. These documents were very important in the design of this survey. A copy of the list of nine sectors and 35 jobs is provided in Annex 1.

Each of the NTVQF levels is dependent upon the job, with three components: job description, job specification and personnel specification. Each of the components is composed of a number of tasks/work units. A task/work unit is the smallest part that cannot be logically sub-divided and is measurable in terms of its elements. An occupation consists of a series of jobs with overlapping tasks/work units or a single job with a task/work unit. Understanding these concepts and their importance in the NTVQF is an essential precondition for the preparation of skilled workforce demand data by industry and for the preparation of the curriculum by TVET providers to produce graduates with skills and competences which match the needs of industries.

Demand side data for the global employment market was derived by the survey team mainly through reviewing man power export data and remittances from the period 2007-2011, obtained from BMET. BMET is the government agency which maintains manpower export data records.

Supply side data on the numbers of TVET graduates employed as skilled workers from public and private formal providers was collected from BTEB.

Supply side data on trained skilled workforce by the selected non-formal public and private non-affiliated providers was collected through a questionnaire and a discussion with them. The supplementary source for the supply of skilled workforce data from the industries' own training courses could not be used due to the non-responsiveness of the industries.

8.2 OBJECTIVES

The main purpose of the NSS Phase 1 was to examine the extent of the gap between the supply and the demand of skilled workers in Bangladesh and to establish a mechanism for minimizing this gap, both now and in the future. Consideration was given to the rapid growth of Bangladesh's working-age population.

The survey envisaged achieving the following specific objectives:

- Assess the demand of the skilled workforce from the selected sectors of the industries/organizations.
- Examine the supply of skilled/trained graduates by the public and private and formal and non-formal TVET providers.
- Identify the gap between the demand of skilled workforce from the industries and supply of trained graduates for employment by the TVET providers.
- Recommend a gap analysis mechanism and set of operationalization strategies for the present and the future changing pattern of demand supply ratio of skilled workforce.

8.3 METHODOLOGY

The scope of the NSS Phase 1 was decided in consultation with the representatives of ISCs, Bangladesh Employers Federation (BEF) and the NSDC Secretariat. It covered 35 prioritized jobs from the nine selected sectors with their skills content derived from the CBT&A documents approved by the BTEB. Skill content of the 35 jobs in the NTVQF levels is presented in Annex 2. The list of the 35 prioritized jobs was prepared through consultations mainly with ISC representatives. The primary and secondary quantitative data were collected from four sources and qualitative data collected through focus groups and discussion meetings.

The primary data was collected through sampling 206 industries by the ISCs and selected non-formal public and private/NGO non-affiliated providers of TVET courses of different durations ranging from two days up to more than one year. The secondary data was collected from the BTEB for all formal TVET courses and BMET for the manpower export data.

Organization of FGDs with ISC representatives from the nine sectors of industries generated qualitative data. The other source of the qualitative data collected through the organization of discussion meetings with formal and non-formal TVET providers.

8.4 ACTIVITIES

Main activities planned and implemented in the process of data collection, data analysis and synthesis of the findings leading to the preparation of the NSS report were:

- Collection and reading of the Acts, regulations and policies, relevant records, reports, orders and other relevant information;
- Identification of the priority sectors for collection of the demand data from the industries and the skilled workforce;
- Selection of the jobs and the skill contents from the BTEB approved CBT&A documents developed by the ISCs;
- Preparation of questionnaires for primary data collection and format for secondary data collection;
- Organization of training for the data collectors, industry representatives and research associates;
- collection of the demand data from the industries, organization of the FGDs with representative from the selected sectors, export market trend from BMET, supply data for the public and private providers from BTEB and supply data from the non-formal public and private providers; and
- Analysis of data and synthesis of the findings leading to preparation of the report.

8.5 DATA COLLECTION

The survey team selected and engaged four data collectors and one ISC representative from each of the nine sectors nominated by the chair of the ISCs. A total of nine research associates, one for each of the sectors were engaged to provide technical support in process of data collection from the industries. The list of research associates, ISC representatives and data collectors is presented in Annex 3.

A day-long training was organized in July 2012 for the data collectors, ISC representatives and research associates. The training session started with a presentation explaining the objectives of the NSS, details of the questionnaires and how the respondents should fill it in and other related issues of data collection. The questionnaire used for industry data collection is given in Annex 4. The presentation was followed by detailed discussion and question-answer and clarification of issues in this context. A data collection plan was discussed and agreed upon to complete the data collection within the period of 8-20 July 2012. The data collection from the industries was completed within the agreed date. The survey team prepared a plan and collected data from the four different sources using questionnaires and other formats as appropriate.

Primary data was collected using questionnaires from the two different sources in the following manner:

- 206 selected industry respondents and 1164 skilled workers from those selected industries through the nine ISC representatives along with 34 data collectors supported by nine research associates.
- 13 selected (4 public and 9 private/NGO) non-formal providers of TVET courses of different durations ranging from two days up to more than one year.

Secondary data was collected from:

- BTEB for all formal TVET courses
- BMET for the manpower export

Qualitative data was collected through the organization of:

- Three FGDs in Step 1 with the selected industry representatives from the nine selected sectors of industries/organizations and two FGDs in Step 2 with selected representatives from eight sectors of the industries.

Qualitative data have also been collected through the organization of two discussion meetings with the

- Director General DTE, CEO NSDC Secretariat and Chairman BTEB along with their senior officers
- Directors of the BMET mainly focusing the manpower export as well as skill training.

8.6 DATA ANALYSIS

The demand data collected from the nine sectors of the industries and BMET and supply data from the BTEB and non-formal TVET providers were thoroughly scrutinized and the appropriate data of the five sets selected for analysis.

Analysis of the five sets of data were carried out and presented in the sequence of:

a demand data from
- industries/organizations;
- FGD; and
- Manpower export data

b supply data from
- BTEB for formal TVET providers
- non-formal and non-affiliated TVET providers

8.7 DEMAND DATA FROM INDUSTRIES/ORGANIZATIONS

Data collected from the industries comprised of information about the industries/organizations, employed workforce and future projection for three years and employed workforce skill levels in the NTVQF.

Responses were received from 206 industries/organizations and their sector wise number and percentage distribution presented in Figure 6.1. Sector and job wise respondents are mapped geographically in Annex 5. Among the responding sectors, tourism and hospitality had the highest number (41) and the water transport/shipbuilding had the lowest (16).

A total of 1164 responses were received from employed skilled workers who graded themselves under the guidance of their supervisors and data collectors in the NTVQF levels. Their sector wise number and percentage distribution is presented in Figure 6.2. The sector with the highest number of skilled workers who responded was ready-made garments (254), the second was the construction sector (203) and the sector with the lowest number of respondents was the water transport/shipbuilding sector (82).

Sector	Industry respondent	Percentage
Agro Food	17	8.25
Construction	20	9.71
Informal Skills	22	10.68
Information Tecnology (IT)	27	13.11
Leather	20	9.71
Light Engineering	23	11.17
Ready Made Garments	20	9.71
Tourism and Hospitality	41	19.9
Water Transport / Shipbuilding	16	7.77
Total industries/organizations :	206	

Figure : 6.1

Sector	Workforce respondent	Percentage
Agro Food	83	7.13
Construction	203	17.44
Informal Skills	100	8.59
Information Tecnology (IT)	89	7.65
Leather	103	8.85
Light Engineering	95	8.16
Ready Made Garments	254	21.82
Tourism and Hospitality	155	13.32
Water Transport / Shipbuilding	82	7.04
Total respondents:	1164	

Figure : 6.2

Analysis of the responses of all nine sectors of the industries/organizations on the target/focus of their product and services revealed their distribution as international 26%, domestic 50% and both 24%, presented in Figure 6.3.

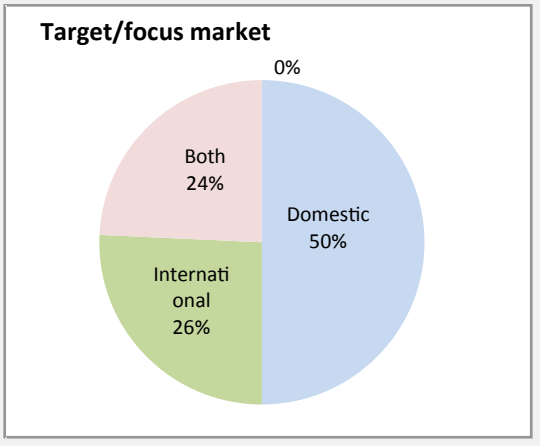


Figure : 6.3

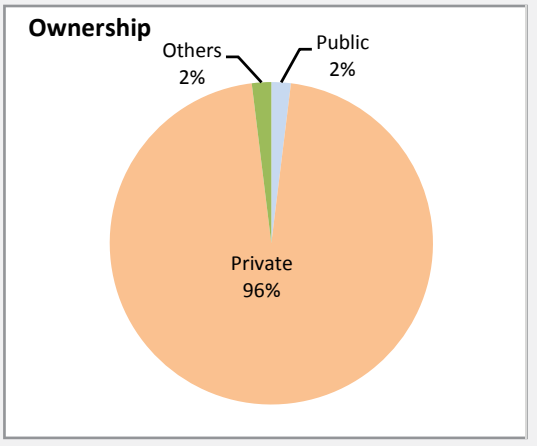


Figure : 6.4

Figure 6.4 presents the findings of the analysis of responses in the context of ownership of the 206 industries/organizations of the nine sectors of the industries.

96% of the industries/organizations had private ownership, 2% had public ownership and 2% had alternate ownership arrangements. This data, showing a significantly high percentage of private ownership of industries/organizations, represents the general pattern of the public and private ownership of the industries in Bangladesh.

Responses of the industries/organizations on the trends of present and future demand of the skilled workforce without skill level classification have been presented in Table 1. The ISC representatives during the discussion meetings expressed that they would need more time to provide data coded into the NTVQF skill level classification levels.

Projection of skilled workforce demand from ISCs

Sector	2012			2013			2014			2015		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Agro Food	4258	1928	6186	45	500	545	0	0	0	0	0	0
Construction	4729	30	4759	774	4	778	844	8	852	1466	7	1473
Informal Skills	5994	1340	7334	1148	350	1498	1061	346	1407	1110	306	1416
IT	2012	211	2223	343	78	421	398	132	530	619	181	800
Leather	4089	5702	9791	1719	2001	3720	363	497	860	477	684	1161
Light Engineering	112	1	113	53	6	59	65	12	77	79	10	89
RMG	2870	5172	8042	1604	1370	2974	890	876	1766	1051	830	1881
Tourism & Hospitality	323	82	405	11	0	11	0	0	0	0	0	0
Water Transport	1903	0	1903	655	0	655	1403	0	1403	1833	0	1833
Total	26290	14466	40756	6352	4309	10661	5024	1871	6895	6635	2018	8653

Table 1

Analysis of these responses with the 2012 employed skilled workforce as the base year, the demand projection showing male and female distribution for all nine sectors in average as a percentage from 2013-2015 and the future demand showing male and female distribution for the fastest growing three sectors is presented in Figure 6.5 (a, b, c, and d). Findings of the analysis on the projection of unclassified skilled workforce demand by the nine sectors for 2013-2015 are given in Annex 6. These are mere numbers of unclassified skilled workforce however, and cannot be used for demand supply analysis and gap-analysis.

As per the BBS Labour Force Survey 2010, the total employment in the six broad sectors of the national economy was 14.5 million in 2010 with the distribution of mining and engineering at 0.109 million (0.7%), manufacturing at 6.731 million (47%), electrical gas and water supply at 0.123 million (0.7%), construction at 2.617 million (18%), hotel and restaurants at 0.832 million (6%) and transport and communication at 4.037 million (28%). The average national growth rate of the employment including these six broad sectors from 2005 to 2010 was 3.32% with 6.34% in manufacturing, 13% in construction, 4% in hotel and restaurant and 3.81% in transportation and communication.

Projection of skilled workforce demand in percentage

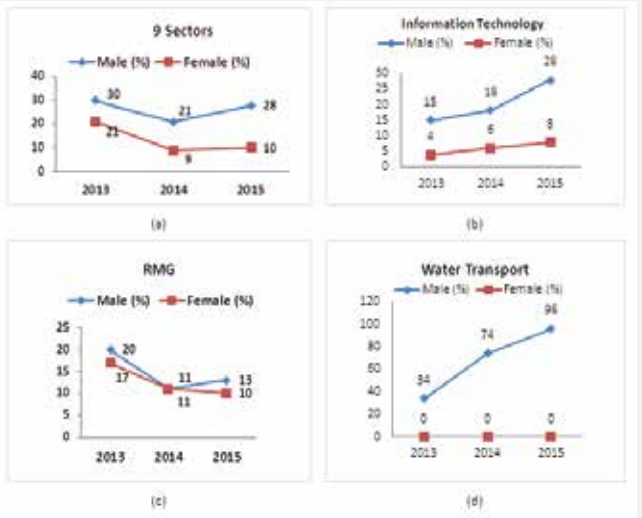


Figure : 6.5

8.7.1 EMPLOYED WORKFORCE BACKGROUND

Responses from 1164 employed skilled workers have been analyzed mainly focusing on education, training, experience and their self-classification in the NTVQF level with the guidance of the data collectors and their supervisors. Percentage distribution of the education level achieved, training received, experience acquired and their NTVQF levels self-classification along with their age and national ID have been analyzed. These types of detailed statistics about the skilled workforce when developed are not only an essential requirement for the industry and TVET providers but also the most important data for the present and future planning of the country.

The main purpose of initiating the self-classification in the NTVQF levels by the 1164 skilled workforce was to provide opportunities to them and to the ISCs to learn, understand and to start applying the NTVQF levels using the three components of jobs; job description, job specification and personnel specification. The three components are basic, necessary requirements for the recruitment, promotion, demotion, training, remuneration and productivity of the workforce. They are also the fundamental requirements for preparation of curriculum by TVET providers to produce graduates that meet industry needs.

8.7.2 EDUCATION LEVEL ACHIEVED

Figure 6.6 shows that among the 1164 responding workforce from the nine sectors, 2% do not have any education, 20% achieved above 12 years of education, 10% achieved 11-12 years, 20% achieved 9-10 years, 27% achieved 6-8 years and the remaining 21% achieved only 1-5 years. Comparison of the education level achieved by the workers in the nine sectors above 12 years shows information technology at the highest with 90%, the informal skills sector averaging 8% and the construction sector at the lowest with 1%.

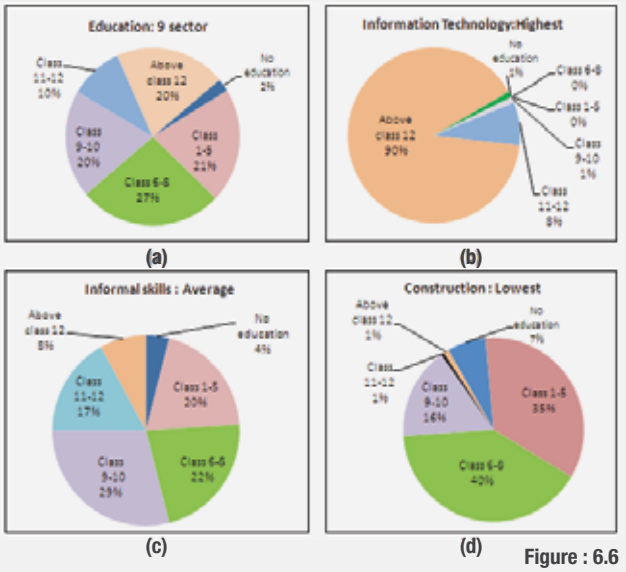


Figure : 6.6

Comparative analysis of the employed workforce education achievement in the nine sectors of the industries reveals that 50% of them are in the bracket of no education to eight years of schooling, 30% in the 9-12 years bracket and 20% in the above 12 years bracket.

The trends in the education achievement levels of the employed workers shows that certain sectors of industries require comparatively more education (e.g. information technology with 90% of workers completing more than twelve years of schooling) and certain sectors require less (e.g. construction with only 1% of workers completing more than twelve years). It should be taken into consideration that the general education curriculum is not purposely designed to produce graduates with skills for employment. Because of this, the level of education acquired by students does not have any direct relation with the on-the-job skill requirement of the employed workforce for the most part. In reality, the education and skill training of any worker must be relevant to the job they are employed for. Findings of the analysis on the achievement of education levels of the employed workforce are presented in Annex 7.

8.7.3 TRAINING RECEIVED

Responses of the employed skilled workforce for the nine sectors on training received have been analyzed and the findings presented in Figure 6.7.

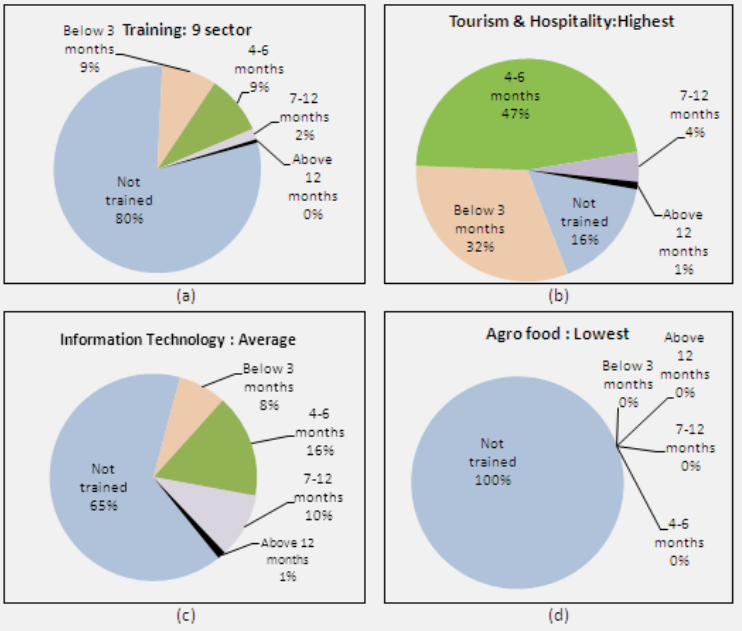


Figure : 6.7

Among the 1164 skilled workers employed in the nine sectors, 80% of them did not receive any training. 9% of the group received training of less than three months, another 9% received 4-6 months and 2% received 7–12 months.

In reality, it is likely that the 11% (2% + 9%) of the employed workforce with 4-12 months training would be graded between Levels 1-3 of the NTVQF. Findings of the analysis of training received by the employed workforce of the nine sectors are given in Annex 8.

The skills picture of the present employed workforce has apparently increased by 8% since the mid-90s. Findings of three studies; Employment Opportunities and Training Facilities of Skilled Manpower in Selected Localities, 1993 (ILO), Future Growth of Skilled Manpower Employment in the Industrial Sub-Sector, 1994 (ILO) and Job Market for VTI Graduates, 1994 (MOE) which covered approximately 150,000 employed skilled workers showed that less than 3% received any form of training. Of this 3%, less than 1.5% received formal training from TTCs or VTIs.

To enhance the productivity of the workforce and for Bangladesh to become a medium income country by 2021, the present skill level of all employed workers must be raised to medium and high skill levels.

8.7.4 EXPERIENCE ACQUIRED

Findings of the analyzed responses on experience acquired from the employed skilled workforce in the nine selected sectors are presented in Figure 6.8.

Among respondents, 10% of the workforce surveyed had acquired over 20 years of experience, 9% had 16-20 years, 20% had 11-15 years, 24% had 6-10 years, and 37% had 0-5 years. Employed skilled workers in the water transport sector on average had acquired the highest level of experience with 22% above 20 years, 7% between 16-20 years, 15% between 0-5 years and the remaining 56% between 6-15 years. The agro-food sector workers had

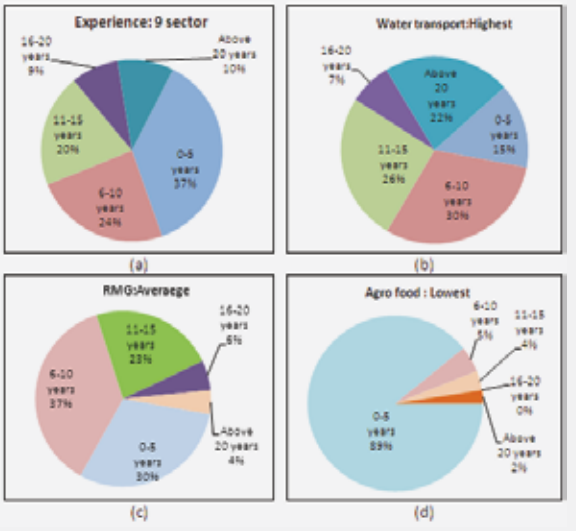


Figure : 6.8

acquired the lowest experience among the nine sectors with 89% between 0-5 years, 2% above 20 years and the remaining 9% between 6-20 years. The ready-made garments workforce stood at an average experience level with 4% above 20 years, 6% between 16-20 years, 30% between 0-5 years and the remaining 60% between 6-15 years.

Findings of the analysis on experience acquired by the workforce of the nine sectors are presented in Annex 9.

8.7.5 NTVQF LEVELS SELF-CLASSIFICATION

Workers in nine sectors were provided with opportunities to rate their individual skills in the NTVQF levels under the guidance of the data collectors and their direct supervisors. The data collection team and the industry representatives were given training about data collection procedures, specifically to support the employed skilled workers in the process of their self-classification using the NTVQF levels and their descriptors.

Figure 6.9 presents the self-classification in the NTVQF levels by the 1164 employed workers. The distribution is as follows; 6% in Level 5, 6% in Level 4, 36% in Level 3, 47% between Level 1-2 and 5% below level.

These 35 priority jobs have been assigned the provisional BSCO code ready for entry with the NTVQF Levels 1–6 along with Pre-Vocational 1 and 2 into the NSDC data cell. The draft BSCO has been prepared by the BBS with the support from the ILO and is yet to be finalized.

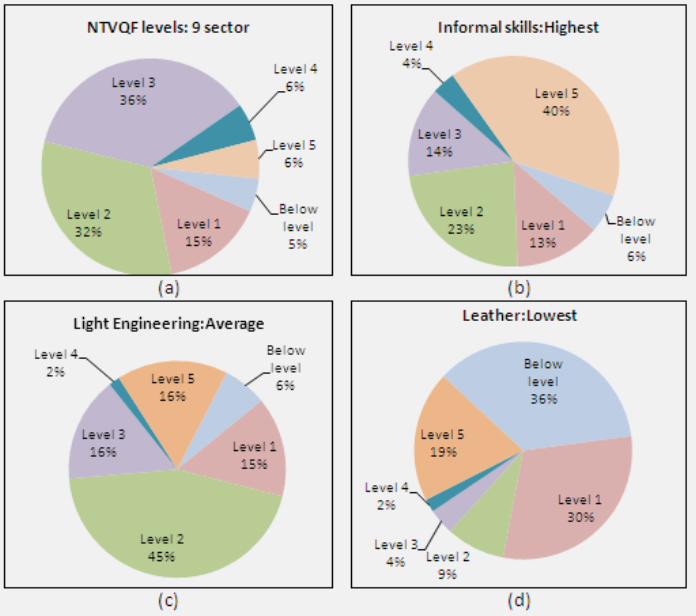


Figure : 6.9

One point to observe in the self-classification of the employed workers in Level 3-5 is that 80% of them did not receive any training and only 2% received training between 7-12 months that should lead to, if tested, up to NTVQF level 2/3. The other 9% with 4-6 months training if tested could be up to level 1/2. It may be argued that these workers acquired skills by experience, but only by testing them would the actual level of skill be ascertained.

The workers in the informal sector rated themselves the highest in the NTVQF levels with a distribution of 40% in Level 5, 4% in Level 4, 50% between Levels 1-3 and 6% below level.

The leather sector workforce rated themselves lowest among the nine sectors with a distribution of 19% at Level 5, 2% at Level 4, 4% at Level 3, 39% at Levels 1-2 and 36% below level. The self-classification of the 1164 skilled workforce employed in the 35 priority jobs in the nine sectors of the industries/organizations is presented in Annex 10.

Rating of the light engineering sector workforce ranks them as average among the nine sectors in the NTVQF levels with distribution of 16% in Level 5, 2% in Level 4, 76% in Levels 1-3 and 6% below Level 1.

A sample of 15 self-classified skilled workers with detailed particulars is presented in Annex 11. In the actual classification of the skilled workforce such detailed particulars should be included for the national database in order to facilitate tracing out individual skilled workforce as and when required.

8.8 FOCUS GROUP DISCUSSIONS - RATIONALE

The Focus Group Discussions (FGD) were organized in two sequential steps instead of the one step usual practice of FGD for qualitative data generation. In Step 1, three FGDs were organized. In Step 2, two FGDs were organized to review and improve the findings of the Step 1 discussions.

8.8.1 STEP 1 DISCUSSIONS – METHODS AND CRITERIA USED FOR SELECTION AND RECRUITMENT OF SKILLED WORKERS

Each of the FGDs was started with a presentation briefly mentioning the main aspects of the National Skill Development Policy including the NTVQF, objectives of the NSS Phase 1 along with the objectives of the FGD. A set format was used for guiding the discussions, the main issues included were: methods and criteria used for selection and recruitment of the skilled workforce, difficulties faced in the selection and recruitment of skilled workforce and training facilities available for updating and upgrading skilled work-force. In addition, the format contained two subsidiary issues such as: present employed workforce and the future demand (2012-2016) for skilled workforce in the NTVQF levels 1-5 ready for transfer to ISCO/BSCO. For the two subsidiary issues and for one main issue facilities for training, opinions expressed have been found inadequate for analysis.

The opinions expressed and recorded by the respective industry representatives in the Step 1 discussions and the opinions expressed in the Step 2 discussions recorded and moderated by the coordinator have been analyzed and presented in the following two sections.

Methods and criteria used for selection and recruitment of the skilled workforce:

With detailed discussion on each of the main issues and technical support provided by the trained Research Associates in the Step 1 FGDs, instead of recording their opinions by an expert for each sector, each of the industry representatives as per the request of the organizers recorded their opinion in the formats. Their opinions have been summarized sector-wise, analyzed separately and the findings presented.

A Job profile prepared and used

The term job profile has been repeatedly explained to the ISC representatives, ISC chairs and members, representatives of the BEF, data collectors, industries/organizations in the process of design and data collection and all others concerned with the NSS. A job profile consists of three components, which are:

- Job description (describes what to do)
- Job specification (describes how to do it, in other words, the skills, techniques
- and competences required to do the job)
- Personnel specification (personalizes the attitude, behavior, approach towards the job, work environment, peers, superiors including belongingness to the job for ensuring the best performance)

Figure : 6.10

The findings of the analysis of the opinions on job profile prepared and used have been presented in Figure 6.10. This shows that 55% of industries/organizations are using the job description and 52% prepared it. Similar is the situation in the case of job specification and personnel specification. In both cases, the percentage of industries using the components are more than the percentages which are preparing it. How and why did this occur is a valid question to be resolved. The answer to this such other questions warranted the organization of the Step 2 FGD.

B Advertising approach/methodology followed

Figure 6.11 presents the findings on the opinions of industry/organizational representatives on advertising approaches for the selection of their skilled workforce. Findings of the analysis show that more than one approach to advertising is used. Local circulation of advertisements was used by 71% of respondents, which was the highest among all media listed. Print media was rated the second highest (57%), followed by the internet (54%), websites (46%) and notice boards (39%).

Gender preferences for employing skilled workers were analyzed and are presented in Figure 6.12. A total of 62% industries/organizations showed no preferences (males and females were equally preferred), 34% preferred male workers and 4% preferred female workers. Findings of the data analysis show that a large percentage of females are working in the ready-made garments and informal skills sectors.

Advertisement approach/methodology

Types of advertisement	Number of respondent	Percentage
Print media (News paper)	32	57.14
Notice Board	22	39.29
Local circulation	40	71.43
Internet	30	53.57
Website	26	46.43
Radio	3	5.36
Television	4	7.14
Others	2	3.57

Figure : 6.11

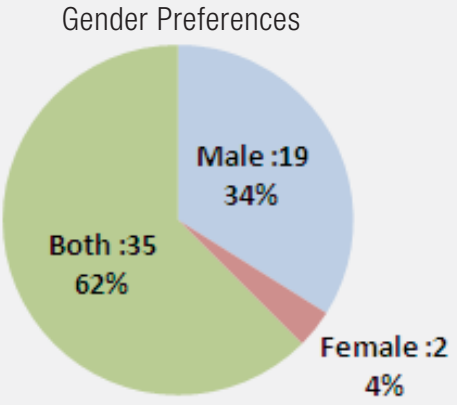


Figure : 6.12

C Selection methods

Figure 6.13 presents the findings of the analysis of the opinions on the methods/approaches used for the selection of skilled workers. As per the provision made, the 56 representatives from the nine sectors expressed their preferences for more than one method/approach. The method with the highest frequency was interviews (84%), followed by practical testing (80%), assessment of CV (71%), written testing (48%) and online testing (4%). The desirable rating could be the highest for practical test for the selection of the skilled workforce as analysis of data on the criteria of selection skill has been rated as the highest priority.

Methods / approaches for selection

Methods used for selection	Respondent	Persentage
Written test	27	48
Practical test	45	80
Assesment of C.V.	40	71
On-line test	2	4
Interview	47	84
Others	1	2

Figure : 6.13

D Selection criteria

The opinions of the industry representatives on the criteria followed for selection/recruitment of skilled workers have been analyzed on a 5-point rating scale and the findings of only the highest ratings presented in Figure 6.14. These findings have shown that the industries/organizations rated skill (70%) as the highest among the six selected criteria they follow for the selection of the skilled workforce. Previous experience they rated the second highest (50%), followed by training (38%), attitude (34%) and educational qualifications (30%). The rating of these six criteria appears to be appropriate for the selection of skilled workers.

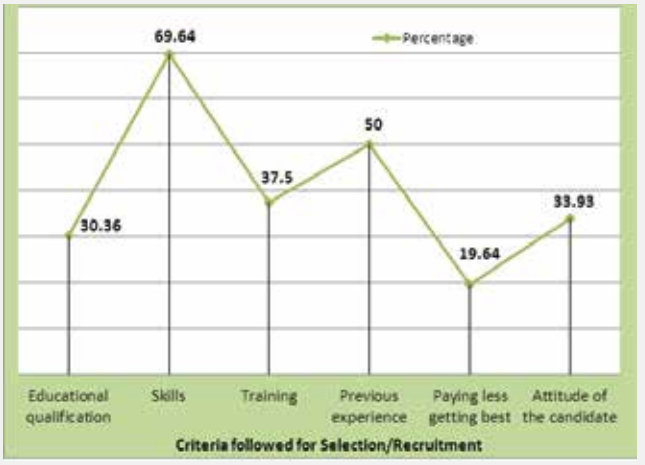


Figure : 6.14

E Difficulties faced in filling skilled worker positions

The opinions of the representatives from the industries/organizations on the difficulties faced in filling the post of skilled workforce have been analyzed and presented in Figure 6.15.

Difficulties faced in filling the post of skilled workforce

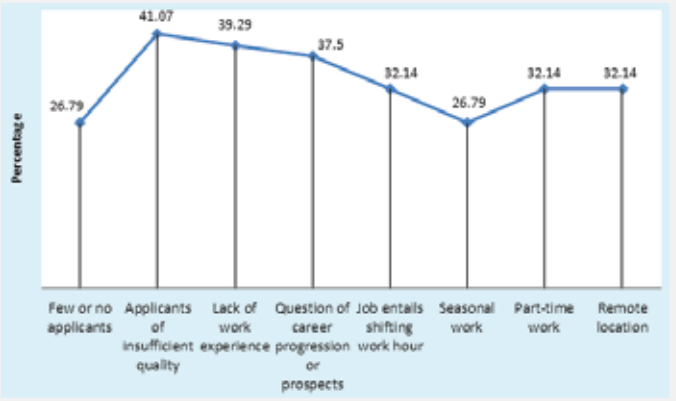


Figure : 6.15

According to the findings of analysis the representatives of the nine sectors of industries rated at 41% the highest for applicants of insufficient quality among the eight criteria, the second highest at 39% the lack of work experience then followed by career progression 38%, shift work and remote location both at 32% and the lowest 27% both for few or no applicants and seasonal work.

8.8.2 STEP 2 DISCUSSIONS – REVIEWING STEP 1 DISCUSSIONS AND LOOKING FORWARD

Step 2 discussions started with a presentation briefly mentioning the findings of the Step 1 discussions. This focused on industries using job profiles even they did not prepare them, linkage of job profiles with the NTVQF, objectives of the Step 2 discussions and the reasons that warranted Step 2 discussions.

The presentation also included the brief findings of the comparative analysis of the workforce employment pattern and productivity of Bangladesh, Pakistan, India, Indonesia, Malaysia, Australia and Japan.

According to the findings of the comparative analysis Bangladesh stands as a country with:

- low skills
- low labour cost
- low productivity of the workforce, and
- circumscribed by mainly employment market non-responsive education and training programmes

With the situations described above the step 2 FGDs have been organized and moderated mainly focusing the following questions in order to explore the possibility of preparing demand tuned to NTVQF levels:

- What should the country do to come out of this low skill and low productivity?
- How the country should resolve the causes?
- How to match the demand with the supply?

or

- How to match the supply with demand?

The opinions expressed by the industry representatives on behalf of the respective sectors and their own industries/organizations have been recorded sector wise. The findings in the form of recommendations in order of frequency are presented in Box 1.

Sl. No.	Recommendations	Frequency
1	Demand should be placed by the industry as per NTVQF levels with the job description, job specification & personnel specification.	8
2	Skill training should be tuned to the NTVQF levels.	6
3	Capacity of the industries and TVET providers should be strengthened for placing demand and for planning & implementing training tuned to NTVQF levels.	6
4	Training providers and industry should jointly set demand and implement training programme tuned to the NTVQF levels.	3
5	NSDC-secretariat should be established by an Act of the Parliament in order to act as the national coordinating authority for skill development.	3
6	NTVQF levels should be extended to level 10 for paraprofessional (7), professional (8), researcher(9) and policymakers (10).	2
7	Skill training should be integrated with general education at the NTVQF levels.	2
8	Both IT and Tourism & Hospitality sectors pointed out that priority of jobs used in NSS (Phase -1) are not as per actual priority jobs of these sectors. The ISCs should prioritize the job in consultation with all members.	2
9	Leather sector pointed out that specific skill should be focused in limited area with NTVQF levels. TVET providers should ensure specific skills as per demand from the industries.	1
10	Informal skills sector pointed out that trained workforce are not available to start a new business. Industry should prepare the projection for skilled workforce as per NTVQF levels.	1

Box 1 : Summary of recommendations of the FGD on 18 Oct 2012

The recommendation 'demand should be placed by the industry as per NTVQF levels with the job description, job specification & personnel specification' has the highest frequency and therefore is the highest priority. The next two recommendations both had the second highest frequency and are therefore both considered as the second highest priority areas.

8.9 MANPOWER EXPORT DATA

According to data received from BMET remittances earned US$12.165 billion in 2011 was approximately 13% of Bangladesh's GDP, a very significant contribution for which national direct investment/expenditure was almost negligible. In other words, this may be considered as the citizen's contribution. This contribution comes from the exported manpower partly from their earnings and partly through translation of their very hard earned/acquired Bangladesh taka invested in seeking and getting overseas employment.

8.9.1 EXPORTED MANPOWER AND CLASSIFICATION

The list received from BMET presented the exported manpower for 2011 in 402 categories, though there was overlapping of a number of similar categories. According to the list, five categories of manpower: carpenter, cleaner, farmer, construction worker and waiter made up 19% whereas labourers/workers made up 42%. The proportion of the manpower exported in 1976 was professional 9%, skilled worker 29%, semi-skilled 9% and less skilled 53%. This figure for 2000 were professional 5%, skilled 45%, semi-skilled 12% and less skilled 38% but the figure in 2011 were professional 0.2%, skilled 40%, semi-skilled 05% and less skilled 55%.

This type of fluctuation is inevitable but question remains how in the absence of the national standard classification and its application, these workforces were classified in the four categories as: professional, skilled, semi-skilled and less skilled. This category wise distribution was made without any reference to any standard skill classification such as NTVQF levels leading to BSCO/ISCO. In this context a discussion meeting was organized with two Directors of the BMET. The main purpose of this meeting was to discuss the importance of demand supply of skilled workforce and to classify them according to the NTVQF levels properly tuned to job description, job specification and personnel specification. The outcomes of the meeting relating to supply and demand of skilled workforce, specifically with respect to export of manpower were summarized and presented in Box 2.

Sl. No.	Opinions/recommendations
01	Detail comprehensive survey covering more sectors/jobs should be conducted.
02	Capacity strengthening is necessary for both skill training providers for tuning their training programme to the NTVQF levels and for the ISCs/ industries to prepare the job content with job description, job specification and personnel specification at the NTVQF levels.
03	Overseas exporting of skilled workforce should gradually be tuned to the NTVQF level classified workforce.
04	Skills demand survey should be conducted in the country(ies) where sizable number of Bangladesh skilled workforce are already working and there is growing demand of skilled workforce.
05	The draft Bangladesh Standard Classification of Occupations (BSCO) should be reviewed, improved and adopted.
06	Arrangement should be made for the overseas employed skilled workforce in consultation with the host country if there are adequate numbers for updating and upgrading training including assessment and certification.
07	Arrangement should be organized for assessment of workforce on return from employment or when they come to Bangladesh on leave with higher skills.

Box 2 : Outcomes of the meeting with two Directors of BMET on 31 Oct 2012

Exported manpower usually comes back with not only foreign exchange but also with higher skills that should be recognized as prior learning, so that they can qualify as NTVQF-classified workforce.

8.9.2 OVERSEAS EMPLOYMENT TRENDS

Total manpower exported from 1976 up to September 2012 was 8,214,435 with distribution of professional 2.24%, skilled 31.57%, semi-skilled 24.24% and less skilled 51.95%. Table 2 presents the trends of overseas employment in the 12 selected countries during the five years from 2007 to 2011.

Trends of Overseas Employmant in selected countries(2007 to 2011)

Sl. No.	Country	2007	2008	2009	2010	2011	Total
1	KSA	204112	132124	14664	7061	15833	373794
2	UAE	226392	419366	258348	203308	282739	1390153
3	OMAN	17478	52816	41784	42641	135246	289965
4	QATAR	15130	25548	11672	12085	13111	77546
5	BAHRAIN	16433	13182	28424	21824	13996	93859
6	LEBANON	3541	8444	13941	17218	19169	62313
7	LIBIYA	1480	5067	22742	12132	89	41510
8	MALAYSIA	273201	131762	12422	919	742	419046
9	SINGAPORE	38324	56591	39531	39053	48687	222186
10	BRUNEI	1101	1054	2693	2191	5150	12189
11	MOURITANIA	3658	3071	1826	3705	5363	17623
12	ITALY	10950	6528	5333	6728	7624	37163
13	Others	20200	15502	17892	21917	20313	95824
	Total:	832000	871055	471272	390782	568062	3133171

Table 2

The manpower export in 2011 as compared to 2007 went up in the case of Singapore by 27% and this figure for UAE was 24% and for KSA came down to 3.45% in 2010 and rose again to 20% in 2011 and for Malaysia 0.27%. As per information available through the media UAE has stopped importing manpower from Bangladesh since early 2012. In fact, export of manpower to UAE in 2011 stood at 287,329 which was approximately 50% of the total manpower exported in that year. Malaysia recently has agreed to start importing manpower from Bangladesh. The trends of the overseas employment for five years from 2007 to 2011 for the main five importing countries: KSA, UAE, Oman, Malaysia and Singapore are presented in Figure 6.15 (a) and that for the twelve countries and rest blocking in the group of others presented in Figure 6.15 (b).

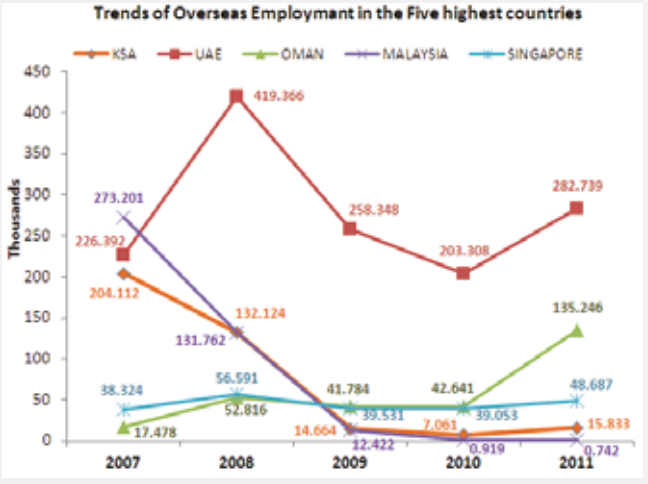


Figure : 6.15 (a)

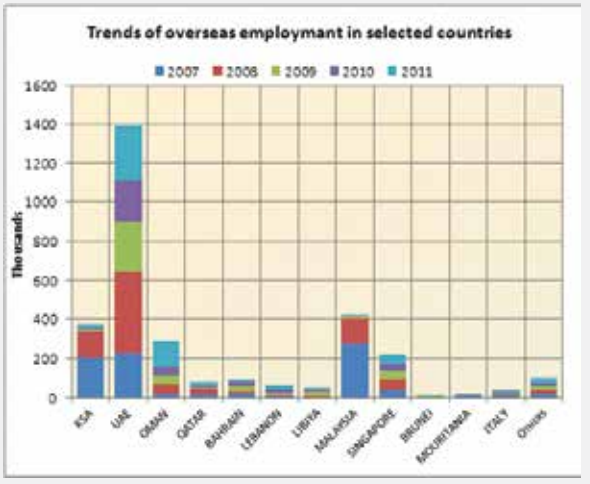


Figure : 6.15 (b)

The key questions surround the decreasing manpower import from Bangladesh during five years by Malaysia, KSA and even UAE in 2012 not to import manpower from Bangladesh. In 2007 only these three countries imported 85% of the total manpower exported from Bangladesh. For their decisions and not importing manpower from Bangladesh the total manpower export in 2009 came down to 54% and in 2010 the figure further came down to 49% compared to that of the export of the 2008. Apparent and real effect of this was evident that the country lost 46% of the remittances in 2009 and 51% of the remittances in 2010. The remittances lost in 2009 and 2010 could amount to US$10,573 million [US$4930 =10.771.46 x 0.46 for 2009 + US$5143 = 11064.73 x 0.51 for 2010].

Figure 6.16 presents category wise workforce overseas employment of the skilled workforce for five years from 2007 to 2011. The category of the workforce, as stated earlier, was made without any reference to any standard skill classification such as NTVQF levels leading to BSCO/ISCO. Even then, it appears that some form of loose correlation exists between skilled manpower exported and remittances earned,

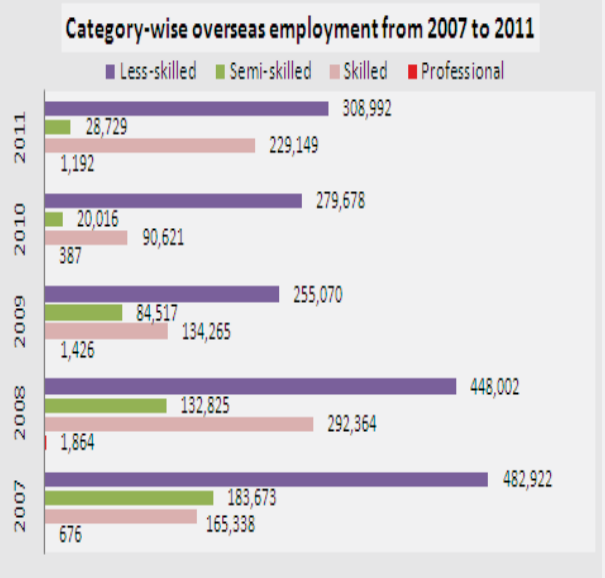


Figure : 6.16

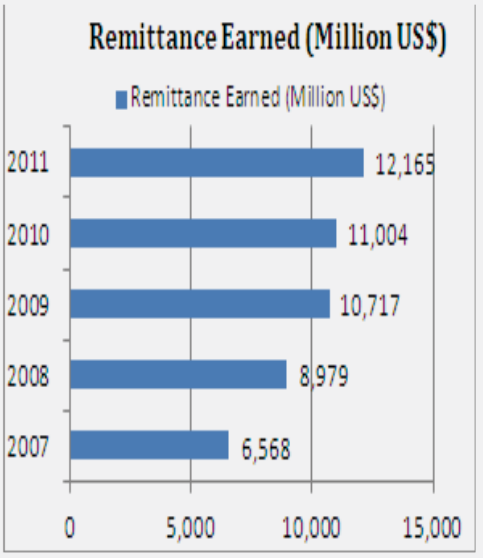


Figure : 6.17

8.9.3 CATEGORY WISE OVERSEAS EMPLOYMENT AND REMITTANCES

In 2007 skilled category manpower exported was 20% this figure rose to 33% in 2008 as a result it appears that the remittances increased by 2, 411 million though the total number of manpower exported in 2008 was marginally higher than 2007, Figure 6.17. In the similar way the skilled category manpower exported was 40% of the total in 2011 and the increased remittances earned in 2011 was 3,186 million as compared to 2008 though the manpower exported was only 65% that of 2008.

8.10 TRENDS OF ENROLMENT IN FORMAL COURSES AFFILIATED BY BTEB

As per Technical Education Act 1967 the BTEB has been entrusted with the responsibility to set standard and control the technical and vocational education in the country. BTEB authorizes the TVET institutions to run formal courses with definite content, duration leading to the award for the successful graduates recognized by the employers and by the further education institutions. The non-formal courses have definite content, duration and awards either by BTEB or by the TVET providers are neither recognized by the employers nor by the further education institutions. This section presents the trends of enrollment and the success rates of graduates only for the formal TVET and the next section will present the trends for non-formal education and training.

8.10.1 ANALYSIS OF ENROLMENT TRENDS IN TVET COURSES

Figure 6.18 presents the trends of enrollment in thousand in the public and private TVET institutions affiliated with the BTEB for the period from 2007 to 2011. Enrollment in the private institutions was 4.6 times

that of the public institutions that stood at 82% in private in 2007, Figure 6.18 (a). This gap of the enrollment between private and public was 3.9 times in 2008, 4.1 times in 2009, 4.7 times in 2010 and 4.7 times in 2011 though the absolute number of enrollment in the private institutions was 211,316 in 2007 that increased to 277,933 in 2011.

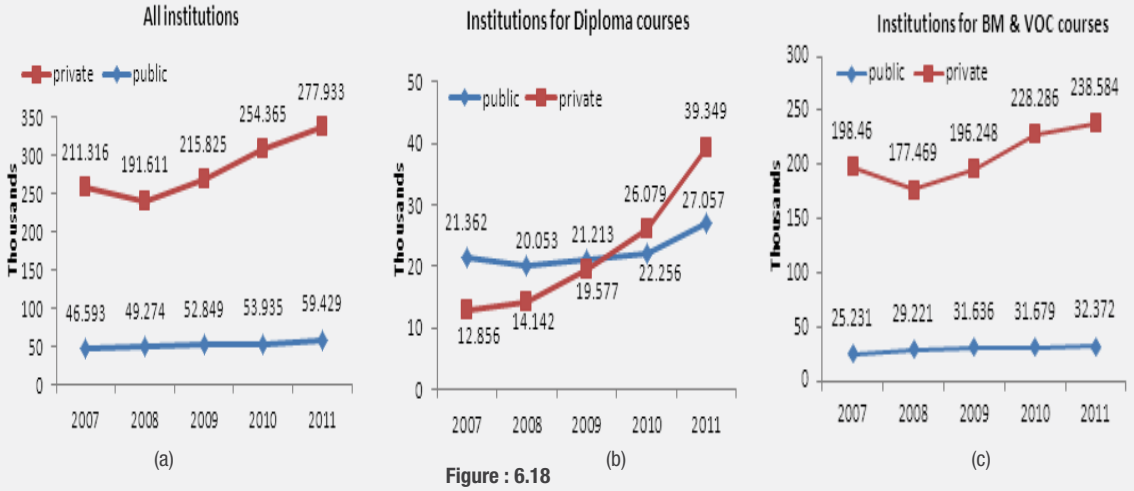


Figure : 6.18

Figure 6.18 (b) presents the trends of the enrollment in the diploma courses was 38% in the private institutions and 62% in the public institutions in 2007. But the situation reversed within the period of five years in 2011 when the enrollment in the private institutions became 61% and that in the public 39%.

In the vocational courses the enrollment in the private institutions was 89% and that in public 11% with a gap of 7.86 times between private and public institutions in 2007, Figure 6.18 (c). The fluctuation of the gap continued between private and public institutions that stood at 7.37 times in 2011 with net enrollment of 238,584 in the private institutions.

8.10.2 TRENDS OF THE BTEB FORMAL EXAMINATION RESULTS

The trends of the BTEB formal examination gender segregated results for the period from 2007 to 2011 have been presented in Figure 6.19. The Figure 6.19 (a) presents the gender segregated comparative number of candidates those appeared in the examinations and those came out successful in all examinations of the BTEB in the years from 2007 to 2011. The Figure 6.19 presents the exact number of the male and the female candidates those appeared and passed the examinations as such the comparative analyzes have been made in percentage to demonstrate the male and female contrasts.

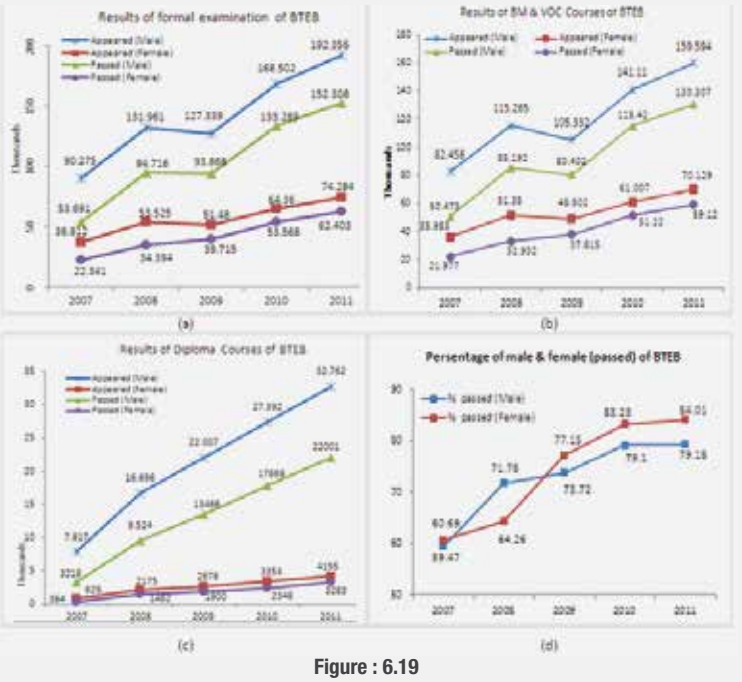


Figure : 6.19

The passing out rate in 2007 for the male candidates was 59% and this figure rose to 79% in 2011, an increase of 20% points in five years. The passing out rate for the female candidates was 61% in 2007 and that rose to 84% in 2011, an increase of 23% points in five years. Comparatively females were better performing than the male counterpart by 02% points in 2007 and 05% points in 2011.

For the BM & vocational courses the passing out rates for both female and male was 61% in 2007 but in 2011 the gap stood at 02% points, Figure 6.19 (b). Figure 6.19 (c) presents the female and male passing gap for the diploma courses at 03% points in 2007 and this figure for 2011 stood at 12% points.

The overall female and male passing out gap during the five years is presented in Figure 6.19 (d). This gap between the female and male was -1% points in 2007, - 7% points in 2008, 04% points in 2009, 04% points in 2010 and 05% points in 2011. The cumulative performance of the female candidates proved to be better than that of the male during the five years period.

Following a discussion with BTEB representative the survey team agreed that the present basic course should be considered at the NTVQF Level 1, SSC (Voc) grade IX to NTVQF Level 2, SSC (Voc) grade X to NTVQF Level 3 and HSC (Voc) to NTVQF Level 4. As such the Survey Team made classification of the BTEB 2009 to 2011 graduates for basic course, SSC (Voc) and HSC (Voc) accordingly and presented in Figure 6.20.

Classification of NTVQF levels of 04 selected courses affiliated by BTEB

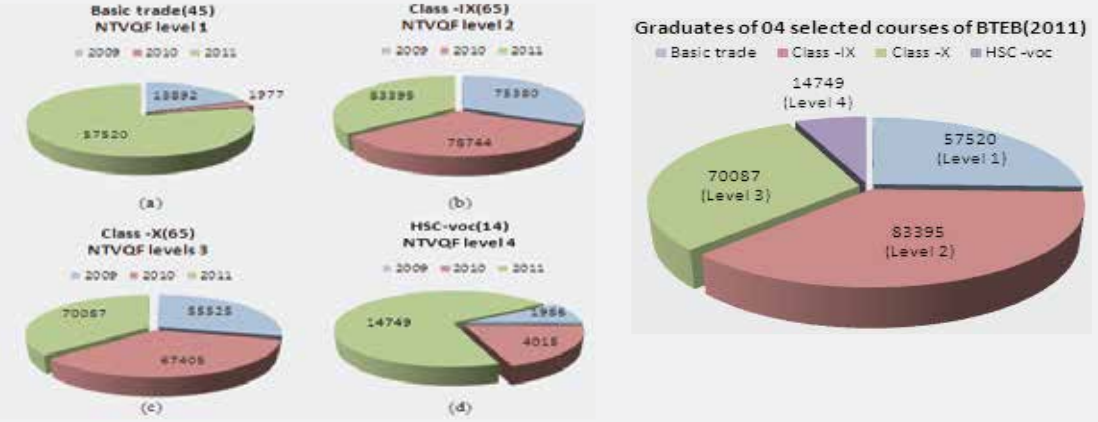


Figure : 6.20

This classification has been done as a theoretical exercise. In order to bring this into reality the content of the BTEB courses and achievement of the graduates when tested must conform to the NTVQF level standards.

8.10.3 CAPACITY AND ENROLLMENT GAP OF BTEB-AFFILIATED COURSES

The enrollment capacity in all the BTEB-affiliated 17 formal courses in the public and private institutions in 2011 was 447,430 which was approximately 04% of the age group of the population. This proportion of TVET enrolment as per UNESCO GMR 2011 was 7% in India, 41% in Indonesia, 43% in Malaysia and 43% in Australia. The course-wise distribution of the BTEB enrollment has been presented in Table 3.

Bangladesh Technical Education Board (BTEB)						
TVET courses : Up to December - 2011						
Sl. No.	Courses Title	Duration	Number of institute			Intake capacity
			Public	Private	Total	
1	Dip. in Eng.	4-Year	45	271	316	49600
2	Dip. in Eng. (Glass & Ceramic	4-Year	1	0	1	120
3	Dip. in Eng. Printing	4-Year	1	0	1	80
4	Dip. in Eng. Survey	4-Year	2	0	2	120
5	Dip. in Marine Eng. & Dip. in Shipbuilding Eng.	4-Year	1	0	1	80
6	Dip. in Eng. Forestry	3-Year	1	0	1	40
7	Dip. in Tex. Eng.	4-Year	6	72	78	5000
8	Dip. in Agri.	4-Year	14	137	151	12000
9	Dip. in Fisheries	4-Year	1	20	21	840
10	Dip. in Commerce	2-Year	0	7	7	560
11	H.S.C.(BM)	2-Year	4	1554	1558	140220
12	H.S.C.(VOC)	2-Year	64	0	64	8430
13	S.S.C.(VOC)	2-Year	154	1866	2020	165000
14	Dakhil (VOC)	2-Year	0	240	240	14400
15	Dip. in Health	3-Year	0	112	112	11320
16	Certificate in Health Tech.	1-Year	0	92	92	4620
17	NSS Basic (360 hours)	3-6 months	9	982	991	35000
		Total=	**303**	**5353**	**5656**	**447430**

Table 3

The actual enrollment trends for the five years from 2007-2011 according to the data collected from the available sources including BTEB's annual reports show (This calculation made excluding the courses in Sl. 2 to 6, 9 &10 and 16 in the Table for which gender segregated data not available and their enrollment capacity 6460 students) that the enrollment as compared to 2007 was 07% less in the year 2008, 04% higher in 2009, 20% higher in 2010 and 31% higher in 2011. The enrollment of female students was 26% in the year 2007 and this figure was 25% in 2008 to 2010 but it came down to 22% in 2011.

The actual enrollment in 2011 for the nine courses was 337,362 given in Table 3 plus 6460 (if full capacity used) is equal to 343,822. A minor of data difference can also seen. That the enrollment capacity was 35000 in 2011 for the course in NSS Basic but actual enrollment has been found to be 41,999 students/learners, Table 4.

Trends of Public - Private enrollment in the available courses affiliated by BTEB								
Sl. No.	Courses	Duration	2011					
			Public			Private		
			Male	Female	Total	Male	Female	Total
1	Dip in Eng.	4 years	21039	3344	24383	18830	898	19728
2	Dip in Textile Eng.	4 years	292	48	340	3939	77	4016
3	Dip in Agri.	4 years	1767	567	2334	6874	1442	8316
4	Dip in Health Tech.	3 years	0	0	0	4429	2860	7289
5	HSC (BM)	2 years	5	136	141	63986	32463	96449
6	HSC (Voc)	2 years	5831	1325	7156	0	0	0
7	SSC (Voc)	2 years	20173	3947	24120	65011	31697	96708
8	Dakhil (Voc)	2 years	0	0	0	2543	885	3428
9	Basic course	360 hrs	846	109	955	28206	13793	41999
		Total=	49953	9476	59429	193818	84115	277933

Table 4

As per the available data the enrollment capacity was 447,430 but the actual enrollment in the nine courses plus the other eight courses was 343,822 in 2011 and as a result a total of 103, 608 seats which stood at 23% of the available seats remained unused in the BTEB affiliated courses. The unused seats according to the level of four main courses were: Diploma 47737, HSC (Voc) 1254, HSC (BM) 51910 and SSC (Voc) 27564.

It was not clear why and how the affiliation was granted, why students were not enrolled in these unused seats? The BTEB must take urgent action to assess the causes and on the findings, and if required cancel the affiliation forthwith for those institutions and stop giving such affiliation in the future.

The BTEB's capacity is very limited in terms of technical competence and has almost no linkage with industries for collection of the changing patterns of the skilled workforce job contents for curriculum preparation and updating. BTEB has been entrusted with the responsibilities for ensuring implementation of the NTVQF, ISSQ (Industry Sector Standards and Qualifications), RPL, SQA (Skills Quality Assurance) and Equity Issues in the implementation of the NSDP.

BTEB does not maintain a comprehensive and systematic data base for the registered students and graduates together with the employment market trends for curriculum preparation and updating. As such, curriculum preparation and updating are done by the BTEB by engaging subject teachers with no industrial experience. In such a situation, the prepared, updated and on-going curriculum of the BTEB is not at all tuned to the job market demand in the form of NTVQF levels and remains irrelevant and redundant to the ever changing needs of the job market.

8.10.4 STAFF CAPACITY IN THE PUBLIC TVET INSTITUTIONS

The staff capacity issue focuses only on student-teacher ratio and training of teachers of the public institutions based on the findings of the two assessments concerning the teachers.

Student-teacher ratio

An assessment was conducted with secondary data from the DTE in 2011 on the student-teacher ratio in the public polytechnics under the Ministry of Education run by the DTE. The findings of the assessment are briefly presented as:

In short, the student- teacher ratio in polytechnics faces a very serious crisis in the manner of:
four-year diploma course 1: 24

- with present 47% teachers vacant position raises to 1: 47
- practical session with 12 student per teacher 1:70
- double shift diploma course in operation may push the ratio to 1:140

The national average student-teacher ratio reflects the overall picture of availability of teachers but there are a number of new polytechnics with almost no teachers except a few borrowed from other institutes and some limited numbers engaged purely on temporary muster roll basis.

As a result, there are instances where public polytechnic teachers are encouraged to take classes for monetary benefit in the nearby private polytechnic institutions.
The reasons for the serious crisis concerning the student- teacher ratio are not simple to explain. This partly may be attributed to the unusually lengthy and faulty teacher selection and recruitment processes, inadequate flow of resources and the lack of attention and clear understating about the needs and importance of designing and implementing contextual TVET sub-sector programmes.

Training of teachers

An extract from the assessment of the training needs of polytechnic teachers shows that a good TVET teacher must possess required academic qualification along with integrated training and experience components of:

- subject skills and pedagogy,
- industrial experience,
- management training.
- TVET teaching experience,
- industrial training and

A comparative capacity assessment in 1983 and repeated in 2011 at an interval of approximately 30 years on the capacity of public polytechnic employed teachers/staff in the context of the above mentioned five components represents in a limited way hidden picture of the deplorable conditions presented in Table 5.

Capacity of Government Polytechnic Staff (in %)

Position	Experience		Training			Total		Increase + /decrease-
	Teaching 1983	Industrial	Industrial	Teacher 1983	Management	1983	2011	
Principal	20	-	-	19.64	-	40	34	(-6)
Vice-Principal	17.81	-		12.11		30	26	(-4)
Chief Instructor	19.42			12.26		32	24	(-8)
Instructor	18.64			7.9		27	18	(-9)
Junior Instructor	13.31			0.37		14	16	(+2)

Table 5

The detailed procedure followed in carrying out the translation of the capacity assessment for the five components assigning 20% weight to each is available in the book "The Challenge of TVE for Human Resource Development" published and first printed in 1996 by the Bangladesh Technical Education Board.

To improve teachers' recruitment and training conditions, and improve physical facilities in the institutions, the DTE must undertake a clearly defined programme for the upcoming challenges in the planning and implementation of relevant provisions of the NSDP.

Based on the findings of the brief analysis of the formal TVET providers a discussion meeting was organized with the DG DTE, CEO NSDC Secretariat and Chairman BTEB and senior officers of three organizations. The main purpose of this meeting was to discuss the importance of demand supply of skilled workforce and how to prepare graduates as per the need of the industries according to the NTVQF levels properly tuned to job description, job specification and personnel specification. The results of the discussion were summarized in order of priority and key recommendations are presented in Box 3.

Sl. No.	Organization	Opinions/recommendations	Frequency
01	**DTE**	Capacity of the TVET providers should be strengthened for implementing training the NTVQF levels;	6
		All skills training should be tuned to the NTVQF levels;	4
		NSDC should coordinate all formal & non-formal skills training;	4
		NTVQF levels should be extended up to level 10;	1
		All project program tuned to the NTVQF levels and should be prioritized as short, medium & long term;	1
		Skills training should be recognized according to NTVQF levels;	1
		Capacity of the policy makers and all other concerned in planning & implementation of TVET programs at the NTVQF levels should be strengthened;	1
		Research activities should be undertaken on skill demand & supply matching;	1
		Salary and incentives should be given according to the skill levels of the workforce in the NTVQF levels.	1
02	**NSDC-Secretariat**	Capacity of the TVET providers should be strengthened for implementing the NTVQF levels;	3
		All skills training should be tuned to NTVQF levels;	2
		All skills training should be aligned with the National Skills Development Policy (NSDP)	1
		Public awareness should be enhanced on the importance of the NTVQF levels and its implementation.	1
03	**BTEB**	Capacity of the TVET providers should be strengthened for implementing the NTVQF levels;	3
		All skills training should be tuned to the NTVQF levels;	2
		Capacity of the policy makers and all other concern in planning & implementation of TVET programs at the NTVQF levels should be strengthened;	1
		Public awareness should be enhanced on the importance of the NTVQF levels and its implementation.	1

Box 3: Summary of the key recommendations of the meeting on 13 Nov'2013

8.11 NON-FORMAL PUBLIC AND PRIVATE/ NGO TVET PROVIDERS DATA

The non-formal TVET courses not affiliated with the BTEB have definite duration and the awards are considered by the employers but not by the further education institutions. Data was collected from the non-formal public and private/NGO providers using a questionnaire (Annex 13). The questionnaire was designed to collect data and information about the providers, teacher and management, intake capacity self-classified by the providers in the NTVQF levels, present capacity and future projection of intake in the NTVQF levels. The purpose of initiating the self-classification of their course by the non-formal TVET providers was to provide opportunities to them to learn, understand and apply NTVQF level classification of their non-formal courses. Of the 10 public and 18 private/NGO TVET providers requested in the questionnaire, discussion meetings were only possible with 4 public and 9 private/NGO providers.

8.11.1 SUMMARY OF DATA COLLECTED FROM THE PUBLIC AND PRIVATE/NGO PROVIDERS

Data collected from the non-formal four public and nine private/NGO have been summarized and presented in Table 6.

Following the request in the questionnaire, the non-formal providers' data have been received specifically showing the NTVQF according to their self-classification they thought appropriate though their courses were not designed according to the NTVQF levels. For this, the NTVQF levels along with the descriptor was attached to the questionnaire and thoroughly explained in the meetings. In reality, only by examining the courses and testing their graduates the levels of these non-formal courses should be decided.

Summary of 4 public and 9 private / NGO Non-Formal TVET enrollment in 2011

Sl. no.	Organization	No. of courses	Duration	NTVQF Levels						Total
				Below	1	2	3	4	5	
Public:										
1	TTC, BMET	34	21days, 2/3/6 months	8036	4913	530	1852	-	-	**15331**
2	NHTTI, BPC	09	18wks/ 1yr/2yr	-	898	-	-	-	-	**898**
3	DYD	12	1/1.5/ 2.5/4/6 months	44178	15162	-	-	-	-	**59340**
4	BITAC	10	2/6/14 wks.	36	23	89	157	91	55	**451**
Private / NGO:										
5	TMSS	31	7/15/30 /45/60 /90 days	-	1566	1827	-	-	-	**3393**
6	SIT	25	3/4/6 months	114828	229656	-	-	-	-	**344484**
7	CARITAS	16	1/3/6 /12 months	-	1793	-	-	-	-	**1793**
8	SOS	06	1 yr.	-	30	89	57	-	-	**176**
9	DAM	14	180/360/ 384 hrs.	140	1870	-	-	-	-	**2010**
10	FIVDB	15	2/3/5/7/ 12/21 /30 days	24	341	525	288	321	180	**1679**
11	UCEP	21	6/12 months	-	460	4020	-	-	-	**4480**
12	MAWTS	72	1/2/4/ 8/10 /14 wks.	-	2962	60000	-	-	2400	**65362**
13	BRAC	09	25 hrs	No training project in 2011						
			Total:	**167242**	**259674**	**67080**	**2354**	**412**	**2635**	**499397**

Table 6

A total of 499,397 students/learners were enrolled only by the thirteen responding public and private non-formal providers. Of this only 15% were enrolled by the public providers and 85% by the private/NGO providers.

The actual number of students/learners enrolled by the non-formal providers may exceed one million. Even this reported number was more than the actual total formal TVET enrollment affiliated with the BTEB by 155,575 students/learners.

The self-classification distribution of the level of non-formal courses were 35% below Level, 51% in Level 1, 13% in Level 2, approximately 0.5% in Level 3 and 0.5% in Level 5. This self-classification of the non-formal in an exercise carried out to allow them to learn, understand and apply NTVQF levels and as such this self-classification should not be considered as classified data in the NTVQF levels.

Since these are non-standard courses, standardization of the non-formal courses and extending the testing and certification for the students/learners may open a golden avenue in the supply of classified skilled workforce according to the demand in the NTVQF levels both for the internal and overseas employment market. This must be taken up without any delay as the daunting challenge of the country by the NSDC-secretariat for the overall coordination and by the BTEB for standardizing the non-formal courses together with testing and certification for the students/learners.

8.11.2 ANALYSIS OF THE PUBLIC PROVIDERS' DATA

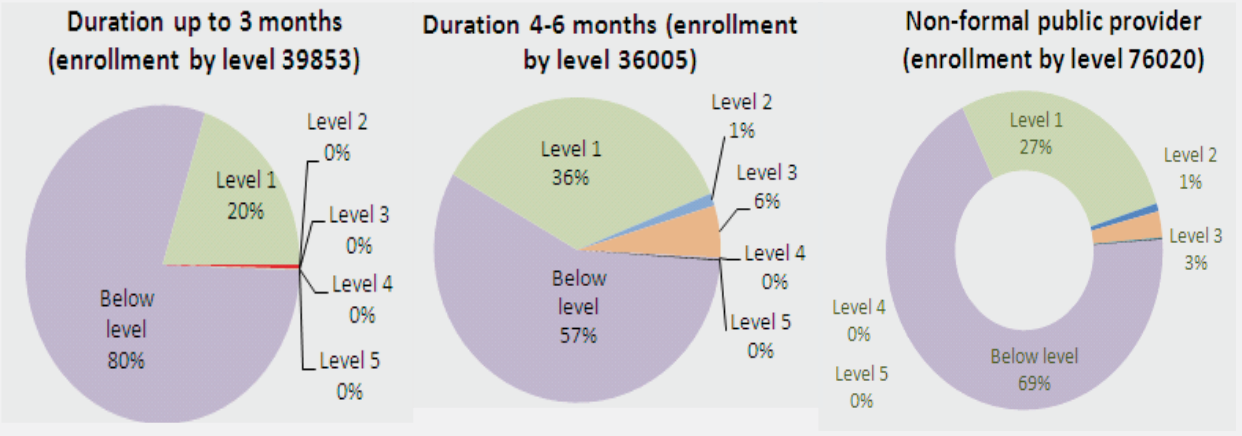
Enrollment in the non-formal courses with varying durations and self-classifications in the NTVQF levels by public providers in 2011 is presented in Table 7.

Non-formal enrollment by 4 Public providers					
NTVQF levels*	Up to 3 months	4-6 months	7-12 months	Above 1year	Total
Below level	31668	20582	0	0	52250
Level 1	7984	12850	90	72	20996
Level 2	145	474	0	0	619
Level 3	28	1981	0	0	2009
Level 4	18	73	0	0	91
Level 5	10	45	0	0	55
Total	39853	36005	90	72	76020

* NTVQF level suggested by the provider

Table 7

The self-classification of the public providers for their non-formal courses in the NTVQF levels is presented in the Figure 6.21.



(a) (b) (c)

Figure 6.21

A total of 39853 students/learners were enrolled in these non-formal courses of duration up to three months and their self-classification distribution by the providers placed 80% of them below Level and 20% in Level 1, Figure 6.21 (a). Among the courses of duration 4-6 months with enrollment of 36,005 students/learners have been placed in the NTVQF as follows; 57% below Level, 36% in Level 1, 1% in Level 2 and 6% in 3. The is shown in Figure 6.21 (b).

The distribution of all the public providers' enrolled students/learners with different duration of the non-formal courses have been presented in the Figure 6.21 (c). According to the self-classification of the public providers the student/learners with their courses have been placed in the proportion of 69% below Level, 27% in Level 1, 1% in Level 2 and 3% in Level 3.

8.11.3 ANALYSIS OF THE PRIVATE/NGO PROVIDERS DATA

Non-formal enrollment by 9 NGO providers				
NTVQF levels*	Up to 3 mn	4-6 mn	7-12 mn	Total
Below level	16568	98424	0	114992
Level 1	34858	200577	281	235716
Level 2	2352	0	4109	6461
Level 3	288	0	57	345
Level 4	321	0	0	321
Level 5	180	0	0	180
Total	54567	299001	4447	358015

* NTVQF level suggested by the provider

Table 8

Table 8 presents the enrollment of students/learners in the non-formal courses of varying durations by the nine selected private/NGO providers. Among the 54,567 students/ learners enrolled in the courses of duration up to three months 30% have been below Level as the self-classification made by the providers, 64% in Level 1, 4% in Level 2, 1% in Level 3 and 1% in Level 4, Figure 6.22 (a). For the duration of the non-formal courses from 4-6 months the students/learners have been self-classified by the providers as 33% below Level and 67% in Level 1, Figure 6.22(b). That for the duration of the non-formal courses from 7-12 months the students/learners have been self-classified by the providers as 6% in Level 1, 93% in Level 2 and 1% in Level 3, Figure 6.22(c).

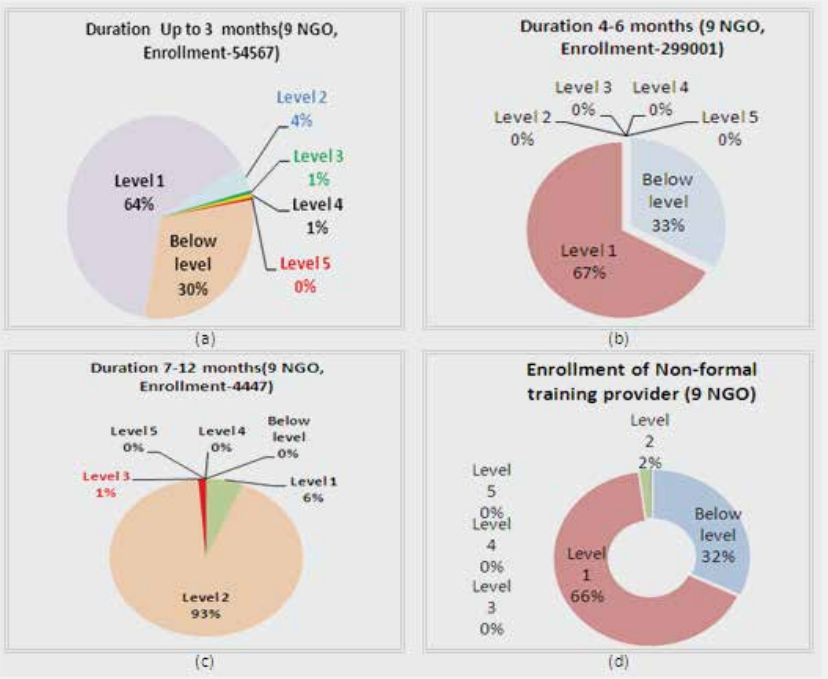


Figure : 6.22

The distribution of all the private/NGO providers' enrolled students/learners with different duration of the non-formal courses have been presented in the Figure 6.22 (d).
According to the self-classification of the private/NGO providers the student/learners with their course have been placed in the NTVQF in the proportion of 32% below Level, 66% in Level 1 and 2% in Level 2.

8.12 DEMAND SUPPLY RATIO AND GAP ANALYSIS

The demand supply ratio of the skilled workforce is one of the most important indicators to assess the development status of a country at any point of time. The demand of the industry for skilled workforce as denominator and supply of the skilled graduates by the TVET providers and from the industries' own sources as numerate decides the demand supply ratio.
A simple definition of gap is the demand of the skilled workforce by industries minus the supply of trained graduates by the education and training providers plus the industries' own sources.

8.12.1 DEMAND SUPPLY ANALYSIS AND GAP ANALYSIS FOR SKILLED WORKFORCE

Identification of demand supply gap is essential precondition before establishing demand supply ratio of the skilled workforce. To clarify the point that the meaning of the skilled workforce as treated in this context that includes all levels of workforce with skills, competence and techniques either cognitive/intellectual and or psychomotor. For the purpose of this gap analysis meaning of the range of workforce extends up to NTVQF Level 6 just below the paraprofessional or equivalent level.

8.12.2 MATCHING OF THE DEMAND SUPPLY DATA

Findings of the analysis clearly reflected that neither the demand data from the industries and manpower export presented as per skill levels of the workforce in neither the NTVQF levels nor the supply side graduates' skills are tuned to the NTVQF levels.

The NTVQF level self- classification of the employed skilled workforce from the nine sectors of the industries as demand data and Survey Team classification of the TVET formal data as supply data together with the own classification of the non-formal TVET providers data demonstrate how the demand supply should be prepared for conducting analysis and for gap analysis in order to establish demand supply ratio of the skilled workforce, Figure 6.23.

lassification of : NTVQF levels by workforce (9 sectors), formal (BTEB) and non-formal (public and private/NGO) providers

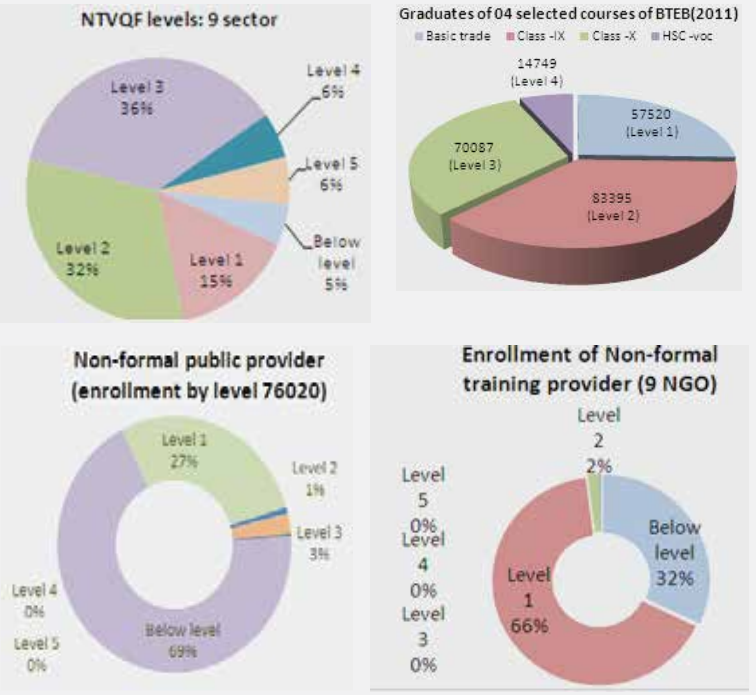


Figure 6.23

Bangladesh Bureau of Statistics (BBS) is responsible for conducting workforce survey usually every after five years, the only providers of the employment market data. The Bangladesh Bureau of Educational Information and Statistics (BANBEIS) maintains the secondary and higher education statistics, the only providers of the education and training programmes supply data.

Scanning through the BBS workforce survey 2010 and 2005 it has been observed that the reports presented limited analysis of employment pattern, sector wise distribution of age segregated employed workforce statistics mentioning education qualification as indicator of profession not by skills, competence and techniques possessed by them. The BBS workforce survey data cannot be accepted as the classified demand data for the skilled workforce as the survey did not have provision for classification of the workforce according to skill levels.

As per BBS Labour Force Survey (LFS) 2010 the total employment in the six broad sectors of the national economy was 14.5 million in 2010 with the distribution of mining and engineering 0.109 million (0.7%), manufacturing 6.731 million (47%), electrical gas and water supply 0.123 million (0.7%), construction 2.617 million (18%), hotel and restaurant 0.832 million (6%) and transport and communication 4.037 million (28%). The average national growth rate of the employment including these six broad sectors from 2005 to 2010 was 3.32% with 6.34% in manufacturing, 13% in construction, 4% in hotel and restaurant and 3.81% in transportation and communication. Demand of the unclassified workforce computed based on the annual growth rates should be approximately 0.9 million in the six broad sectors of the economy and accordingly the nation demand for the employment in the country should be 1.6 million.

As per BMET data the total manpower exported in 2011 was 568,062 with 402 categories of jobs though there was overlapping of similar categories with non-standard classification of professional 0.2%, skilled 40%, semi-skilled 5% and less skilled 55%.

With these trends the total unclassified skilled workforce demand including export of manpower should be approximately 2.168 million per year.

On the supply side, the BTEB affiliated formal courses the enrolment capacity was 447,430 and for the non-formal non-affiliated courses by the 13 public and private/NGO providers was 499,397. As per the ross estimate the total certifiable enrolment capacity of the non-formal non-affiliated courses may be

approximately 500,000. The total enrolment in the formal and non-formal courses was approximately 946,827 students/learners and this does not include the numbers receiving pre-service/normal training provided by some industries. With average passing rate of the BTEB approximately 75% the optimum number of graduates both form formal and non-formal courses with unclassified skills may be 0.71 million.

The above comparative picture demonstrates that with this trend of employment growth rate of the unclassified workforce demand supply gap should be 1.458 million each year in terms of numbers only that cannot be used by both the industries and TVET providers for planning purposes.

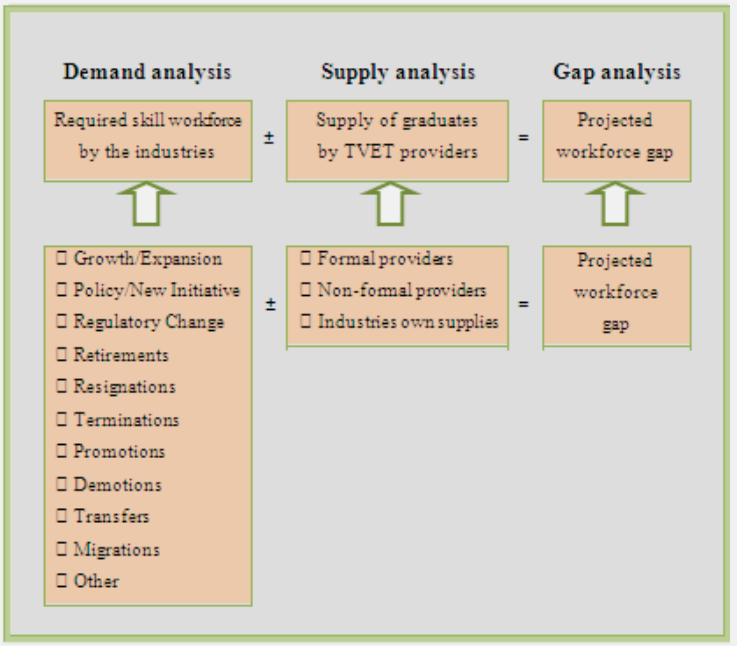
In reality, demand data of the skilled workforce should be classified according to the skills levels for Bangladesh in the NTVQF levels and with in-built provision for the projection of future demand.

The BANBEIS data are education award statistics on secondary and higher education by and large non-responsive to the employment market demand and are devoid of skill level classifications and as such these cannot considered as supply classified data for the employment market demand.

Neither the BBS data present demand of the skilled workforce nor the BANBEIS data can be treated as supply data, nor is it possible to identify the gap of skilled workforce for analysis.

However, the main steps have been presented in the Box 4 for gap analysis when the industries' classified demand data made available and education and training programme's awards are fully tuned to the NTVQF levels.

Demand and supply analysis and gap analysis



Box 4

The findings of the gap analysis when carried out for a sector for the present and the next five years will contribute to the identification of the number and type of skilled workforce with their levels that will be required by the sector in the next five years. These outcomes of the gap analysis should be the direct inputs with adjustment as necessary in the processes for the next five years to the TVET providers and to the industries' own training programme.

8.12.3 RESEARCH FINDINGS AND DEMAND SUPPLY RATIO OF SKILLED WORKFORCE

In this context just to highlight the importance of demand supply ratio an extract from ILO Asian Regional Programme on Governance on Labour Migration Working Paper No 2 2008 for the selected Asian countries: Japan was spending 3.2% of the GDP for the research and development and this figure for South Korea was 2.5%, Singapore 2.2% and Malaysia 0.7%. The research and development professionals for

one million population in Japan was 5,000, South Korea 3,000, Singapore 4,200 and Malaysia 300. This figure for Bangladesh stands at 51 (presumably not actively as relevant researchers).

This study finding recommended that investment in research and development contributes to enhanced capacity of establishing better demand supply ratio of workforce and their higher productivity. The findings also suggested that the skill level classification of the workforce is the essential precondition for establishing demand supply ratio.

What Malaysia is doing

Malaysia has planned to transform the number of highly skilled workers to at least 33 per cent by 2015 and 50 per cent by 2020 to become a developed nation. Currently, only 28 percent of the country's workforce is highly skilled. This projection has been made mandatory for the industries for their employed workforce and for the Ministry of Education (MoE) to tune education and training programme to supply graduates accordingly.

What India is doing

India has undertaken a massive programme and started implementation to produce 700 million globally employable skilled workforces by 2020 of which 200 million university graduates and above and the 500 million skilled workforce.

What happened to Australia?

According to the Department of Education Employment and Workplace Relations, Australia could fill up only 62% of the positions in 2011 for which only 1.7 qualified applicants were available. Australia's energy industry, which is driving growth with more than $150 billion worth of new projects for next 10 years is in a serious skills crisis.

Among the demand supply projection of the three countries, India's projection of globally employment of 700 million workforce appears to be more dynamic and challenging as this does not define the specificity of the skills and their levels the country's needs. Malaysia has made very specific projection directly mentioning level of skills. But in case of Australia the projection of skills crisis has been translated in terms of economic value and appears to be more sophisticated planning for skills.

8.12.4 ESTABLISHING THE DEMAND/SUPPLY RATIO OF SKILLED WORKERS IN BANGLADESH

Reference to NSS Phase 1 in Figure 6.9 where the self-classification of the employed workforce rated them in the NTVQF levels that far exceeded the level of training received by them presented in Figure 6.7. Figure 6.10 presents that the industries used components of the job profile more than they prepared because they were not capable of preparing NTVQF level demand for skilled workforce. In this context the key extracted recommendations of the industry representatives on their capacity strengthening are:

- Demand should be placed by the industry as per NTVQF levels with the job description, job specification & personnel specification.
- Capacity of the industries and TVET providers should be strengthened for placing demand and for planning & implementing training tuned to NTVQF levels.

Reference to section 6.3.1 the BMET Directors responsible for maintaining manpower export data recommended for the capacity strengthening both for placing demand for manpower export and for planning & implementing training tuned to NTVQF levels. Their key recommendations taken from Box 2 are:

Capacity strengthening is necessary for both skill training providers for tuning their training programme to the NTVQF levels and for the ISCs/industries to prepare the job content with job description, job specification and personnel specification tuned to the NTVQF levels.

Reference to the findings of sections 6.4.1 to 6.4.4 the formal TVET providers DG DTE and Chairman BTEB including CEO NSDC Secretariat recommended for their capacity strengthening for tuning the skill levels of their graduates to the NTVQF levels. Their key prioritized recommendations extracted from Box 3 are:

- capacity of the TVET providers should be strengthened for planning and implementing the training tuned to NTVQF levels;
- NSDC Secretariat should coordinate all formal and non-formal skills training.

It has become distinctly clear from the recommendations of the industries and manpower exporting agency and TVET providers that they need capacity strengthening for preparing demand for skilled work-force in the NTVQF levels with job description, job specification and personnel specification.

In the similar way, the TVET providers recommended strongly that their capacity should be strengthened for tuning their training courses to the NTVQF levels for preparing their graduates with skills ready for employment in the industries.

Implementation of the above mentioned very important recommendations of the industries and the TVET providers warrant establishment and operationalization of a demand supply analysis and gap analysis mechanism at the national level by the NSDC fully staffed by professionals with high level of competences in the demand supply analysis and gap analysis.

Within the frame of the NSDP the NSDC should be entrusted with the responsibility of establishing and operationalizing the mechanism along with the BTEB in close collaboration with the industries.

8.12.5 ESTABLISHING WORKFORCE DEMAND SUPPLY ANALYSIS AND GAP ANALYSIS MECHANISM

Establishing and running a demand supply analysis and gap analysis mechanism for skilled workforce for the present and future and for the supply of skilled graduates by the public private and formal non-formal TVET providers is the essential precondition for the supply of classified skilled workforce in the country. Box 5 presents the mechanism with the main steps and projection in three phases from 2013-2015, 2016-2020 and 2021-2030 focusing the BBS Workforce Survey 2010 data of 54 million employed of workforce and 36 million unemployed working age population. This mechanism should be used along the steps recommended in the Box 4 for carrying out demand and supply analysis and gap analysis.

Workforce Demand-Supply Analysis and Gap Analysis Mechanism with projection in three phases

Main Steps in Demand – Supply analysis and Gap Analysis	**Workforce jobs and education and training awards classification in NTVQF**	**65 million working age population**	**75 million working age population**	**105 out of 120 million working age population (LDR) in 2030**	**Remark (Employment rate 87.5%)**
		1st phase Indicators 2013 – 2015	**2nd phase Indicators 2016 - 2020**	**3rd phase Indicators 2021 – 2030**	
1 Workforce: 1.1 Positions assessment in terms of job description	Individual workforce job description refined/prepared, process established	80% workforce positions with clear job description	100% workforce positions with clear job description	All employed workforce with job description	
1.2 Competences assessment in terms of job specification and personnel specification	Competences for skilled workforce including professional classified in terms of NTVQF through interview/discussion and their profile prepared and on-going process set for regular use	(a) 40% workforce with NTVQF 1- 3 by testing (b) 40% of professional workforce with NTVQF 6-9 as paraprofessional and / professional	(a)50% workforce with NTVQF1-5 by testing (b) 40% professional workforce with NTVQF 7-10 and 400 researchers per one million population	(a) 60% workforce with NTVQF 3 - 6 by testing (b) 50% professional workforce with NTVQF 7 -10 and 1,000 researchers per one million population	NTVQF needs to be reviewed and extended from present levels 1 – 6 to 1-10 for inclusion of professionals/
2. **Supply of skilled workforce** 2.1 TVET sub-sector providers and industries/ employers	Profile of all present TVET sub-sector public and private providers' awards (Programme) tuned to the NTVQF 1-6 and on-going process established for new awards	(a) 20% of the TVET graduates awarded NTVQF 1 –5/ 6 by the BTEB (b) 20% of the working age educated/illiterate population provided skill training for NTVQF 2 – 3 (c) Industries / employers providing skill training to 20% of the employed workforce for NTVQF 2 -- 4	(a) 30% of the TVET graduates awarded NTVQF 1 –5/ 6 by the BTEB (b) 30% of the working age educated/ illiterate population provided skill training awarded NTVQF 2 –4 (c) Industries / employers providing skill training to 30% of the employed workforce for NTVQF 2 -5/6	(a) 50% of the TVET graduates awarded NTVQF 1 –5/ 6 by the TVET providers (b) 50% of the working age educated/ illiterate population provided skill training awarded NTVQF 2 – 6 (c) Industries / employers providing skill training to 50% of the employed workforce for NTVQF 2 - 6	

2.2 University/ tertiary education institutions	Public/private universities and other tertiary education awards (programme) tuned to NTVQF 7 – 10 with on-going processes	(a) 40% of the graduates with NTVQF 7 -10 as processional and researchers (b) University/ tertiary enrolment raised from present 7% to 10% of age group	(a) 60% of graduates with NTVQF 7 -10 as processional, researchers/ policymakers (b) University/tertiary enrolment raised to 15% of age group	(a) 90% of the graduates with NTVQF 7 -10 as processional , researchers/ policymakers (b) University/ tertiary enrolment raised to 30% of age group	(a) University/ tertiary education enrollment raised from 7% to 30% of the age group
3. Gap analysis of demand supply of skilled workforce employment as regular process	Analysis of matching of skilled jobs classification and education and training providers award tuned to NTVQF 1 - 10	Analysis of: (a)National and global employment market demand (b)Education and training providers' graduates (c) Gap between (a) and (b)	Analysis of: (a)National and global employment market demand (b)Education and training providers' graduates (c) Gap between (a) and b)	Analysis of: (a)National and global employment market demand (b)Education and training providers' graduates (c) Gap between (a) and (b)	Gap of demand - supply of skilled workforce established in NTVQF 1 – 10 and projection made and updated as regular process for all providers in phases
Box 5					

The detailed planning for operationalization of the Mechanism can be found in the book "Capacity Strengthening on Policy and Performance Analysis and TVET Sub-sector Programme Preparation in Bangladesh ID: 3085069"
E-published by the Amazon Kindle Direct Publishing, November 2012.

The full achievement of the three phases will ensure transformation of 87.5% of the working age population as skilled and highly skilled workforce that should place Bangladesh in the group of the developed nations of the world by 2030.

8.12.6 SHARING OF SURVEY FINDINGS WITH STAKEHOLDERS

With a view to obtaining pinions and views of the stakeholders including development partners on the findings of the NSS a meeting was organized on 8 December 2012. The meeting was presided and moderated by Ms Rasheda K Chowdhury former Adviser to the Caretaker Government and Executive Director of the Campaign for Popular Education and Kazi Saleh Ahmed former Vice-Chancellor of the Jahangir Nagar University was the key note speaker.

The meeting started with a briefing on the background of the NSS Phase 1 followed by power point presentation highlighting the key findings of the NSS Phase 1. Following the address of the keynote speaker the floor was opened for comments, suggestions, clarifications, discussions, opinions and recommendations from and by the participants/guests.

The findings of the survey were also shared in the SDC office conference room in an exclusive session on 14 December 2012 through a presentation followed by discussions and clarifications.

8.12.7 RECOMMENDATIONS

As a result of analysis and synthesis of the findings of the data and opinions/recommendations received through the FGDs along with the outcome of the two discussion meetings conducted with formal TVET providers and manpower exporting agency and the outcome of the sharing meetings with the stakeholders, a series of recommendations have immerged and important among are:

A Demand should be placed by the industry for the present and for the future phases as per NTVQF levels with the job description, job specification & personnel specification;

B Capacity of the industries and TVET providers should be strengthened for placing demand and for planning and implementing training tuned to NTVQF levels;

C TVET providers and industry should jointly set demands and implement training programme tuned to the NTVQF levels;

D National Skill Survey initiatives must be continued with urgency to cover all industry sectors and all other sectors employing skilled workers with a view to operationalizing the NTVQF standards for accelerated economic growth;

E The NSDC should be established by an Act of the Parliament in order to act as the national coordinating authority for skill development and should be staffed by professionals with high levels of competence in the six key functions and eight supporting functions outlined in the NSDP;

F Within the frame of the NSDP, the NSDC should be entrusted with the responsibility of establishing and operationalizing the demand supply and demand supply gap mechanism along with the BTEB, in close collaboration with industry;

G NTVQF levels should be extended to level 10. Paraprofessional will be Level 7, Professional will be Level 8, Researcher will be Level 9 and Policymakers (including politicians) will be Level 10;

H Skill training should be integrated with general education in the NTVQF levels;

I Capacity of the policy makers and all other concerned in planning and implementation of TVET programmme at the NTVQF levels should be strengthened.

J Public awareness should be enhanced on the importance of the NTVQF levels and their implementation;

K Overseas exporting of skilled workforce should gradually be tuned to NTVQF levels;

L Skills demand surveys should be conducted in the countries where there is high potential for exporting classified workers where sizable numbers of Bangladeshi skilled workers are in demand and where demand is growing for the skilled workers;

M The draft Bangladesh Standard Classification Occupations (BSCO) should be reviewed, improved and adopted;

N Arrangements should be made for overseas employed skilled workers in consultation with the host country. If there are adequate numbers for updating and upgrading skills including assessment and certification should be encouraged;

O BTEB must engage in research on the trends and rate of change of skill workforce job contents in collaboration with the ISCs and NSDC to regularly update curriculum contents;

P Employers and TVET providers should be proactive on gender equity and inclusion of disabled and disadvantaged groups;

Q Allocation of approximately 2% operation of the BTEB's own budget should be earmarked and used for research, establishment and operation of a database to monitor the implementation of the affiliated TVET courses;

R BTEB must undertake clear programmes urgently for strengthening their organizational and institutional capacity.

SKILLS SNAPSHOT PART II: QUANTITATIVE ASSESSMENT OF SKILL DEMAND AND SKILL GAP

9. QUANTITATIVE ASSESSMENT OF SKILL DEMAND AND SKILL GAP

9.1 BACKGROUND AND OBJECTIVES

During the last two decades Bangladesh has achieved considerable success both in terms of acceleration of economic growth and in terms of social development, especially poverty reduction. The pace of acceleration of economic growth has however, been slowed down or even reversed in some of the recent years and therefore all out efforts will be needed for further acceleration of GDP growth.

In the modern period, economic growth and even social development are conditioned by improvements in technology and innovation. This in turn requires improvement in skill and knowledge base. In the globalised world of present day, there are continuous flows of technology. Skill development can play a critical role in grasping the opportunities offered by the progress of technology. In fact, the 'new growth theories' (Barro 1991, Barros 1993) recognize the role of human capital, education and skill as important contributors of economic growth.

The government of Bangladesh has considered the importance of skill development as an important strategy for achieving faster adoption of modern technology. This has been reflected in the continuous efforts for expansion of skill development capacity and improvement of quality of skill available. In this context, the National Skill Development Policy has been framed with the objective that it will 'guide skill development strategies and facilitate improved coordination of all elements of skill training and the parties involved.' (BNSDP 2011).

The National Skill Policy aims to expand demand driven, flexible and responsive training. Such provision requires 'capacity with agencies, industries and authorities to identify and communicate the demand for skills.' (BNSDP 2011).

The above objectives require development of a strengthened system for understanding and anticipating the labour market's demand for skills.

The present study will therefore provide estimates of demand for skills at present and arrive at some projections for next two years. It will examine whether there are skill gaps in some major sectors.
It will also present qualitative findings on the skill demand-supply gap in general and discuss the role of the existing TVET system in meeting the skill requirement of the country. The study discusses some major aspects of the supply of skills though various channels.

Appropriate policy suggestions will be provided for improvement of the system including plan for a NSDC data base.

9.2 SCOPE AND ORGANIZATION OF THE PAPER

In addition to the discussion of the background and objectives of the study, the first section presents the scope of the paper. It also discusses the data sources used in the study. Section 2 provides assessment of skill gap at the aggregate level. It will include an explanation of the indicators and methodology used for provision of empirical evidences as well as actual findings.

Section 3 presents skill demand projections disaggregated for sectors.

Section 4 examines the supply of skills though various channels.

Section 5 discusses qualitative findings on demand-supply gap of skill and discusses the role of the existing TVET system in meeting the skill requirement of the country.

Section 6 presents a plan for NSDC to put in place a skill data base. It will also include suggestions for utilization of NTVQF in the context of skill development in Bangladesh.

Section 7 presents some general recommendations and concluding observations.

9.3 SKILL GAP: QUANTITATIVE ASSESSMENT AT AGGREGATE LEVEL

An assessment of the balance between demand and supply of skill ("skill gap") should be made at both aggregate level and also for individual sectors, sub-sectors. Sub-sectors within industry deserve special attention since the technology and investment level within the sub-sectors are expected to be diverse, creating different types of demand for skills. The present section will provide an assessment of aggregate skill gap.

The methodological and conceptual questions require clarification of the outset. In this context the relevant question is whether we arrive at aggregate supply gap on the basis of the supply gaps for the individual sectors or through some direct assessment. If it is the former, then the first step would be to assess the sector wise skill gaps.

In the context of Bangladeshi labour market, the estimation of sector wise skill gap can be quite problematic.[1] Therefore an independent assessment of the presence of excess supply/demand through the use of proxy indicators at aggregate level can serve useful purposes.

This exercise can be an essential first step in countries like Bangladesh where there is a deep rooted pessimism about the usefulness of skills and the vocational training system imparting such skill. It is true that the vocational education system in Bangladesh was initiated in early phase of development when industrialization was at a rudimentary stage with minimal demand for skilled labour force. Moreover, technical education was socially less acceptable than the general stream. As a result, enrolment in the vocational institutes was less than the capacity and the diploma holders faced widespread unemployment, or it was believed to be so. There is thus a need to make a fresh assessment of whether the pessimistic scenario is an accurate description of the present picture.

A recent assessment of the employment/unemployment situation of TVET diploma holders has been done by the World Bank (2007). The study used tracer survey conducted in 2007. Survey data shows high rates of unemployment. This is in conformity with the prevailing notion of low usefulness of skill training.

There is need for caution in interpreting or unconditionally accepting the findings of WB (2007) Report. The loopholes in the survey methods can lead to overestimation of unemployment rates. Major reason behind this is the expectation of survey respondents that reporting unemployment status may lead to some form of benefit. Moreover, those who were not willing to participate in the labour force and were not looking for job may report themselves as unemployed. The third reason is that those involved in self/family employment may not consider/report themselves employed unless specific probing is done.

Another factor may be responsible for TVET diploma holder remaining unemployed or not participating in employment. This is the geographical concentration of industrialization in Dhaka and Chittagong area whereas the trained people are scattered over rural areas of all regions. Quality of training is also important in this context. Industries wish to employ persons with more specific skills and with practical experience which is often lacking among the recognised TVET trained persons.

The following analysis proposes to present information based on alternative sources of data and thus assess the unemployment situation of those with vocational/technical qualifications. Fresh data used for this analysis include: (a) Estimates of unemployment rate and labour force participation rate (LFPR) for those with technical education using Labour Force Survey 2010 data (b) Employers' views on the adequacy of skilled workers, (c)Impact of training on wage

1. The problems will be elaborated later in Section 4 while sectoral assessment is attempted.

9.4 UNEMPLOYMENT RATE AND LFPR AMONG THOSE WITH VOCATIONAL/TECHNICAL TRAINING

Analysing unit records of LFS data, unemployment rates have been calculated for male and female labour force and has been broken down for various education levels. Data for SSC, HSC and technical diploma has been presented in Table 2.1.

Before a discussion[2] of the data it should be mentioned that LFS gives very low unemployment rate which is often attributed to the fact that in the formal labour market, workers do not actively search for jobs they do not consider themselves unemployed, being usually engaged in some family employment. The definition of open unemployment is relevant for only those with some education and seeking job in the formal labour market.[3] Therefore in the present context we shall focus on only those with education (SSC/HSC/technical) for whom unemployment data can be dependable.

Data presented in Table 2.1 shows very low unemployment rate among those with technical training. The rates are much lower than those with general education (SSC/HSC).

Moreover, unemployment rate among those with technical qualification decreased during 2006 to 2010. It implies that during this period demand for skills increased because of acceleration of economic growth without much increase of supply of such skills produced by VTI.

Again one cannot rule out problems of data quality. It can be argued that some of the skilled persons may not report themselves as labour force members because knowing that there is no job, they do not opt for job search, whereas in tracer surveys everyone with technical diploma are followed up. To examine whether it can be a serious problem, some more data analysis has been done. For various levels of education, estimates of labour force participation rates have been obtained. These are shown in Table 2.2. Data shows that LFPR is highest among those with technical skills. In fact, it is much higher than those with SSC/HSC levels. This is a positive aspect that those with technical skills are more likely to be either employed or seeking jobs.

In section 5 we shall consider whether employers' views about skill shortage/excess are commensurate with the above findings of low unemployment rate.

9.5 INDIRECT ASSESSMENT OF WHETHER TECHNICAL/VOCATIONAL TRAINING IS IN EXCESS SUPPLY

An indirect test of whether there is excess supply of technical/vocational training in Bangladesh's labour market is to examine the contribution of such training on productivity/ wage. In the following exercise, such test has been done on the basis of LFS 2010 data of BBS.

Econometric analysis of unit records of data of Bangladesh Labour Force Survey 2010 has been conducted. Regression equations on wage/salary have been estimated using OLS method. Dependent variable has been used in logarithmic form.

Explanatory variables used in standard earning function analysis have been included as independent variables. These variables include human capital in the form of education and training. Other variables include dummies for region (six division), sex of worker, etc.

Four levels of education including primary; secondary and higher secondary; Bachelors, Masters, specialized higher education (medicine, engineering); and technical/vocational diploma have been used.
Three equations have been estimated, one each for urban, rural and aggregate sample (Table 2.3). Explanation of all the coefficients is not required in the present context. Only the coefficients of education dummies and training receive attention. The results show significant positive impact of vocation/technical diploma on wage/salary. The value of the coefficient of this dummy is higher than the coefficient of SSC/HSC and is close to the higher education dummy's coefficient. This rules out the hypothesis of excess supply of trained personnel.

A separate dummy variable 'whether received any training' over and above each education level has also been included as independent variable. Its coefficient is also positive and significant which implies that more supply of trained personnel would be in demand in the labour market.

2. Data for all individuals aged 15+ years. Rahman (2006) provides a discussion of enumeration and definition related problems which result in low unemployment rate
3. The questions to identify unemployed workers ask whether one was without work and was 'looking for job".

The picture of skill shortage depicted above through quantitative analysis is similar to findings for other Asian countries.

A recent survey in India (FICCI 2013) shows that an overwhelming majority of enterprises face labour shortage and as a response they are 'offering special training to unemployed youth and hiring them for company operations'.

In an article by World Bank it was commented that 'Insufficient supply of quality skills is one of the impediments to further economic growth in India" (quoted by Economic Times' of India 05-06-2011). Another study says 'The primary challenge faced by 76 per cent of Indian business is the shortage of technical or specific skill (www.moneycontrol.com/ smementor/over-two thirds of Indian businesses face skill shortage). The problem haunts China and South-East Asia as well and a survey shows that it is the businesses' major problem. Japanese enterprises ranked skill shortage as the second largest problem (Ithe Economist, 2007, Asia's Skill Shortage. Capturing Talent).

The government documents also recognize India's skill shortage as a key constraint, "The lack of adequately skilled workforce is now regarded as one of the main obstacles to sustaining the current rate of (economic) growth" P 112 ILO, MOLE Government of India (2009).

Table 9

Unemployment rate among labour force with vocational training and general SSC/HSC holders in Bangladesh

Qualification	Unemployment rate (%)	
	2005	2010
SSC	7.78	7.33
HSC	9.98	13.74
Technical/Vocational	6.99	1.20

Source: Estimated from LFS (various rounds).

Table 10

LFPR among persons with and without skill training

	LFPR (per cent)
None	58.7
Technical/vocational training	68.6
Catering service training	72.1
Tailoring/garments training	74.1
Foreign language training	71.2
In service training	85.4
Nursing training	63.0
Youth development training	72.5
Others	79.2
Total	

Source: LFS (various rounds).

Table 11

Determinants of wage: Results of OLS regression

Dependent variable: Log of wage/salary per day

Independent variables	Rural	Urban	National
	Coefficient	Coefficient	Coefficient
(Constant)	4.725***	4.611***	4.720***
Age	.014***	.026***	.018***
Square of age	.000***	.000***	.000***
Primary dummy	.077***	.118***	.095***
Secondary dummy	.116***	.234***	.168***
SSC/HSC dummy	.197***	.509***	.333***
BA/MA dummy	.361***	.836***	.626***
Technical education dummy	.260***	.685***	.483***
Regular salaried employee dummy	.347***	.039*	.236***
Public dummy	.129***	.098***	.127***
Own land (decimal)	.000***	.000***	.000***
Head dummy	.023**	.122***	.045***
Whether received any training?	.057***	.072***	.064***
Barishal dummy	.108***	-.106***	.018*
Chittagong dummy	.058***	-.173***	-.045***
Khulna dummy	-.179***	-.362***	-.262***
Rajshahi dummy	-.120***	-.204***	-.183***
Rangpur dummy	-.258***	-.299***	-.316***
Sylhet dummy	.041***	-.010*	-.014***
Sex	-.025*	-.045***	-.047***
Value of F	376.75**	212.52***	600.19***
Adjusted R-square	0.19	0.27	0.21

Note: *, **, *** denote significant at .10, .05, .00 probability level.

Source: Estimated from unit records of LFS 2010.

9.6 SECTORAL DEMAND STRUCTURE FOR SKILLED LABOUR FORCE: CURRENT SITUATION AND FUTURE PROJECTIONS

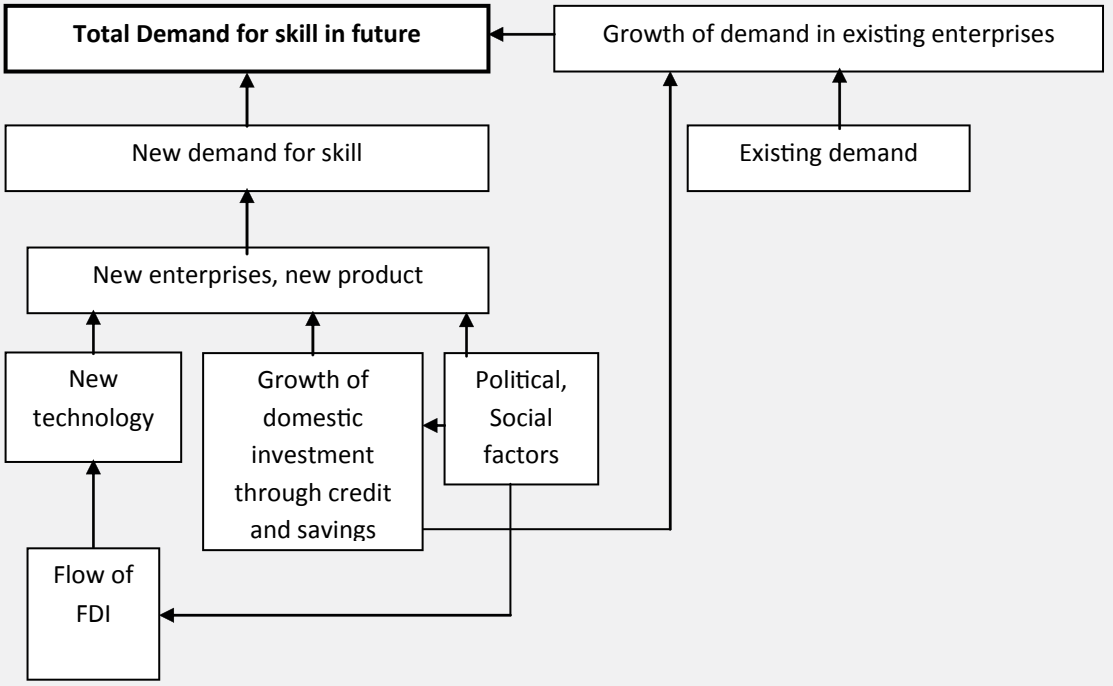
9.7 CURRENT STRUCTURE OF SKILL OF WORKERS IN DIFFERENT SECTORS

Projection of skill demand in a sector usually uses the current demand as the base. In this context some conceptual and a few practical problems must be discussed.

First, it should be recognized that the current skill composition of labour force in a sector does not fully reflect the demand at this point of time. The observed composition also depends on the supply situation. If there is excess supply of skills, then the present structure would reflect demand size forces. In contrast, if there is skill shortage, then the present structure will actually reflect an equilibrium situation where the skill shortage has been taken into account. Discussion and data presented in the previous section in fact points towards the presence of skill shortage. In this context one needs to take into account the factor influencing the demand for skilled labour. These are shown in Figure 6.24. The figure reveals that savings, investment (domestic and FDI) and technology are important forces in generating demand for skilled labour.

Figure 6.24

Factors Influencing Demand for Skilled Workers in Industries



The projection of demand/ requirement of skilled workers should be ideally based on employers own assessment of current requirement and future requirement. The sectoral skill demand assessment presented in the following Section of the reports will be based on employers assessment when such data is available (for IT sector only, such data has been provided by a study).

In the absence of breakdown of such data by skill categories, the present composition of labour force has been used as the proxy indicator for a sector.

The NSS Phase 1 and a few other sources provide such data. Comparison of these data will be useful before information from a specific source is used for projections. (NSS Phase 1 data includes demand for various types of skills in nine sectors)

Table 12 shows the structure of skills in various sectors and for which more than one source of data is available, both have been presented.

Table 12

Share of various skill categories in different sectors

Sector	Skilled + high skilled	Semi-Skilled	Unskilled
Agro-food	6 (37)*	18 (12)	75 (51)
Construction	4 (7)**	36 (10)	60 (83)
IT	53 (70)	18 (11)	29 (19)
Leather	21 (26)	4 (7)	75 (67)
Water transport	67 (43)	29 (27)	4 (30)
RMG	6	48	46
Informal skill	6	23	71
Light Engineering	0	19	81
Tourism & Hospitality	69	23	8

Source: Calculated from NSS Phase 1 data.

* Figures in parenthesis are from other studies (Rahman et al 2012).

** Figures in parenthesis are from a study on India, (NSDC of India 2009). The large difference between shares of different skill categories highlights the influence of the definition or notion of skills. For example, the structure of construction sector would not be too different in India and Bangladesh but the shares of different groups of skills are quite large.

NSS Phase 1 data is based on survey of workers and their self-identification of skill level. Since the data of NSS Phase 1 has been presented in terms of NTVQF which has 5 levels (below post-graduate level), it is difficult to establish comparison with other studies which use three/four categories.

NSS has two levels below the semi-skilled (medium skilled NTVQF2 and basic skilled NTVQF1). Are these two to be treated as unskilled and below semi-skilled? As a practical solution, these two (NTVQF1 plus NTVQF2) have been treated as unskilled. NTVQF3 has been classified as semi-skilled and this has been treated same as this group in other studies. NTVQF4 has been treated as skilled in NSS Phase 1 and this is equivalent to skilled in other studies. More work on the conceptual integration is required.

Data based on such classification reveals that there are differences between two data sources. This may have been due to the difference in survey method. But some of the difference may have resulted from the classification and aggregation discussed above. The other sources give data for the three groups directly and the present projections will be prepared for these groups (unskilled, semi-skilled, skilled + high skilled and not for NTVQF levels) these groups have been used as the base. Difference between NSS provided structure of employment and other sources are large for agro-food, leather and RMG sectors. For IT and water transport/ship building, these are close.

9.7.1 SKILL DEMAND

The National Skills Survey Phase 1 was commissioned to assess the demand for skilled workforce in selected sectors of industries. Such assessment of demand has been based on data on supplied by ISCs. These data have been used in NSS Phase 1 report to produce projections for skilled labour demands in 2013, 2014 and 2015.

The usefulness of this data and the limitations will be highlighted in the following discussion through comparison with some indirect evidences. Demand assessment provided by NSS with the support of ISCs is possibly for the surveyed enterprises only (it cannot be total for whole sector, as the figures are small). Therefore these projections cannot be compared or correlated with the projections provided in the following parts of this Section which are for the whole sector. However, in some sense, the ISC/NSS data provides a micro basis for the macro projections since the skill shares for some of the sectors have been taken from NSS Phase 1 report.[4]

The projections for 2013 to 2015 (Table 3.2) have been reproduced from NSS Phase 1 report. These projections have been summed for obtaining total skilled work force demand during the three years.

The percentage changes given by the projections in a few sectors have been calculated (Table 13). Column 7 of the table shows the percentage change in 'Index of quantity of production.' In RMG and in light engineering, the rise of demand is much higher than rise of QIP and this castes doubt to the overall projection. In fact, total employment in RMG has grown at a slower pace according to other data sources (4.56% per annum compound rate). The demand for skilled workers may rise to higher extent; say by 5-10 per cent if the share of skilled workers in total goes up. But 80 per cent increase is rather on the high side.

Moreover, if one considers that it is quite likely that the number of enterprises in each sector will change (in most cases rise), then the projection for only existing enterprises as done by NSS Phase 1 is not sufficient. In fact, for most sectors it is logical to expect that a predominant share of new employment will be generated by new enterprises.

4. Team leader explained it as total for the units surveyed.

Table 13

Projection of skilled workforce demand from ISCs (Total)

Sector	2012	2013	2014	2015	Total for 2013 to 2015	% change in QIP during 2005-2010
Agro Food	6186	545	0	0	545	35
Construction	4759	778	852	1473	3103	na
Informal Skills	7334	1498	1407	1416	4321	na
IT	2223	421	530	800	1751	na
Leather	9791	3720	860	1161	5741	48
Light Engineering	113	59	77	89	225	20
RMG	8042	2974	1766	1881	6621	69
Tourism & Hospitality	405	11	0	0	11	na
Water Transport	1903	655	1403	1833	3871	na
Total	40756	10661	6895	8653	26209	na

Source : Column 2 to 6 from NSS Phase 1 and Col 7 from BBS, SYB (2010)

Therefore new estimates of current employment at various levels of skills and demand projections for a few sectors have been presented below.

9.7.2 Still Demand: Ready Made Garments (Sector)

The common notion about RMG sector in Bangladesh is that it is a labour intensive sector with high dependence on unskilled labour. However, studies have shown that around 70 per cent of the workforce are either skilled or semi-skilled and approximately 5 per cent are highly skilled professionals. This data is a few years old and current situation may have changed in favour of larger share of skilled workers.[5] Such skills usually do not include formal degree/diploma and have been acquired through on the job experience. Employers are aware of the usefulness of such skill and its shortage.

The current employment and its growth rate have been based on data provided by BGMEA sources (www.bgmea.com.bd/chart/number of employment).

The following data has been used to generate total employment figures for 2015

Actual employment in 2009:	3.5 million
Actual employment in 2012:	4.0 million
Compound Growth rate of employment (% per annum):	4.55
Total employment projected for 2015:	4.57 million

The skill composition of current employment and projections for 2015 has been presented below (Table 14).

Table 14

Projections of skill demand and actual skilled employment in RMG

Type*	Actual 2012	2015 (Projection, in 000)	
	(in 000)	Same share of each skill as in 2012	5% higher share of skilled and semi-skilled & 10% less unskilled
Professional	232	256	256
Skilled	1772	2025	2126
Semi-skilled	1196	1366	1434
Unskilled	800	914	822
Total	4000	4570	4570

* Skill shares used in the estimates are as follows:
Professionals: 5.8%, skilled 44.3%
Semi-skilled 29.9%, unskilled 20.0%
Source: www.docstoc.com/docs/80664021

5. There is need for rigorous research on present skill composition of RMG workers and future demand for skills.

The increased demand for skilled labour can possibly be met through upgrading of skills of currently employed semi-skilled and unskilled workers, if workers with training from formal public/private institutions are not available. However, in near future, demand for RMG export may go through a change and export of higher end products may rise which will lead to rise of demand for skilled workers at a much faster pace as indicated in the last column of Table 14 which cannot be met from the stock of internally trained workforce. The industry and relevant training organizations should take note of the situation and prepare for future skill demand.

9.7.3 Skill Demand: IT Sector

Skill demand in IT sector cannot be projected by linking it to output growth since IT services go as inputs to many sectors. Assessment of output/value addition of this sector is even more difficult to assess than the employment and no reliable estimates of time series of such value addition is available. Therefore the estimates of employment have to be generated directly through data provided by enterprises.

A recent study (Kamaluddin 2010) on IT sector provides good quality data on employment and skill demand. These estimates have been arrived at on the basis of a number of innovative steps. Although a full-fledged survey of enterprises have not been done.

The study provides data for 2009 to 2013 and projections up to 2015. These data have been quoted in Table 15 and 16.

Table 15

Skill Requirement and Forecast in IT

Main Drivers Activities	Employment in the Main Drivers			
	2009	2012	2015	2012
Cyber Cafe and Gaming Centers	24,000	35,000	55,000	90,000
ICT Hardware Support	20,000	45,000	85,000	150,000
Web Development/ Content Management	2,400	6,000	13,000	54,000
DTP and Graphics Design	18,000	30,000	45,000	90,000
Computer Applications Training Center	20,000	26,000	35,000	50,000
Software Testing	1,500	3,000	10,000	30,000

Source: Kamaluddin 2010

Table 16

Skilled Employment Projection in IT

Category	Present (2010)	5 Years	10 Years
IT Technicians	20000	60000	150000
IT sales Executive	20000	40000	60000
Graphic Multimedia	20000	30000	40000
Web Developer	2000	5000	8000
Digital Content Dev	500	5000	10000
Animator	1000	4000	8000
Audio-Video Editor	2000	6000	8000
Call Centre Agent	500	10000	20000

Source: Kamaluddin 2010

9.7.4 Skill Demand: Leather Sector

Leather sector in Bangladesh has some major components, namely, tannery, footwear and leather goods. These components consist of both unskilled labour using operations as well as skilled labour intensive operations. This is the industrial sector with highest share of unskilled workers. However, the share of skilled labour will vary among the three components of the sector.

The projection of demand for this sector has been based on the data on total available and required labour during 2009 to 2013. Based on the growth during this period, the projections have been obtained for 2014 and 2015. To obtain shares of three types of workers, the shares given by Rahman et al. (2012) have been used. Table 17 presents data on the projections. As shown in the last column, in 2015, the sector will feel shortage of skilled and semi-skilled workers to the extent of 17.7 and 4.8 thousand which may be even higher with technology changes and product quality improvement.

Table 17

Projections of labour requirement and labour available in Leather sector

Category	Share in** Total (%)	Available*		Required*		Skill gap
		2014	2015	2014	2015	2015
Total		449964	482856	512462	551922	76098
Skilled	25.6	115190	123611	131190	141292	17681
Semi-skilled	6.9	31047	33317	35360	38083	4766
Unskilled	67.4	303275	325444	345400	371995	46551

Source : Kamaluddin (2010) and estimation by author

* Growth rate per annum based on growth rate of past four years has been used in the projection. For available and required, the growth rates are 7.31 and 7.70 per cent per annum respectively.
** From the study by Rahman et. al. (2012).

9.7.5 Skill Demand: Food Processing Sector

Projection for food processing industry has been presented in Table 18.

Table 18

Projection of demand and available workers with different skill levels in food processing industry

	Available		Additional Required	
	2013	2015	2013	2015
Total	274550	359502	35108	54191
Skilled + high skilled	131784	172561	16852	26012
Semi-skilled	87856	115041	11234	17341
Unskilled	54910	71900	7022	10838

Source: Estimated on the basis of data from Kamaluddin (2010).

Data on availability and additional requirement for 2008 and 2013 has been adopted from Kamaluddin (2010). Based on this data, the compound growth rate (per cent per annum) has been calculated and these are 14.43% and 24.24%. On the basis of these growth rates, the total figures (of availability and additional requirement) have been projected for 2015. Then the projections for each component of skill type (skilled, semi-skilled and unskilled) have been done on the basis of the share of the three components in year 2008, which were 48%, 32% and 20% respectively.

Thus the skill gap in 2015 may stand around 43,000 which is quite large.

9.7.6 Skill Demand: Construction and Tourism

Projections of skilled and unskilled labour in construction section and tourism and hospitality sector have been presented in Tables 19 and 20. In construction sector projection is based on 7.85% per annum growth rate of employment. The growth rate has been calculated on the basis of data from LFS 2003, 2010. Then using the growth rate and shares of each skill type, (Rahman et al 2012) the last two columns have been obtained.

Table 19

Projection of skill demand in construction sector

Type of worker	Share (%) in 2012	Projected labour force*	
		Number (000)	
		2013	2015
Skilled + high skilled	4	131.4	152.8
Semi-skilled	36	1182.2	1375.2
Unskilled	60	1970.4	2292.0
Total	100	3284.0	3820.0

Source: Estimated on the basis of LFS data.

Projections for tourism and hospitality are based on rate of growth of employment of 5.78% per annum. Growth rate has been estimated on the basis of data from LFS 2003 and 2010. Then the shares of skill types (Col. 2) have been used to obtain the disaggregation of projected employment in 2013 and 2015.

Table 20

Projection of skill demand in the tourism and hospitality industry

Type of worker	Share (%) in 2012	*Projections of number workers (000)	
		2013	2015
Skilled + high skilled	69	678.3	759.0
Semi-skilled	23	226.1	253.0
Unskilled	8	78.6	88.0
Total	100	983.0	1100.0

Source: Estimated on the basis of LFS data

Finally it should be clarified that the above projections of skill demand and skill gap provides only some rough approximations. These are based on secondary materials and in some cases data quality may not be ideal. So these can provide some guidelines. In future better estimates should be targeted through better quality data covering all major sectors. For two sectors, informal skills and transport equipment, skill demand could not be estimated due to lack of data.

9.8 THE SUPPLY SIDE

There are two major types of courses provided by BTEB affiliated institutions: (a) SSC and HSC vocational/business management (BM) and (b) Diploma courses. SSC and HSC levels with vocational/business management have been recognized as vocational skills. This stream has a large supply (Table 21). In comparison, the supply of those with technical institutes' diploma is much smaller. The latter is 66406 while the former group has enrolment of 270,956 in 2011. However, the size of diploma holders, especially those from private organizations have been growing rapidly (approximately 18% per year). In fact, this implies that there is demand for skills from employers and such employment prospects generate demand for training from private providers by persons who would enter labour market.

The role of private sector institutions has been growing as providers of TVET, for all levels (Table 22). In view of the large supply of both SSC/HSC vocational and private diploma holders, the quality of skill of these groups must be assessed and monitored.

Recent studies (Education Watch 2013, WB 2012) show that the labour force participation rate and employment rates are low for HSC Voc/BM group. The following reasons may be at work behind this:

- Those who take up these courses do so not with the objective of joining the labour force but because it is easier to get good grades in this stream and such grades make the entry into higher education easier.
- The skill attained by this group is not adequate for making them attractive skilled labour force and therefore there is lower demand.

- Moreover, those who do not go for higher education from this group are those who are weaker in terms of aptitude and quite interlinked is that their ability to search jobs is also weak.

Given such weaknesses of this stream, there is need for rethinking the role of HSC voc and BM courses. The large enrollment in these courses will give the misleading impression that skill supply is large and there is no demand for TVET supplied skills. Therefore urgent review in this context is required.

An important problem with supply data is that it is difficult to draw equivalence with NTVQF levels. Although the 'Skill Development Policy' provides some equivalence, the basis and accuracy remains questionable.

The other dimension of the problem is that in most of the supply data, the suitability of destination sector cannot be specified. Some breakdown of supply by type of diploma has been provided in Tables 23, 25, 26 and 27.

The other point on the supply side which needs highlighting is the efficiency of the system in terms of total enrolment in different courses under BTEB. Table 24 provides pertinent data. Pass rates in BM and vocational (SSC & HSC) courses is as low as 59 per cent and in 2011, the pass rate is lower than in 2007. The situation is somewhat better in the diploma courses. Pass rate has improved over the years and stood at 68.5 per cent in 2011. Low efficiency of BM & Vocational SSC/HSC is likely to be due to the poor quality of institutions. In addition, a larger share of those with lower ability may enroll into these courses.

There is also a reverse trend in total enrolment (and passed) of women in this stream (Table 21). During recent years the number has declined. It is difficult to explain this. It may to some extent be due to the low chances of getting employment and also the low pass rate, which is much lower among women compared to men. Moreover the courses (the type of skills) offered to girl students are small in number.

Table 21

Results of BTEB Examinations of different levels

Year	Passed Formal		Passed BM and VOC		Passed Diploma	
	Male	Female	Male	Female	Male	Female
2007	53,691	22,341	50,473	21,977	3,218	344
2008	94,716	34,394	55,192	32,932	9,524	1,462
2009	93,865	39,715	50,402	37,515	13,455	1,500
2010	133,289	53,568	115,42	51,22	17,869	2,348
2011	152,308	62,403	130,307	59,12	22,001	3,283

Source: NSS Phase.1 (2012).

Table 22

Trends of enrollment in the Public-Private institutions affiliated by BTEB

Year	All		Diploma		BM and VOC	
	Private	Public	Private	Public	Private	Public
2007	211,316	45,593	12,856	21,362	198,460	25,231
2008	191,611	49,274	14,142	20,053	177,469	29,221
2009	215,825	52,849	19,577	21,213	195,248	31,636
2010	254,365	53,935	26,079	22,256	228,286	31,679
2011	277,933	59,429	39,349	27,057	238,584	32,372

Source: NSS Phase 1 (2012).

Table 23
Classification of NTVQF levels of 4 selected courses affiliated with BTEB

	Level 1 Basic Trade	Level 2 Class IX	Level 3 Class X	Level 4 HSC VOC
2009	1977	75350	55525	1956
2010	13592	78744	67405	4015
2011	57520	83395	70087	14749

Source: NSS Phase 1 (2012)

Table 24
Pass rate in various TVET courses of BTEB

Year	BM and VOC			Diploma		
	Passed	Enrolled	(P/E) ´ 100	Passed (P)	Enrolled (E)	(P/E) ´ 100
2007	72450	118411	61.8	3562	8181	43.5
2009	87917	154134	57.0	14955	24685	60.6
2011	136219	229723	59.3	25284	36917	68.5

Source: NSS Phase 1 (2012) and author's calculation

Table 25
Intake capacity of Bangladesh Technical Education Board (BTEB), 2011

Courses Title	Duration	Intake capacity	Subtotal
Dip. in Eng.	4 years	49600	
Dip. in Eng. (Glass & Ceramic)	4 years	120	
Dip. in Eng. Printing	4 years	80	
Dip. in Eng. Survey	4 years	120	
Dip. in Marine Eng. & Dip. in Shipbuilding Eng.	4 years	80	
Dip. in Eng. Forestry	3 years	40	
Dip. in Tex Eng.	4 years	5000	
Dip. in Agri.	4 years	12000	
Dip. in Fisheries	4 years	840	
Dip. in Commerce	2 years	560	
H.S.C (BM)	2 years	140220	
H.S.C. (VOC)	2 years	8430	
S.S.C. (VOC)	2 years	165000	328050
Dakhil (VOC)	2 years	14400	
Dip. in Health	3 years	11320	
Certificate in Health Tech.	1 year	4620	
NSS Basic (360 hours)	3-6 months	3500	
Total		447430	

Source: NSS Phase 1 (2012) and author's calculation

Table 26
Trends of public-private enrollment in the available courses affiliated with BTEB, 2011

Courses	Duration	Public			Private			Subtotal
		Male	Female	Total	Male	Female	Total	
Dip. in Eng.	4 years	21039	3344	24383	18830	898	19728	
Dip. in Textile Eng.	4 years	292	48	340	3939	77	4016	
Dip. in Agri.	4 years	1767	567	2334	6874	1442	8316	
Dip. in Health Tech	3 years	0	0	0	4429	2860	7289	
H.S.C (BM)	2 years	5	136	141	63986	32463	96449	
H.S.C. (VOC)	2 years	5831	1325	7156	0	0	0	
S.S.C. (VOC)	2 years	20173	3947	24120	65011	31697	96708	228002
Dakhil (VOC)	2 years	0	0	0	2543	885	3428	

Source: NSS Phase 1 (2012) and author's calculation

Table 27

Summary of public and private/NGO Non-Formal TVET enrollment in 2011

Organization	No. of courses	Duration	NTVQF Levels						Total
			Below	1	2	3	4	5	
Public									
TTC, BMET	34	21 days, 2/3/6 months	8036	4913	530	1852	-	-	15331
NHTTI, BPC	09	18 weeks/1year/2year	-	898	-	-	-	-	898
DYD	12	1/1.5/2.5/4/6 months	44178	15162	-	-	-	-	59340
BITAC	10	2/6/14 weeks	36	23	89	157	91	55	451
Private/NGO									
TMSS	31	7/15/30/45/60/90 days	-	1566	1827	-	-	-	3393
SIT	25	3/4/6 months	114828	229656	-	-	-	-	344484
CARITAS	16	1/3/6/12 months	-	1793	-	-	-	-	1793
SOS	06	1 year	-	30	89	57	-	-	176
DAM	14	180/360/384 hours	140	1870	-	-	-	-	2010
FIVDB	15	2/3/5/7/12/21/30 days	24	341	525	288	321	180	1679
UCEP	21	6/12 months	-	460	4020	-	-	-	4480
MAWTS	72	1/2/4/8/10/14 weeks	-	2962	60000	-	-	2400	65362
		Total	167242	259674	67080	2354	412	2635	499397

Source: NSS Phase 1 (2012) and auther's calculation

9.9 EMPLOYERS' VIEWS AND QUALITATIVE ASSESSMENTS OF SKILL GAP

The most direct approach to identify the presence of skill shortage (or surplus) is to obtain the employers' opinion. Two studies (Rafique 2013) and Rahman et al. (2009) provide evidences on this. Rafique's (2013) study conducted FGD sessions where the employers expressed their views on the difficulties faced in filling the post of skilled workforce. The following information is relevant in this context.

A Employers consider skill as the highest rating criteria for selection of workers.
B Training was rated as third highest among the six criteria.

The study has not however clarified how they define skill or what level of training was considered as important.

The FGD sessions also sought the views on problems faced during the process of recruitment of skilled workforce.

- 27 per cent employers reported that they found too few or no applicants.
- Highest rating was attached to the problem: 'Applicants of insufficient quality.'

The entrepreneur's survey conducted by Rahman, Mondal and Islam (2009) also obtained similar results on skill shortage.

Rahman et al (2012) provide views of employers on skill gap in different occupation and aspects of work responsibility by sectors. Table 28 and 29 provides data on skill gap.

Table 28 shows that 'basic knowledge' and 'industrial behaviour' are the two aspects where current gaps are more pronounced with total points of 46 and 44 respectively. Four sectors gave high rating on these two. These are textiles, food manufacturing, transport equipment and IT. Thus skill of workers and training are required to go beyond imparting only narrow technical training.

Does it mean that skill gap is unimportant in terms of actual operation related skill and machine maintenance or operation? These are also important aspects of skill shortage with total of 29 and 12 points given by entrepreneurs. Three sectors with high score on Job skill related problem are food manufacturing, transport equipment and IT.

A question was asked on the adequacy of supply of formally trained workers from public and private providers. Less than half of the respondents considered supply/quality as adequate (Table 29). Therefore emphasis on the improvement of both quality and quantity of supply of formal TVET training should be a priority.

The survey generated a list of occupations with current skill gap in each sector where supply of skilled TVET graduates can be improved (30).

The recent evidences thus highlight the shortage of skills and employers' willingness to hire TVET graduates in contrast to the previous tracer study results. This may be due to changes in both demand and supply side during the recent period. Training organizations are becoming more practical demand oriented. Higher pace of growth of industrialization is leading to larger demand for skilled personnel.

Table 28

Frequency distribution of occupations by areas of current skill gaps of workers

Sub-sector	Areas of Skill Gap in Different Occupations									
	Basic Knowledge	Job Skill	Accuracy	Knowledge of Machine Maintenance	Industrial Behaviour	Trouble Shooting	Precision	Manual Dexterity	Working speed	Communication
Textiles	9	2	2	3	9	0	0	0	0	0
Pharmaceuticals	4	4	0	1	4	1	0	1	1	0
Food Manufacturing	9	7	6	2	7	0	1	1	0	0
Ceramics	5	0	1	2	4	0	0	1	0	0
Furniture	0	2	0	0	2	0	1	1	0	0
Transport Equipment	8	6	0	0	9	0	0	0	0	0
Leather & Leather Goods	2	2	1	4	0	0	2	0	0	0
Information Technology	9	6	0	0	9	0	0	0	0	1
Total Case	46	29	10	12	44	1	4	4	1	1

Source: Rahman et al (2012).

Table 29

Adequacy of supply, quality and relevance for formally trained workers

Sub-Sector	N	Adequate Supply		Adequate Quality		Relevance	
		Public Provider	Private Provider	Public Provider	Private Provider	Public Provider	Private Provider
Textiles	5	1	1	2	2	2	2
Pharmaceuticals	5	3	3	2	2	2	2
Food Manufacturing	5	4	4	1	1	1	1
Ceramics	4	2	2	3	3	2	2
Furniture	5	0	0	1	1	2	2
Transport Equipment	4	2	2	3	3	1	1
Leather & Leather Goods	4	0	0	0	0	0	0
Information Technology	4	3	2	2	2	2	2
Total Case	**36**	**15**	**14**	**14**	**14**	**12**	**12**

Source: Rahman et al (2012).

Table 30

Occupations of current skills gaps

Sub-Sector	Occupations of current skills gaps
Textile	a) Machine operator, b) Production operator, c) Market labour (semi-skilled), d) Quality Controller, e) Line Chief, f) Technician, g) Doffer, h)Mixer man, i) Lab boy, j)Wide man, k) Fitter, l) Helper, m) Production worker
Pharmaceutical	a) Tablet Operator b) Capsule Operator, c) Packaging worker, d) Ointment Operator, e) Junior production operator, f) Store keeper, g) Production operator, h) Pellet operator, i) Quality assurance worker, j) Health and safety assurance worker, k) Production Manager, l) Production Officer, m) Machine operator, n) General worker
Food Manufacturing	a) Grading worker, b)Beheading worker, c) Cold-storing worker, d) Processing assistant., e) General worker, f) Cleaner, g) Production operator, h) Helper, i) Lab Assistant, j) Production Assistant, k) Production worker, l) Foreman, m) Machine operator, n) Mixer man, o) Packaging worker, p) Oven man, q) Shrimp receiver,) Penning worker
Ceramics	a) Assistant Operator, b) Helper, c) General Worker, d) Machine Operator
Furniture	a) Machine Operator, b) Lacquer Operator, c) Carpenter, d) Designer, e) Sewing worker, f) Upholsterer, g) Welder, h) Polisher, i) Sawing operator, j) Veneer flush worker, k) Wood processor, l) Foam maker, m) Brass engraver
Transport Equipment	a) Machine operator, b) Semi-skilled worker, c) Electrician, d) Technician, e) Crane operator, f) Pipe fitter, g) Welder, h) Painter, i) Fabricator, j) Quality Controller
Leather and Leather Goods	a) Machine operator, b) Semi-skilled worker, c) Senior operator, d) Technician, e) Crust operator, f) Finishing operator, g) Store keeper, h) Cutting operator, i) Junior operator, j) Helper
Information Technology	a) Quality Assurance Engineer, b) Software Engineer, c) Mechanical Engineer, d) Web Developer, e) Desktop Publisher

Source: Rahman et al (2012).

9.10 NATIONAL SKILLS DATA SYSTEM PLAN

Establishment of National Skill Data System at the NSDC and its use for planning and monitoring can play an extremely useful role for skill based development. In this context, the following plan is aimed at having an effective data system to serve the purpose (although more details about a hub of data and information will actually be needed). Such data system should aim to hold data and information on

A Demand for various levels of skills by sectors
B Supply of skills of each level disaggregated as far as possible by probable destination sector/sub-sector
C Data on prospective trainees, their pre-training qualification and socio-economic characteristics. However, without a youth job centre/or related centre at work, this may be difficult to obtain.
D Data on TVET institutions, and their capacity.

The rationale for the first two types of data is obvious. The third is also important to help policies for motivating different groups of future labour force.

While the context of demand and supply data is more or less obvious, the levels of disaggregation must be appropriately chosen.

Moreover, demand data should separately address the two components: the domestic demand and international demand. Methodology of data generation will be different for the two components.

Although the short term target of data base preparation should be modest because of the capacity constraints, a full view of what is entailed in having a quality data base should be in the forefront. Therefore a short list of components of a system has been provided below, while there are other reports specifically focusing on this.

9.10.1 DEMAND SIDE

Components: National/Domestic/International

Undoubtedly the domestic demand component is predominant at present. However, the international component is extremely important in view of the foreign exchange earning potentials of the skilled labour force.

Data sources for domestic component:

a Data generated by Industry Skills Council
b Data generated by various national and micro surveys

Data sources for international component:

a Special surveys in countries with larger shares of current overseas employment of Bangladeshi migrant workers
b Diplomacy: This approach may be used not only for estimating demand, but also for generating larger demand.

9.10.2 SUPPLY SIDE

Data on The supply side will be generated by a system where the training providers input their data at regular intervals.

Such providers include public and private training institutes and NGOs.

- Data on both enrolment and completion of training should be included so that not
- only the supply but also the efficiency of the system can be monitored.
- Data must be disaggregated by level of NTVQF (or temporarily by basic/semi-skilled/skilled category).
- Gradually a system should be evolved so that for each NSS level, supplies suitable for various sectors can be estimated.
- For each level, data should be disaggregated by sex, age, region and if possible by social (income, religion etc.) classes.

9.10.3 INSTITUTIONAL ISSUES RELATED TO SKILL-DATA BASE CREATION

It is obvious that NSDC will have the overall role of overseeing the creation and maintenance of skill-data base.

A special cell within NSDC would be created to manage the data base. After data is supplied by ISCs and other relevant agencies, NSDC will integrate, analyze and maintain the data sets on supply and demand for skills and other related aspects. NSDC will also help create capacity of relevant agencies with the responsibility of supplying information. The executive committee of NSDC will take up the task of reviewing progress with skills data system.

BMET will be given the charge to coordinate international demand data obtained from various sources. For this purpose BMET data cell may be strengthened with more professionals and resources. Cooperation of NGOs, especially large NGOs with large training capacities should be sought.

9.10.4 FUTURE PRIORITY FOR APPLIED RESEARCH ON DEMAND-SUPPLY MATCHING OF SKILLS

Although the regular assessment of demand and supply are expected to be provided by ISC and the training providers respectively, some priority setting for applied research in this context is necessary to provide critical inputs for more effective performance of the system. NSDC may play a coordinating role for such research while the actual research and survey will be performed by research organization and BBS. A list of the priority agenda is as follows:

a Tracer study at regular intervals
b Baseline data on socio economic situation of training recipients
c Assessment of demand for skills through indirect indicators
d (to supplement ISC information)
e Improvement of BBS survey data to provide better information on supply and use of skill
f training
g Role of skill training and TVET for women

The rationale behind choice of each of the above is somewhat obvious. Still a few comments are pertinent. It is being recommended that both tracer study and indirect indicators (e.g. unemployment rate among the youth labour force with and without training etc.) are assessed to cross examine the presence of demand-supply gap.

The survey of background characteristics of trainees is needed because their willingness to participate in the labour force and reservation wage varies with such characteristics.

An important strategy for obtaining good quality data on industry wise growth of use of skilled labour is to enhance data quality of BBS's nationally representative sample surveys, especially the Labour Force Survey. In fact, 2010 round of sample survey provides some information on skill level of labour force and training received. The questions used to collect this information and the coding of responses has shortcomings which need to be rectified in future rounds of surveys.

BMET's and private training institution's capacity should be enhanced to provide suitable data. Such data should be made as per NTVQF categories and as per suitability for sectors. This will help improve the scope of access by employers. Data base should provide scope for employer's assessment of performance by trained personnel whom they hired from a particular organization.

9.10.5 USE OF SKILLS DATA

NSDC will take steps for regular dissemination of data through its internet based system. This will enable both suppliers and industry units to prepare their present and future plans for use of skilled workers.

NSDC may also invite feedback on the usefulness of data provided. Assessment of impact of new data system on actual use of skill and reduction of skill gap should be done from time to time.

Conducting regular tracer survey of trainees should also be a part of the skill data system.

9.11 CONCLUDING OBSERVATIONS AND POLICY RECOMMENDATIONS

Based on the quantitative analysis of skill gap and sectoral skill demand projections of the present study, following conclusions and recommendations have been presented. These recommendations need attention from policy makers and especially NSDC.

CONCLUDING OBSERVATIONS

Present study has examined the skill demand in various manufacturing and other skill intensive sectors. The present skill structure and future demand for skill has been assessed.

The prospect of supply of skill and the possible routes to fulfillment of future demand have been discussed. The major findings emerging from the analysis are:

a Low unemployment rate and high LFPR among those with technical and vocational education indicates absence of excess supply of skill. Views of employers also corroborate this. Econometric results (wage equations) also support this since the coefficients of technical/vocational diploma are higher than the coefficients of SSC/HSC. The result is in line with skill shortage reported for other Asian countries of South and South-East Asia.

b Estimates of skill demand in a few sectors along with available skills have been presented. TVET organizations may take note of this excess demand and draw up plans for training facilities. Large gaps exist in IT sector and in leather and food processing. It should, however be clarified that the projections of skill demand and skill gaps provide only some rough approximations. These are based on secondary materials and in some cases data quality may not be as good as desired. So these can provide some guidelines. In future better projections should be targeted through better quality data and covering all major sectors.

c The skill shortage depicted above stands in contrast with high unemployment rates among TVET graduates and employers' demand for low skilled workers shown in other studies (WB 2007, WB 2013). The difference is explained by a combination of factors. Tracer study overestimates unemployment rates due to problems of survey method. The demand situation may have changed over time and the observed low share of TVET diploma holders in total employment reflects the low supply and is not a demand side phenomenon.

d Supply of skill in Bangladesh is of heterogeneous quality. Skills expected from courses of various duration and diplomas are less than what is expected. Often there is uncertainty about the quality of skill. The fact that many of the HSC-vocational achievers do not seek or find employment reflects that this level of skill is unhelpful for employment.[6]

e To overcome the problem of discrepancy of skill achieved and skill expected from certain diploma holders, competency based training and uniform and more meaningfully defined skill levels through NTVQF should be introduced and progress has been made in this direction.

f While the assessment of demand and projection of demand for skill can play an important role in planning for skill generation, available data base for such assessment is quite inadequate as has been mentioned above. Generating quality projection should be targeted by NSDC and ISCs can play critical role in this process.

POLICY RECOMMENDATIONS

Recommendations presented here belong to four categories. These are:

a Linking macro policies with skill development strategy

b How to prepare quality projections of demand for skilled labour

c How to improve ISC's role in assessment of skill demand

d How to match the supply of skills with actual jobs/employment through pro-active measures.

6. As a result they either go for higher studies or seek more training.

9.11.1 RECOMMENDATION 1: MACRO POLICIES FOR INDUSTRIALIZATION AND LINKING WITH SKILL

The need for linking supply of skill with the demand has by now been widely recognized and has been elaborated in the following recommendations. However, a precondition for the success of such strategy is its coherence with the macro-economic policies which can play pivotal role in accelerating the pace of industrial growth and thereby generate demand for skill. Policies must be adopted to create conducive environment for both domestic investment and for FDI inflow especially in the labour intensive sectors. Sectors with higher labour intensity are likely to employ large number of workers with low to medium levels of competency scales and these sectors should get priority in the short run. Labour productivity can rise with growth of employment of trained workers. Analyses of the present and previous studies (Rahman 2012, Rahman and Islam 2006) shows that RMG, furniture, leather and IT sectors can be the prime movers in this direction and require incentives through suitable macro policies.

9.11.2 RECOMMENDATION 2: POLICIES FOR REGIONALLY DISPERSED INDUSTRIALIZATION AND SKILL TRAINING

Along with macro policies, government policies must also focus on the regional balance of skill based industrialization. This is pertinent because Bangladesh government's TVET institutions have already adopted a regionally dispersed setup for producing skills. Private training institutions can also cost effectively operate in areas distant from central regions. If industrialization takes place in all regions in a balanced manner, the locally trained skilled persons can get employment rather than having to move to Dhaka and neighbouring districts and the region around port city of Chittagong. During the last two decades industrial enterprises have been concentrated in these two regions which poses a disadvantage in hiring skilled labour and information flow about labour availability. The problem affects the job seekers even more seriously and will be mentioned again in the recommendations.

The regional issue should also be taken into account in the demand assessment by ISCs, which can then be followed up by both private and public TVET institutions.

9.11.3 RECOMMENDATION 3: ASSESS-FIND-TRAIN-EMPLOY-RETRAIN (AFTER) SCHEME

The objectives of ASSESSment of demand for skill and identification of skill gap is to move to a more efficient regime of skill provision and skill utilization. This requires matching of job availability and VTET outputs which in turn will be contingent upon creation of capacity for appropriate type of **TRAIN**ing. However, the creation of training capacity and existence of potential demand cannot be considered as sufficient conditions for success of the system. Such success requires linking steps. The linking steps include FINDing suitable persons for training. Suitability includes not only background qualification but also the willingness of the candidates to complete a specific training. Another aspect can be critical in the choice of the trainees. This is their eagerness to take up employment where the acquired skill can be utilized.

Similarly the other link in the chain is the actual **EMPLOY**ment of those who obtained specific training. Again the employment should be such that the specific skills acquired can be put to practice.

The last step of **'RETRAIN**ing' in fact encompasses all aspects of lifelong learning mechanisms and articulation. This approach involves a systematic interface between TVET, subsequent employment, switching to higher education which will open up pathways for vertical job mobility where TVET and higher education qualification can make combined contribution to productivity. This system has to be institutionalized so that those who enter TVET as the first step can visualize career prospects beyond the narrow confines of jobs with TVET certificate only.

In this whole process, the employers' and TVET organizations cooperation and interaction are essential. These institutional issues therefore deserve adequate attention.

Strengthening skill based growth of the economy requires improvement of skills which can be achieved through policies focusing on both demand and supply side. This implies that assessment of demand must be more correctly done and the supply (both number and quality) must be relevant to market demands. This will require that the training programmes are guided by 'job-skill-matching' paradigm.

For individual labour force participant training is critical for better job with higher wage/salary (as has been demonstrated by econometric analysis). Obtaining skill portability, developing specialization in areas with critical demand, flexible use of skills so that employers derive benefit from the skills will not only ensure access to decent jobs but also career advancement to better jobs. Training thus adds value to ones job market presence.

However, training should not be viewed as a once for all achievement. Skill development is a continuous process and regular updating of skills requires on-the-job training and retraining at various positions in the labour market. Skill does not mean only acquiring certain competencies or application of theory. It requires internalizing the skill concept and its application to realize the enterprise goals or even setting such goals. Demand assessment of skills and reforms of TVET system to address skills gap must proceed with this broader framework of skill development. This can be achieved through the following steps:

a involving private sector in assessment of demand
b involving private sector in adopting strategies to gear supply to actual market needs
c motivating TVET suppliers to formulate plans in accordance to the demand and to
d improve quality of skill training.

For involvement of private sector for achieving (a) and (b) above ISCs must be made functioning effectively. Employers' and workers representatives should participate in formulation of TVET expansion strategies, skill standards drafting and curriculum development.

For progress in (c) above, the public sector TVET institutions will require greater autonomy. These institutions should try to ensure better linkages with enterprises and industries.

Overall improvement in market relevant and competency based skill certification will require improved assessment practices. This will necessitate an improved learning environment with better physical facilities and motivated trainers.

9.11.4 RECOMMENDATION 4: SKILL DEVELOPMENT GEARED TO NTVQF

For all sectors ISCs should be formed, registered and effectively launched so that these bodies can bring together the major industry bodies in a sector to identify skill development issues relevant for the sector. ISCs will be able to assess a sector's skill demand, and in developing the strategies and policies for improving the capabilities for skill development.

Capacity of the Industry Skill Council and of individual enterprises should be strengthened so that they are encouraged to place demand for training tuned to NTVQF level specifications. As a precondition for capacity raising of ISC and TVET providers, overall awareness should be enhanced on the importance of the NTVQF levels and the importance of its implementation. In this context the current practice is to talk in terms skilled, semi-skilled and unskilled. The problems of such general descriptions or talking in terms of years of training should be highlighted to convince the stakeholders about the critical role NTQVF concept may play. The same should be done for TVET providers so that their trainings are oriented by NTVQF.

Over the years, training is expected to be geared towards CBT which provides advantages over time-based courses and certification. However, before the NTVQF is widely accepted and CBT is implemented, preparations would be required. Preparations include curriculum development and related equipments, training materials as well as teacher training. Such preparations also include increasing public awareness through campaigns and demonstrations. The change may be initiated through introduction of the new system in selected institutions and in high priority skill levels

CBT is expected to include a number of special features which are more or less expected. These include: multiple entry/exit, modular and self paced courses, assessment of skill acquisition on the basis of actual work following industry requirements, giving certificates through recognition of prior learning etc. These flexible components will require improved quality of assessment of trainees' skill acquisition success. Active involvement of private sector enterprises can ensure the quality of training and valid assessment.

Private sector involvement may take the form of financial incentives. It may be implemented through the following system:

- Sector association/selected enterprises may commission some skill development through public organizations and pay a significant part of the cost in a few selected public institutions.
- At the end of training, the enterprises will hire them and will get refund of the training expenses they advanced in installments over say 2-3 years.

With enhanced capacity, the ISCs can place demand for the present industrial units and also make projections for the future phases as per NTVQF levels. They will thus be able to provide job description, job specification & personnel specification for skilled workforce required.

National skill survey should be undertaken in phases to cover all sectors of the industries and all other sectors employing skilled workforce. This may be done with a view to operationalising the NTVQF standards for accelerated economic growth the country. The survey respondents' response must be translated to NTVQF levels on the spot, with inputs from the interviewers and researchers.

9.11.5 RECOMMENDATION 5: INSTITUTIONAL ASPECTS

NSDC should act as the national coordinating authority for the skill development. It has to be established by an Act of the Parliament and staffed by professionals with high level of competencies so that it can effectively perform the key functions and as well as much of the supporting functions as enunciated in the NSDP.

The draft of the Bangladesh Standard Classification of occupations (BSCO) needs to be reviewed and revised pragmatically.

ISCs and NSDC should guide regular updating of training curriculum. BTEB can provide inputs into the process.

BTEB must initiate clear programmes for strengthening its organizational and institutional capacity so that it can provide leadership in the whole process. It should have separate budget for research and capacity creation. Training institutes may be set up through public-private partnership (PPP) which can ensure both quality of training and demand oriented skill generation.

9.11.6 RECOMMENDATION 6: TRAINING FOR OVERSEAS EMPLOYMENT

Overseas employment of skilled workforce should gradually be tuned to the NTVQF level classified workforce who will then act as a motivation for the skill providers to shift to NTVQF classification. In this context there is need for conducting skills demand surveys in the countries where there is potential for exporting skill classified workforce and where sizable number of skilled workforce from Bangladesh are already employed.

Updating and upgrading of training and certification of the overseas employed skilled workforce is needed. Host country cooperation is needed for this.

9.11.7 RECOMMENDATION 7: EQUITY ISSUES

TVET providers should take steps to ensure equity and create conducive environment for the training of the disabled and disadvantaged groups. Employer should also be motivated to hire the disadvantaged groups. TVET institutions, especially the private providers must be responsive and flexible so that they can serve the poorer youth. A high percentage of poorer youth drop out from school before completing class VIII who may be turned into a productive force through proper training.

9.11.8 RECOMMENDATION 8: GENDER EQUITY IN TVET: CREATION OF SUPPLY AND MATCHING DEMAND

Although gender equality is an announced goal in Bangladesh, gender related differential continues in the labour market. Employers may not wish to employ women for some jobs, wages of women are often lower. Therefore the skill development plans for women should be done through assessment of demand and supply separately. Past research has shown that women from low income groups do not have much preference about jobs and will accept any work with good pay. However, employers usually have strong preferences and this should be taken into account in the assessment of demand. Nonetheless, by imparting quality training to women and ensuring same standard as men for each NTVQF level, it will be possible to encourage employers to engage more women.

Moreover, attempt should be made to enroll women from lower income groups in TVET courses because they are more willing to join the labour market and are less likely to have any prejudice against technical stream of education. Provision of special quota and scholarships for female students may help the purpose. Various forms of special financial assistance programmes should be adopted to broaden the scope for training opportunities for low income and disadvantaged groups. Such funds may also be made available for trainers as well. Scholarships should be provided to training of trainers who come from low income families and poorer regions.

Young girls can benefit from training facilities for RMG jobs, light engineering and a number of informal sub-sectors. With proper training, women may engage as sub-contractors of specific operations in RMG, leather sector work. Therefore gender-sensitive pathways to TVET must be developed.

Skill requirement of the informal labour market

Bangladesh, like other South Asian countries is characterized by economic dualism, with a large segment of informal sector and a small formal and organized sector. The present paper has focused mainly on the formal sectors since the scope of the study was limited. However the skill requirements and skill constraints of the informal sectors should also receive proper attention.

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ANNEXURES

10. ANNEXURES

ANNEX 1: LIST OF NINE SELECTED SECTORS AND 35 SELECTED JOBS

Sl.no.	Sector(s)	Job(s)
01	Agro-Food	Baking
		Food Packaging
		Food Processing and Quality Control
02	Construction	Electrician
		Mason
		Painter
		Plumber
		Scaffolding & Form Fitter
		Tiles & Mosaic Setter
03	Informal Skills	Beautician
		Dress Maker
		Mushroom Grower
		Solar Technician
04	Information Technology (IT)	Graphic Designer
		IT Supporter
		Web Designer
05	Leather and leather goods	Leather Machine Maintenance
		Leather Machine Operator
		Supervisor(Leather Products)
06	Light Engineering	CNC Machine Operator
		Foundry Worker
		Heat Treatment Operator
		Lathe Machine Operator
07	Ready Made Garments (RMG)/ BKMEA	Circular Knitting Machine Operator
		Lap Former
		Pattern Master
		Sewing Machine Operator
		Winch Dyeing Machine Operator
08	Tourism and Hospitality	Front Office Executive
		House Keeping staff
		Reservation Executive
		Tour guide
		Tour Operation Executive
09	Water Transport/Ship Building	Fitter
		Welder

ANNEX 2: SKILLS CONTENT OF SELECTED JOBS

AGRO FOOD (JOB: BAKING)	
Skills content	Level
1. Use basic mathematical concepts	1
2. Apply OSH practices	
3. Interpret mixing specification for products	
4. Produce bread dough	
5. Bake bread	
6. Produce pastry	
7. Bake pastry products	
8. Produce cake butter	
9. Bake cake	
10. Produce biscuits dough	
11. Bake biscuits	
12. Present and apply workplace information	2
13. Scale and mold for intermediate proof	
14. Conduct final mold and final proof	
15. Prepare pastry fills	
16. Form and fill pastry products	
17. Produce cake fill	
18. Decorate cakes	
19. Form biscuits	
20. Cool, decorate and stack biscuits	
21. Prepare special dough for baking bread and biscuits	3
22. Bake special bread, pastry products, cakes and biscuits	
23. Inspect quality, diagnose and respond to product process faults (bread, pastry, cakes and biscuits)	
24. Prepare special dough and fills for baking pastry and cake butter	
25. Decorate special cakes	
26. Cool, decorate and stack special biscuits	

AGRO FOOD (JOB: FOOD PACKAGING)	
1. Use basic mathematical concept	1
2. Apply OSH practices	
3. Follow quality and food safety programs	
4. Operate a sieving, blending and bagging process	
5. Present and apply workplace information	2
6. Operate a form, fill and seal process	
7. Operate a form case packing process	
8. Operate a thermo-formed blister packaging	
9. Operate a twist-warp process	3
10. Operate injection blow molding equipment	
11. Operate a high speed warping process	
12. Operate a blow molding equipment	
13. Fill and close product into bottles	
14. Fill and close product into cans	

Agro food (Job:food processing & quality control)	
1. Use basic mathematical concept	1
2. Apply osh practices	
3. Follow quality and food safety programs	
4. Present and apply workplace information	2
5. Apply raw materials /ingredient and process knowledge	
6. Operate process in a production system	
7. Control food contamination and spoilage	3
8. Apply principles of food packaging	
9. Identify the physical and chemical properties of materials, food and related products	
10. Identify and apply food additives	
11. Apply engineering principles to a food production process	4
12. Participate in a Hazard analysis and critical control points (HACCP) team	

CONSTRUCTION (JOB: ELECTRICIAN)	
Skills content of the job	Level
1. Practice work place cleanliness	1
2. Practice Occupational Health & Safety (OHS)	
3. Interpret dra wings and specifications in the construction (electrical) sector	
4. Perform measurement and calculations in the construction (electrical) sector	
5. Use hand tools and power tools for the construction (electrical sector)	
6. Install channel and cables	
7. Install fittings and fixtures	
8. perform arthing	
9. Connect simple electric circuits	

10. Install conduit, fish wire and cables	2
11. Install fittings and fixtures (advanced)	
12. Check and test wiring	
13. Repair ceiling fan	
14. Repair house hold appliance (basic)	
15. Repair house hold appliance (advanced)	
16. Perform service connection	
17. Perform motor connection	
18. Lead small team	3
19. Perform fan motor rewinding	
20. Rewind single phase induction motor	
21. Rewind three phase induction motor	
22. Make single phase transformer	
23. Apply controlling devices	4
24. Apply protective devices	
25. Perform installation of auxiliary outlets and lighting fixtures	
26. Perform assembly and install electrical lighting and motor control system	
27. Perform maintenance and troubleshooting work	
28. Install electrical protection system for lightening and grounding	

CONSTRUCTION (JOB: MASON)	
1. Practice work place cleanliness	1
2. Practice Occupational Health & Safety (OHS)	
3. Interpret drawings and specifications in construction manuals	
4. Perform measurement and calculations in construction works	
5. Use hand tools and power tools for the construction works	
6. Prepare masonry mortar	
7. Perform paving work	
8. Perform basic masonry works	
9. Perform plastering	
10. Lay brick/block for structure	2
11. Perform damp proof course	
12. Perform arch work	
13. Construct decorative brick work	
14. Perform concreting work	
15. Plaster concrete / masonry surface	
16. Install brick cladding	
17. Lead small team	3
18. Maintain tools and equipment	
19. Install Pre-cast and fabricated components	
20. Apply special cement finishes to concrete and masonry surfaces	
21. Repair defective concrete and masonry surfaces	
22. Construct water proofing process	

CONSTRUCTION (JOB: PAINTER)	
1. Practice work place cleanliness	1
2. Practice Occupational Health & safety (OHS)	
3. Interpret drawings and specifications in construction manuals	
4. Use hand tools and power tools for thE construction sector	
5. Prepare tools, equipment and materials for painting	
6. Prepare surface for white washing.	
7. Perform white washing	
8. Perform color washing	
9. Perform measurements and calculations in painting	2
10. Perform distempering	
11. Perform aluminum painting	
12. Perform plastic emulsion painting	
13. Perform weather coat painting	
14. Perform synthetic enamel painting	
15. Lead small team	3
16. Perform cement painting	
17. Perform spray painting	
18. Perform varnishing	
19. Perform french polishing	
20. Perform estimate for painting	

CONSTRUCTION (JOB: PLUMBER)	
1. Practice work place cleanliness	1
2. Practice Occupational Health & Safety (OHS)	
3. Interpret drawings and Specifications in plumbing manuals	
4. Use hand tools and power tools for the plumbing	
5. Fabricate pipes	
6. Prepare pipes for Installation	
7. Make pipe joints and connections	
8. Perform minor construction works	
9. Perform measurementsaa and calculations in plumbing	2
10. Maintain tools and equipment	
11. Install water supply line with fittings	
12. Install waste water line with fittings	
13. Install plumbing fixtures	
14. Conduct pipe leak testing	
15. Perform plumbing repair and maintenance works	
16. Lead small teams	3
17. Prepare plumbing Layout	
18. Perform plumbing fixture installation and assemblies	
19. Install hot and potable chilled water piping system	
20. Perform multi-storied building plumbing installation and assembles	

CONSTRUCTION (JOB: SCAFFOLD & FORM FITTER)	
Practice workplace cleanliness	1
Practice Occupational Health and afety (OHS)	
Interpret drawings and specifications in construction manuals	
Perform measurement and calculations in construction sector	
Use hand tools and power tools for the construct Ion sector	
Work safely at heights	
Perform form works in foundation	
Perform restricted height scaffolding	
Maintain tools and equipment	2
Perform intermediate height scaffolding	
Perform bamboo & timber scaffolding	
Perform form work for wall, co Lumn, beam & slab	
Perform form work for stair & ramp	
Perform steel / aluminum scaffolding	
Lead small team	3
Perform form work for arch	
Perform form work for rib & waffle slab	
Operate elevated work platform	
Erect & dismantle advance scaffoldinga	

CONSTRUCTION (JOB: TILES & MOSAIC SETTER)	
Practice workplace cleanliness	1
Practice Occupational Health and Safety (OHS)	
Interpret drawings and specifications in construction manuals	
Perform measurement and calculations in construction sector	
Use hand tools and power tools for the construction sector	
Handle wall and floor tiling materials	
Prepare surface for tiling	
Perform situ mosaic work	
Maintain tools and equipment	2
Set floor tiles	
Perform wall tiles	
Fix mosaic tiles	
Perform corner tiling	
Repair wall and floor tiles	
Lead small team	3
Perform decorative tiles	
Lay tiles for curved surfaces	
Perform tiles for ceiling	
Fix tiles for irregular roof	
Set tiles for pools and spas	

INFORMAL SKILLS (JOB: BEAUTICIAN)	
SkillS content of the job	Level
1. Practice workplace cleanliness	1
2. Practice Occupational Health and Safety (OHS)	
3. Use hand tools and power tools for the beauty industry	
4. Prepare manicure and pedicure treatment	
5. Prepare skin care treatment	
6. Perform herbal hair treatment	
7. Prepare hair removing	
8. Interpret drawings and specifications in manuals for the informal sector	
9. Perform measurement and calculations for the informal sector	
10. Perform manicure and pedicure	2
11. Perform skin care treatment	
12. Perform hair removing	
13. Prepare basic chemical hair treatment	
14. Prepare basic hair cutting	
15. Prepare basic make up	
16. Prepare basic hair styling	
17. Lead small team	3
18. Perform basic hair style	
19. Perform basic hair cutting	
20. Perform basic make up	
21. Prepare advance chemical hair treatment	
22. Prepare advanced hair cutting	
23. Apply quality standards	4
24. Maintain effective relationship with clients/customers	
25. Perform advance / creative hair styling	
26. Perform advanced/creative hair cutting	
27. Perform advanced make up	
28. Perform advanced chemical hair treatment	

INFORMAL SKILLS (JOB: DRESS MAKER)	
Skills content of the job	Level
1. Practice workplace cleanliness	1
2. Practice occupational Health & Safety (OHS)	
3. Perform measurement and calculations for the informal sector	
4. Use hand tools and power tools for the informal sector	
5. Make easer pant	
6. Make baby frock	
7. Make nightwear for ladies	
8. Make petticoat	
9. Interpret drawings and specifications in manuals for the garments sector	2
10. Apply quality standards	
11. Make kamiz	
12. Make shalwar	
13. Make fatua	
14. Make pajama	
15. Make skirt	
16. Make blouse	
17. Lead small team	3
18. Make pant	
19. Make shirt	
20. Make coat	
21. Make panjabi	

INFORMAL SKILLS (JOB: MUSHROOM GROWER)	
1. Practice workplace cleanliness	1
2. Practice Occupational Health & Safety (OHS)	
3. Use hand tools and power tools for the informal sector	
4. Collect commercial spawn	
5. Prepare and manage culture house	
6. Cultivate oyster mushroom in rice straw	
7. Harvst mushroom	
8. Process mushroom	
9. Interpret drawing and specifications in manuals for horticulture sector	2
10. Perform measurement and calculation	
11. Establish mushroom laboratory	
12. Produce spawn	
13. Cultivate shiitake mushroom	
14. CultiVate milky mushroom	
15. Cultivate straw (volveriella sp.) mushroom	
16. Lead small team	3
17. Prepare compost for button mushroom	
18. Cultivate button mushroom	
19. Cultivate reishi mushroom	
20. Preserve mushroom	
21. Marketing mushroom	

INFORMAL SKILLS (JOB: SOLAR TECHNICIAN)	
Skills content of the job	Level
1. Practice workplace cleanliness	1
2. Practice Occupational Health & Safety (OHS)	
3. Perform measurement and calculations	
4. Use hand tools and power tools for the informal sector	
5. Interpret drawings and specifications in manuals for the solar plant	2
6. Install structural frame for solar panel	
7. Set up solar panel	
8. Set up battery	
9. Set up charge controller	
10. Install electrical wiring for solar system	
11. Lead smaLl team	3
12. Maintain solar system	
13. Perform routine inspection of solar system	
14. Trouble shoot minor problem of solar system	
15. Monitor voltage, current and specific gravity of solar system	

INFORMATION TECHNOLOGY (JOB: GRAPHIC DESIGNER)	
Skills content of the job	Level
1. Use basic mathematical concepts	1
2. Apply OSH practices in the workplace	
3. Operate personal computer and use industry standard office applications software	
4. Type documents in bangla and english (intermediate level)	
5. Send and retrieve information using e-mail, web browsers video/audio tools	
6. Separate images from background	
7. Follow basic design guidelines	
8. Present and apply workplace information	2
9. Apply compliance and ethics in it work environment	
10. Manipulate and retouch a digital image and content using an image processing application	
11. Create shapes and apply text (e.g. Illustrator)	
12. Create final graphic design using graphic application	3
13. Apply content of user manuals and learner guides	
14. Create pages using a page layout application	4
15. Develop materials for printing and output	
16. Apply soft skills (e.g. time management, planning and organization, interpersonal Skills)	5
17. Prepare interactive PDF files	
18. AppLy supervision and management skills	
19. Transfer skills to others through training	

INFORMATION TECHNOLOGY (JOB: IT SUPPORTER)	
Skills content of the job	Level
1. Use basic mathematical concepts	1
2. Apply OSH practices in the workplace	
3. Operate personal computer and use industry standard office application software	
4. Type documents in bangla and english (intermediate level)	
5. Send and retrieve information using e-mail, web browsers video/audio tools	
6. Assemble hardware components	
7. Install and configure components of a personal computer	
8. Present and apply workplace information	2
9. Apply compliance and ethics in it work environment	
10. Apply electronic fundamentals	
11. Use basic instrumentation	
12. Install and optimize OS and utilities	
13. Maintain equipment and software in working order	
14. Maintain standard security (virus, worm, trojan horse)	
15. Connect PC to an existing network	
16. Install software to networked computer	3

17. Evaluate system status and run standard diagnostic tools	
18. Troubleshoot computer and network	
19. Use product documentation for IT support	
20. Provide basic system administration	
21. Provide defense systems for network thread	4
22. Apply tools/skills for cyber centre management	
23. Apply basic mathematics to digital electronics	
24. Apply soft skills (e.g. time management, planning & organization, interpersonal Skills)	5
25. Setup and expand networks	
26. Manage ip address and routing	
27. Apply basic data storage concept	

INFORMATION TECNOLOGY (JOB: WEB DESIGNER)	
Skills content of the job	Level
1. Use basic mathematical concepts	1
2. Apply OSH practices in the workplace	
3. Type documents, Bangla & English (Intermediate level)	
4. Send & retrieve information using email, web browsers, video/audio tools	
5. Operate a personal computer using MS Office application software	
6. Create and edit web content using HTML	
7. Use Image Editing Tools (Basic level)	2
8. Develop awareness of career opportunities in web designing & the IT sector	
9. Present and apply workplace information	
10. Apply compliance & ethics in IT work environment	
11. Convert, slice and use templates	
12. Use web animation (Basic level)	
13. Use DHTML (Basic level)	
14. Host simple and static web pages	
15. Develop Cascading Style Sheet (CSS)	3
16. Basic client side script for dynamic web page	
17. Use basic web design and content guide lines	
18. Use Web Animation (Intermediate level)	
19. Use Image Editing Tools (intermediate level)	

20. Use advanced web editing tools	4
21. Create and manage multimedia web content	
22. Transfer content to website using commercial packages & content management system	
23. Monitor and compile traffic website reports	
24. Use XML and XSLT	
25. Apply soft skills (e.g. time management, planning & organization and interpersonal skills)	5
26. Apply basic SEO techniques	
27. Integrate e-commerce site and payment or other third party sites	
28. Maintain website security	
29. Configure common web application packages	
30. Design and administer a database (RDBMS)	

LEATHER (JOB: LEATHER MACHINE OPERATOR)	
Skills content of the job	Level
1. Use basic mathematical concepts	1
2. Apply OSH practices in the workplace	
3. Cut leather by hand	
4. Sew leather by hand	
5. Skive leather pieces	
6. Cut leather by machine	
7. Identify materials used in leather goods production	
8. Perform embossing and stamping operations	
9. Perform table work	
10. Last shoe by hand	
11. Use drum or vessel to prepare or tan hides or skins	
12. Apply chemical finishes to leather products	
13. Cut synthetic materials by machine	2
14. Split leather pieces	
15. Trim leather	
16. Finish leather	
17. Sew leather by machine	
18. Assemble shoe by hand	
19. Last shoe by machine	
20. Operate machine to sew upper	
21. Perform drying operations	
22. Operate machines with in a team to prepare hides or skins for tanning	3
23. Perform footwear finishing operations	
24. Operate machines for making crust leather	
25. Work safely with industrial chemicals and materials	
26. Operate machines for making finished leather	
27. Prepare chemicals as per formula	

LEATHER (JOB: SUPERVISOR (Leather products)	
Skills content of the job	Level
1. Supervise operations in a leather enterprise	5
2. Coordinate or set up machines for product change	
3. Manage quality customer service	
4. Coordinate quality assurance for leather products	
5. Show leadership in the workplace	
6. Promote and ensure team effectiveness	
7. Establish and manage effective workplace relationships	
8. Develop work priorities	
9. Identify risk and apply risk management process	
10. Monitor and ensure safe workplace	

LIGHT ENGINEERING (JOB:CNC MACHINE OPERATOR)	
Skills content of the job	Level
1. Lead small team	3
2. Follow and apply coordinates and codes	
3. Interpret mechanical drawing (CAD) and programming	
4. Set up CNC machine, work piece and cutting tools	
5. Check and adjust machine positioning, offset wire geometry, tools and jobs	
6. Perform simulation and program checking	
7. Perform facing and turning	
8. Operate taper turning and chamfering	
9. Perform Arc turning	
10.Perform surface facing operation by CNC milling machine	
11. Interpret programming for CNC (milling and wire cutting)	4
12. Develop basic programming for CNC operation	
13. Perform drilling, boring and reaming	
14. Operate groove turning and parting	
15. Perform thread cutting	
16. Perform profiling, slotting and tapering	
17. Perform slotting and engraving	
18. Operate drilling, boring, reaming and tapping	
19. Perform pocketing	
20. Perform corner rounding and chamfering	
21. Perform contour cutting	

LIGHT ENGINEERING (JOB: FOUNDRY WORKER)	
Skills content of the job	Level
1. Practice workplace cleanliness	1
2. Practice Occupational Health & Safety (OHS)	
3. Use hand tools and power tools in light engineering	
4. Prepare molding and core Sand	
5. Prepare wooden pattern (single/split)	
6. Operate woodworking Machine	
7. Assemble split pattern	
8. Interpret drawing & specifications in manuals for light engineering sector	2
9. Perform measurement and calculation	
10. Prepare sand mold	
11. Prepare core by hand	
12. Operate Core Making Machine	
13. Operate melting furnace	
14. Pour molten metal to mold	
15. Lead small team	3
16. Prepare sand mold for heavy casting	
17. Operate melting furnace for metal	
18. Melt gray Iron casting In cupola	
19. Pour molten gray to mold	

LIGHT ENGINEERING (JOB: LATHE MACHINE OPERATOR)	
Skills content of the job	Level
1. Practice workplace cleanliness	1
2. Practice Occupational Health & Safety (OHS)	
3. Interpret drawing and specifications in light engineering.	
4. Perform measurement and calculation in light engineering.	
5. Use hand tools and power tools in light engineering Sector	
6. Grind lathe tools and drill bits	
7. Drill work piece by using center lathe machine	
8. Bore work piece	
9. Drill and ream work piece by using Bench drill machine	
10. Perform routine maintenance	2
11. Interpret and explain procedures or set up instruction	
12. Maintain tools, equipment and materials	
13. Prepare machine setting	
14. Turn Irregular shaped work piece	
15. Perform Bench work	
16. Cut single start external thread	
17. Turn taper by compound rest method	
18. Repair and maintain machine and equipment	

19. Lead small team	3
20. Measure precision work piece using gauges and surface texture comparator	
21. Perform shop management	
22. Plan to undertake a routine task	
23. Perform surface grinding	
24. Cut single start internal thread	
25. Knurl on taper shape	
26. Perform taper turning by tail stock method	

READY MADE GARMENT (JOB:CIRCULAR KNITTING MACHINE OPERATOR)	
Skills content of the job	Level
1. Prepare circular knitting machine for production.	1
2. Operate circular knitting machine to produce knit fabric.	
3. Operate single jersey circular knitting machine to produce design fabrics.	2
4. Monitor production process of circular knitting machine.	
5. Perform minor maintenance.	
6. Operate double Jersey circular knitting machine for design fabric.	3
7. Perform finishing works for circular knitting m/c.	
8. Performs major maintenance.	
9. Identify fabric faults	

READY MADE GARMENT (JOB: LAP FORMER)	
1. Practice workplace cleanliness	1
2. Practice Occupational Health and Safety (OHS)	
3. Use hand tools and power tools for the RMG sector	
4. Commission lap former machine	
5. Prepare lap former machine	
6. Operate lap former machine	
7. Interpret drawing and specifications in manuals for RMG sector	2
8. Perform measurement and calculation	
9. Feedmini lap to the comber machine	
10.Operate the comber machine	
11. Doff sliver cane	
12. Identify different signals of indicator	
13. Lead small team	3
14. Identify raw materials faults	
15. Identify feeding faults	
16. Identify drafting faults	
17. Identify product faults	

All READY MADE GARMENTS (JOB: PATTERN MASTER)	
Skills content of the job	Level
1. Practice workplace cleanliness	1
2. Practice Occupational Health & Safety (OHS)	
3. Use hand tools and power tools for the RMG Sector	
4. Make Pattern for t -Shirt	
5. Make Pattern for tank top	
6. Make Pattern for skirt	
7. Perform measurement and Calculation in manuals for the RMG Sector	2
8. Interpret Drawing and Specification in manuals for RMG Sector	
9. Make Pattern for Polo shirt	
10. Make Pattern for shirt	
11. Make Pattern for pant	
12. Make Pattern for rumper	
13. Lead small team	3
14. Make Pattern for jacket	
15. Make Pattern for blazer	
16. Make Pattern for under Garments (Top)	
17. Make Pattern for under Garments (Bottom)	

READY MADE GARMENTS (JOB:SEWING MACHINE OPERATOR)	
1. Practice work place cleanliness	1
2. Practice Occupational Health & Safety (OHS)	
3. Use hand tools and power tools for the RMG Sector	
4. Operate single needle Lock stitch machine	
5. Operate double needle lock stitch machine	
6. Operate single needle chain stitch machine	
7. Operate double needle chain stitch machine	
8. Interpret drawing and specifications in manuals for RMG Sector	2
9. Perform measurement and calculations	
10. Operate button hole machine	
11. Operate button attach machine	
12. Operate bar take machine	
13. Operate zigzag machine	
14. Operate manual embroidery machine	
15. Lead small team	3
16. Operate three thread over lock machine	
17. Operate four thread over lock machine	
18. Operate bottom covering chain stitch machine	
19. Operate top and bottom covering chain stitch machine	
20. Operate kansai special machine	
21. Operate five thread over lock machine	4
22. Operate six thread over lock machine	
23. Operate feed of the arm machine	
24. Operate blind stitch machine	
25. Operate eyelet hole machine	

READY MADE GARMENTS(JOB: WINCH DYEING MACHINE OPERATOR)	
Skills content of the job	Level
1. Practice workplace cleanliness	1
2. Practice Occupational Health and Safety (OHS)	
3. Use hand tools & power tools for RMG Sector	
4. Introduction with scouring parameter	
5. Scouring of fabric in winchdyeing machine	
8. Introduction with bleaching parameter	
9. Inspect fabric for dyeing in winch machine	
10. Familiarize with winch dyeing machine	
11. Bleaching of fabric in winch dyeing machine	2
12. Introduction with enzyme parameter	
13. Enzyme treatment of fabric in winch dyeing machine	
14. Introduction with dyeing parameter	
15. Dyeing of fabric in manually operated winch dyeing machine	
16. Lead small team	3
17. Perform measurement & calculation	
18. Inspect drawing & specification in RMG manual	
19. Dyeing of fabric in automatic winch dyeing machine	
20. Perform post dyeing operation	
21. Introduction with different Chemicals used in different processes in winch dyeing machine	
22. Perform maintenance & safety winch dyeing machine	

TOURISM AND HOSPITALITY (JOB: FRONT OFFICE EXECUTIVE)	
Skills content of the job	Level
1. Greet, register, and assign rooms to guests of hotels or motels.	1
2. Verify customers' credit and establish how the customer will pay for the accommodation.	
3. Keep records of room availability and guests' accounts, manually or using computers.	
4. Compute bills, collect payments, and make change for guests.	
5. Perform simple bookkeeping activities, such as balancing cash accounts.	
6. Issue room keys and escort instructions to bellhops.	
8. Review accounts and charges with guests during the check out process.	2
9. Post charges, such those for rooms, food, liquor, or telephone calls, to ledgers manually or by using computers.	
10. Transmit and receive messages, using telephones or telephone switchboards.	
11. Contact housekeeping or maintenance staff when guests report problems.	
12. Make and confirm reservations.	
13. Answer inquiries pertaining to hotel services, registration of guests, and shopping, dining, entertainment, and travel directions.	3
14. Record guest comments or complaints, referring customers to managers as necessary.	
15. Advise housekeeping staff when rooms have been vacated and are ready for cleaning.	
16. Arrange tours, taxis, or restaurant reservations for customers.	
17. Deposit guests' valuables in hotel safes or safe deposit boxes.	
18. Datestamp, sort, and rack incoming mail and messages.	

TOURISM AND HOSPITALITY (JOB: HOUSE KEEPING STAFF)	
Skills content of the job	Level
1. Ensure proper uniforms on job.	1
2. Ensure observance of hygiene and safety precautions.	
3. Join on-the-job and off-the-job training.	
4. Liaise between the maintenance and housekeeping departments.	
5. Maintain a time logbook.	
6. Be responsible for the redecoration and refurbishing of rooms, lobbies and so on.	
7. Ensure excellence in housekeeping sanitation, safety, comfort and aesthetics for hotel guests.	2
8. Maintain duty rosters issues and discipline and as housekeeping staff.	
9. Establish and maintain standard operating procedures for cleaning and increase the efficiency of production.	
10. Maintain an inventory of the furniture, linen, and movable equipment in the rooms and relate premises and to ensure they are regularly checked.	
11.Maintenance and repair of guestrooms.	
12. Deal with articles and a guest may have left behind in a room.	
13. Maintain standard of Waste Disposal	3
14. Maintain standard of Cleaning Linens	
15. Maintain standard of Cleaning Rooms and Lobbies	
16. Keep Up the Standards of all logistics & equipment	

READY MADE GARMENTS (JOB:SEWING MACHINE OPERATOR)	
1. Practice work place cleanliness	1
2. Practice Occupational Health & Safety (OHS)	
3. Use hand tools and power tools for the RMG Sector	
4. Operate Single Needle Lock Stitch Machine	
5. Operate Double Needle Lock Stitch Machine	
6. Operate Single Needle Chain Stitch Machine	
7. Operate Double Needle Chain Stitch Machine	
8. Interpret drawing and specifications in manuals for RMG Sector	2
9. Perform measurement and calculations	
10. Operate Button Hole Machine	
11. Operate Button Attach Machine	
12. Operate Bar Take Machine	
13. Operate Zigzag Machine	
14. Operate Manual Embroidery Machine	
15. Lead small team	3
16. Operate Three Thread Over Lock Machine	
17. Operate Four Thread Over Lock Machine	
18. Operate Bottom Covering Chain Stitch Machine	
19. Operate Top and Bottom Covering Chain Stitch Machine	
20. Operate Kansai Special Machine	
21. Operate Five Thread Over Lock Machine	4
22. Operate Six Thread Over Lock Machine	
23. Operate Feed of the Arm Machine	
24. Operate Blind Stitch Machine	
25. Operate Eyelet Hole Machine	

TOURISM AND HOSPITALITY (JOB: RESERVATION EXECUTIVE)	
1. Receiving reservation request from tourists then build up services suitable to the request	1
2. Determines whether space is available on travel dates requested by customer	
3. Arrange reservation and routing for passengers' itinerary.	
4. Plans route and calculate ticket cost, using scheduled, special market rate.	
5. Handle quotations, ticket issuance and invoicing	
6. Selling travel products and tour packages;	2
7. Inform passenger regarding baggers rules in his specific reservation.	
8. Provide info on visa requirements and process applications in a timely manner	
9. Provide all relevant hotel reservation on the destination.	
10. Arrange travel insurance in require	
11. Checks baggage rules and inform passenger to designated location for loading.	3
12. Dealing with customer enquiries and aiming to meet their expectations;	
13. Taking part in familiarization visits to new destinations and services in order to gain information on issues and amenities of interest to consumers;	
14. Update and maintain corporate clients' profile	
15. Maintain excellent working relationships with clients	

TOURISM AND HOSPITALITY (JOB: TOUR GUIDE)	
Skills content of the job	Level
Meet and greet services	1
Perform strong oral communication skills	
Accompanying groups travelling by coach, although on specialist tours travel may be by mini-bus, car, boat, train or plane;	
Conduct the tour is running smoothly for individual members of the group;	
Checking tickets and other relevant documents, seat allocations and any special requirements;	
Perform good commentating during the journey on places of interest along the route;	2
Communicating a range of information on itineraries, destinations and culture;	
Informing passengers of arrival and departure times at each destination on the itinerary (including ensuring that all members of the group are back on the coach before departing from each stop);	
Responding to questions and offering help with any problems that arise – ranging from simple matters, such as directing a member of the group to the nearest chemist, to more serious issues, such as tracing lost baggage, etc;	
Dealing with emergencies, such as helping a holidaymaker who is ill or those needing to contact family members urgently;	

TOURISM AND HOSPITALITY (JOB: TOUR OPERATION EXECUTIVE)	
1. Development of packages by visiting destinations and suggesting interesting travel routes or places of interest;	1
2. Designing flexible tour packages to meet the needs of different clients	
3. Exploring and identifying new business opportunities in a competitive and rapidly changing industry;	
4. Arranging coach, although on specialist tours travel may be by minibus, car, boat, train or plane for groups;	
5. elcoming groups of holiday makers at their starting point and announcing details of travel arrangements and stop-over points;	
6. Roviding tour guide for accompanying with tourist during the trip.	2
7. Helping with passport and immigration issues;	
8. Making sure all travel arrangements run according to plan and that accommodation, meals and service are satisfactory;	
9. Organizing entry to attractions and transport, such as car hire;	
10. Making contact in advance with places to stay or visit to check details and arrangements;	
11. Liaising with hotels,coach companies, restaurants and other clients;	3
12. Advising about facilities, such as sights, restaurants and shops, at each destination;	
13. Occasionally making accommodation bookings on proposed dates;	
14. Organizing and attending tourism events, conferences, workshops, seminars and exhibitions.	

WATER TRANSPORT/ SHIPBUILDING (JOB: FITTER)	
Skills content of the job	Level
1. Use basic mathematical concepts	1
2. Apply OSH Practices in the workplace	
3. Interpret technical drawing	
4. Use hand and power tools	
5. Use graduated measuring instruments	
6. Perform lathe operations	
7. Fabricate and assemble components	
8. Perform gas cutting and welding	
9. Perform Shielded Metal Arc Welding (SMAW) under supervision- positions 1F, 2F, 3F, 4F and 1G & 2G	
10. Present and apply workplace information	2
11. Repair and fit engineering components	
12. Perform fault detection, removal and installation of bearing	
13. Perform removal and installation of mechanical seals	
14. Perform brazing and soldering	
15. Apply quality systems and procedures	3
16. Apply fluid power fundamentals in the workplace	
17. Perform leveling and alignment of machine and engineering components	
18. Perform basic incidental heat treatment (quenching, tempering and annealing)	
19. Assemble bicycle	

WATER TRANSPORT/ SHIPBUILDING (JOB: WELDER)	
1. Use basic mathematical concepts	1
2. Apply OSH Practices in the workplace	
3. Interpret technical drawing	
4. Use hand and power tools	
5. Use graduated measuring instruments	
6. Perform spot welding	
7. Perform gas cutting and welding	
8. Perform SMAW, GMAW and GTAW under supervision (positions 1F, 2F, 3F, 4F and 1G & 2G)	
9. Apply fundamentals of welding metallurgy in the workplace	
10. Present and apply workplace information	2
11. Perform SMAW, GMAW and GTAW (positions: 1G and 2G)	
12. Apply quality systems and procedures	3
13. Inspect and test welds	
14. Estimate cost of jobs	
15. Perform Shielded Metal Arc Welding(SMAW)-positions 3G and 4G	
16. Perform Gas Metal Arc Welding (GMAW or MIG)-positions 3G and 4G	
17. Perform Gas Tungsten Arc Welding (GTAW or MIG)-positions 3G and 4G	
18. Perform SMAW - positions 5G and 6G	4
19. Perform SMAW - position 6GR	
20. Perform GMAW or MIG - positions 5G and 6G	
21. Perform GMAW or MIG - position 6GR	
22. Perform GTAW or TIG - positions 5G and 6G	
23. Perform GTAW or TIG - position 6GR	

ANNEX 3: LIST OF RESEARCH ASSOCIATES, ISC REPRESENTATIVES AND DATA COLLECTORS

Research Associates

Sl. No.	Sector	Name
	Agro-Food	Mr. Suresh Chandra Mandal
	Construction	Mr. Md. Sayedur Rahman
	Informal	Mr. Md. Kasim Uddin Sheikh
	Information Technology	Mr. Shah Alam Mojumder
	Leather	Mr. Md. Quamruzzaman
	Light Engineering	Mr. Md. Nazrul Islam Biswas
	RMG	Mr. Enayet Rabbi yasin
	Tourism and Hospitality	Mr. Syed Sohel Ahmed
	Water Transport	Mr. Tofail Ahmed

ISC Representatives

Sl. No.	Sector	Name
	Agro-Food	Mr. Amit Mondal
	Construction	Mr. Md. Fakhruddin Mobarak Khan
	Informal	Mr. Md. Masud Kamal
	Information Technology	Mr. Raju Muhammad Shahidul Islam
	Leather	Mr. Md. Mominul Ahsan
	Light Engineering	---
	RMG	Rupali Biswas
	Tourism and Hospitality	Mr. Mohiuddin Helal
	Water Transport	Mr. Md. Morshed Alam Chowdhury

Data Collectors

Sl. No.	Sector	Name
	Agro-Food	Basanti Sarkar
		Samsun Nahar
		Shuravi Sarker
		Sadia Afrin
	Construction	Mr. Md. Taher Zamil
		Mr. Md. Saiful Islam
		Mr. Mehadi Hasan
		Mr. Md. Masudur Rahman
	Informal	Sabina Yasmin
		Mr. Golam Faruque Tarafdar
		Mr. Md. Shariful Islam
		Mr. Md. Jahid Mahmud
	Information Technology	Mr. Md. Mahbub Alam
		Khaleda Ferdousi
		Mr. Shah Md. Shariful Islam
		Salvia Afrin Muna,
	Leather	Mr. Md. Ariful Rahman Bhuiyan
		Mr. Shakir Elahi Md. Fahim
		Mr. Shariful Islam
		Md. Nahiduzzaman
	Light Engineering	Mr. Md. Abdul Mannan
		Mr. Md. Siddiqur Rahman
		Mr. Md. Obaidul Haque
		Mr. A.B.S. Jahangir Alam
	RMG	Mr. Monindra Chandra Das
		Mr. Md. Shafiqul Islam
		Nadera Aktar
		Mr. Sharif Nowaz
	Tourism and Hospitality	Mr. Md. Saiful Islam Bablu
		Mr. Yeasin Parvej Robin
		Surma Jahan Sweety
		Mr.Salim Reza
	Water Transport	Mr. Shuvas Moy Dev
		Mr. Md. Azadul Khaled Khan
		Mr. Md. Radwan Chowdhury

ANNEX 4: QUESTIONNAIRE OF INDUSTRY DATA COLLECTION AND NTVQF LEVEL WITH DESCRIPTORS

Survey Questionnaire

TOP SHEET

Sector:_____

Industry/Organization: _____

Job :

	Title	Responses received (Nos.)
a.		
b.		
c.		
d.		
e.		
f.		

Total:

ISC representative

Signature
Name:
Date:

Research Associate

Signature
Name:
Date:

Survey Questionnaire

Industry/Organization: _____

Part – I

A. General information:

1. Date : Time:
2. Sector:
3. Survey code:

B. ISC Representative:

1. Name:
2. National ID:
3. Address:
4. Cell/Phone: E-mail :

C. Research Associate:

1. Name:
2. National ID:
3. Address:
4. Cell/Phone: E-mail :

D. Respondent:

1. Name:
2. National ID:
3. Designation:
4. Cell/Phone:

5. E-mail:

E. Organizational information:

1. Organization:
2. Establishment year:
3. Address:
4. Website:
5. Geo-Code
6. Target/Focus market: Domestic | International | Both | Others
7. Annual turnover: (in Qty.) 2011-2012
8. Ownership: Public | Private | Others
9. Employees' details:

	Male	Female	Vacancy
Total Working:			

Survey Questionnaire

F. Employed workforces' details:

Sl. #	Job Title	2011				2012				Demand						Remarks
		Working		Vacancy		Working		Vacancy		2013		2014		2015		
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
1.																
2.																
3.																
4.																
5.																
6.																
7.																
8.																
9.																
	Total:															

SURVEY QUESTIONNAIRE

Sector: _____

Industry: _____

Part – II

G. Employed workforce skill level:

1. Name :
2. Job title :
3. National ID :
4. Cell/Phone :
5. Date of birth :
6. E-mail (if any):
7. Address (permanent):

9. Highest-education :
10. Experience : Months/Years
11. Working in the present job : Months/Years
12. Training received:

    Duration : Months/Years

    Certificate obtained from:

13. Skill level acquired:

Below level	1	2	3	4	5

National Technical and Vocational Qualification Framework (NTVQF) levels

NTVQF Level	Education Type			Current Qualification Structure	Job Classification
	Pre-Voc	Vocational Education	Technical Education		
NTVQF 6			Diploma	4-year Diploma	Supervisor/Mid level Manager/Sub-Assistant Engineer
NTVQF 5		**NSC-V		NSS Master	Highly-Skilled Worker/Supervisor
NTVQF 4		**NSC-IV		NSS 1/HSC (Voc) Year 11/12	Skilled Worker
NTVQF 3		**NSC-III		NSS 2/SSC (Voc) Year 10	Semi-Skilled Worker
NTVQF 2		**NSC-II		NSS 3/SSC (Voc) Year 9	Basic Skilled Worker
NTVQF 1		**NSC-I		NSS Basic/ Basic Trade Course	Basic Worker
Pre-Voc 2	*NPVC-II			None	Pre-Vocational Trainee
Pre-Voc 1	*NPVC-I			None	Pre-Vocational Trainee

*NPVC – National Pre-Vocational Certificate
**NSC – National Skill Certificate

National Technical and Vocational Qualification Framework (NTVQF) level Descriptors

NTVQF Level	Knowledge	Skills	Responsibility	Job Classification
NTVQF 6	• Comprehensive actual and theoretical knowledge within a specific study area with an awareness of the limits of that knowledge.	• Specialised and restricted range of cognitive and practical skills required to provide leadership in the development of creative solutions to defined problems	• Manage a team or teams in workplace activities where there is unpredictable change • Identify and design learning programs to develop performance of team members	Supervisor/ Middle-Level Manager/ Sub Assistant Engineer
NTVQF 5	• Very broad knowledge of the underlying, concepts, principles, and processes in a specific study area	• Very broad range of cognitive and practical skills required to generate solutions to specific problems in one or more study areas.	• Take overall responsibility for completion of tasks in work or study • Apply past experiences in solving similar problems	Highly Skilled Worker/ Supervisor
NTVQF 4	• Broad knowledge of the underlying, concepts, principles, and processes in a specific study area	• Range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying the full range of methods, tools, materials and information	• Take responsibility, within reason, for completion of tasks in work or study • Apply past experiences in solving similar problems	Skilled Worker
NTVQF 3	• Moderately broad knowledge in a specific study area.	• Basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools	• Work or study under supervision with some autonomy	Semi Skilled worker
NTVQF 2	• Basic underpinning knowledge in a specific study area.	• Basic skills required to carry out simple tasks	• Work or study under indirect supervision in a structured context	Medium Skilled Worker
NTVQF 1	• Elementary understanding of the underpinning knowledge in a specific study area.	• Limited range of skills required to carry out simple tasks	• Work or study under direct supervision in a structured context	Basic Skilled Worker
Pre-Voc 2	• Limited general knowledge	• Very limited range of skills and use of tools required to carry out simple tasks	• Work or study under direct supervision in a well-defined, structured context.	Pre-Vocation Trainee (NPVC 2)
Pre-Voc 1	• Extremely limited general knowledge	• Minimal range of skills required to carry out simple tasks	• Simple work or study exercises, under direct supervision in a clear, well defined structured context	Pre-Vocation Trainee (NPVC 1)

ANNEX 5: SECTOR AND JOB WISE RESPONDENT NUMBERS WITH GEOGRAPHICAL MAP

Sl. No.	Sector(s)	Job(s)	Respondents (nos.)	Total
01	Agro-Food	Baking	26	83
		Food Packaging	29	
		Food Processing and Quality Control	28	
02	Construction	Electrician	31	203
		Mason	38	
		Painter	33	
		Plumber	37	
		Scaffolding & Form Fitter	31	
		Tiles & Mosaic Setter	33	
03	Informal Skills	Beautician	25	100
		Dress Maker	25	
		Mushroom Grower	25	
		Solar Technician	25	
04	Information Technology	Graphic Designer	18	89
		IT Supporter	35	
		Web Designer	24	
05	Leather	Leather Machine Maintenance	25	103
		Leather Machine Operator	46	
		Supervisor(Leather Products)	32	
06	Light Engineering	Fitter	23	95
		Foundry Worker	25	
		Welder	22	
		Lathe Machine Operator	25	
07	Ready Made Garments (RMG)/ BKMEA	Circular Knitting M/c Operator	39	254
		Lap Former	3	
		Pattern Master	63	
		Sewing Machine Operator	109	
		Winch Dyeing M/c Operator	40	
08	Tourism and Hospitality	Front Office Executive	37	155
		House Keeping staff	42	
		Reservation Executive	32	
		Tour guide	21	
		Tour Operation Executive	23	
09	Water Transport	Fitter	42	82
		Welder	40	
Total:				1164

Geographical location map of the industries

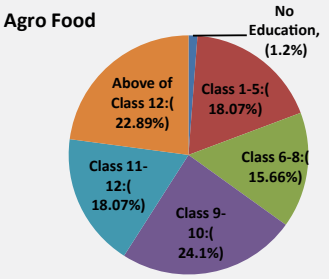
1. Agro Food (Dhaka, Norshindi, Narayangonj, Gazipur)
2. Construction (Dhaka, Gazipur)
3. Informal Skills (Dhaka, Jhenida, Gazipur)
4. IT (Dhaka)
5. Leather (Dhaka, Gazipur)
6. Light Engineering (Dhaka, Jamalpur, Bogra)
7. RMG (Dhaka, Gazipur, Narayangonj)
8. Tourism & Hospitality (Dhaka, Coxesbazar, Chittagong)
9. Water Transport/Shipbuilding (Dhaka, Chittagong,

ANNEX 6: PROJECTION OF UNCLASSIFIED SKILLED WORKFORCE FOR 2013 TO 2015

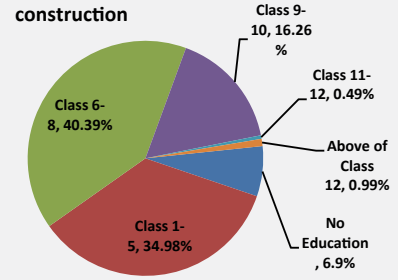
Sector	Job	2012				Future Demand					
		Working		Vacancy		2013		2014		2015	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Agro Food	Baking	574	380	2	0	30	0	0	0	0	0
	Food Packaging	3578	1523	0	0	0	500	0	0	0	0
	Food Processing & Quality Control	106	25	0	0	15	0	0	0	0	0
Sub-total		4258	1928	2	0	45	500	0	0	0	0
Construction	Electrician	479	0	0	0	101	0	110	0	184	0
	Mason	1782	30	0	0	210	4	236	8	435	7
	Painter	358	0	0	0	94	0	90	0	168	0
	Plumber	294	0	0	0	96	0	101	0	183	0
	Scaffold & Form Fitter	1408	0	0	0	181	0	184	0	299	0
	Tiles & Mosaic Setter	408	0	0	0	92	0	123	0	197	0
Sub-total		4729	30	0	0	774	4	844	8	1466	7
Informal Skills	Beautician	0	1267	0	3	0	320	0	318	0	240
	Dress Maker	319	43	11	1	77	18	15	6	63	47
	Mash room Grower	75	25	0	0	31	7	16	12	17	14
	Solar Technician	5600	5	395	0	1040	5	1030	10	1030	5
Sub-total		5994	1340	406	4	1148	350	1061	346	1110	306
Information Technology (IT)	Graphic Designer	136	23	6	1	12	5	16	6	22	10
	It Supporter	1758	169	9	0	287	66	360	117	539	160
	Web Designer	118	19	8	1	44	7	22	9	58	11
Sub-total		2012	211	23	2	343	78	398	132	619	181

Leather	Leather Machine Maintenance	285	4	9	0	166	9	43	9	51	16
	Leather Machine Operator	3244	5580	118	89	1438	1937	258	455	360	635
	Supervisor	560	118	4	2	115	55	62	33	66	33
Sub-total		4089	5702	131	91	1719	2001	363	497	477	684
Light Engineering	Fitter	17	0	6	0	14	1	19	3	23	2
	Foundry Worker	29	1	10	0	4	1	4	2	5	2
	Lathe Machine Operator	40	0	16	0	21	3	27	4	32	4
	Welder	26	0	9	0	14	1	15	3	19	2
Sub-total		112	1	41	0	53	6	65	12	79	10
Ready Made Garments	Circular Knitting Machine Operator	176	9	7	0	81	10	50	15	60	20
	Lap Former	3	0	0	0	0	0	0	0	0	0
	Pattern Master	41	0	2	0	19	0	20	1	19	0
	Sewing Machine Operator	2365	5153	50	50	1350	1350	750	850	900	800
	Winch Dyeing Machine Operator	285	10	13	0	154	10	70	10	72	10
Sub-total		2870	5172	72	50	1604	1370	890	876	1051	830
Tourism and Hospitality	Front Office Executive	161	34	0	0	0	0	0	0	0	0
	House Keeping staff	447	25	0	0	0	0	0	0	0	0
	Reservation Executive	75	9	0	0	2	0	0	0	0	0
	Tour Guide	59	1	0	0	9	0	0	0	0	0
	Tour Operation Executive	81	13	0	0	0	0	0	0	0	0
Sub-total		823	82	0	0	11	0	0	0	0	0
Water Transport / Shipbuilding	Fitter	910	0	160	0	227	0	597	0	947	0
	Welder	993	0	156	0	426	0	806	0	796	0
Sub-total		1903	0	316	0	653	0	1403	0	1743	0
Grand total		26790	14466	991	147	6350	4309	5024	1871	6545	2018

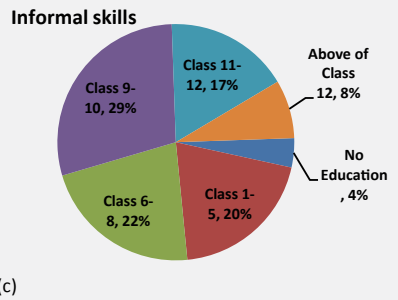
ANNEX 7: EMPLOYED WORKFORCE EDUCATION LEVELS OF NINE SECTORS



(a)



(b)



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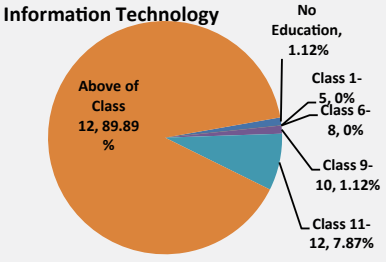

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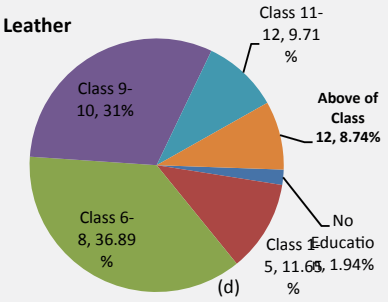
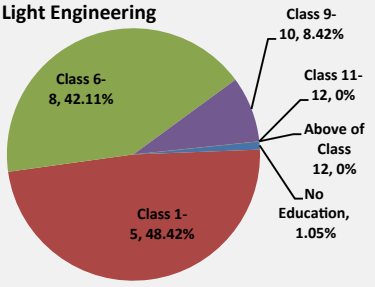


(d)



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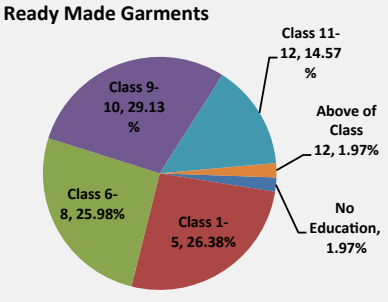
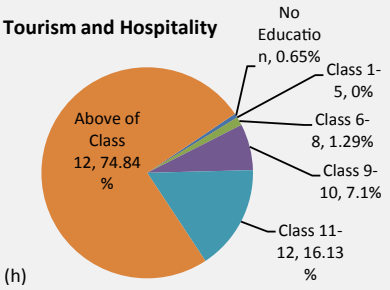


(g)



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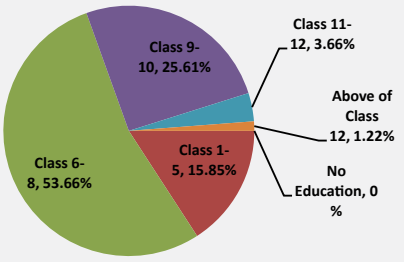
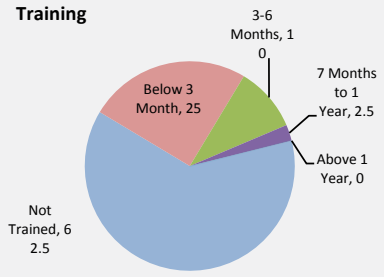


(i)

ANNEX 8: TRAINING OF SKILLED WORKFORCE OF NINE SECTORS



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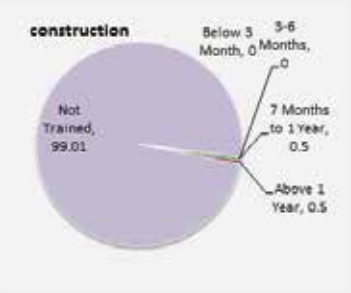

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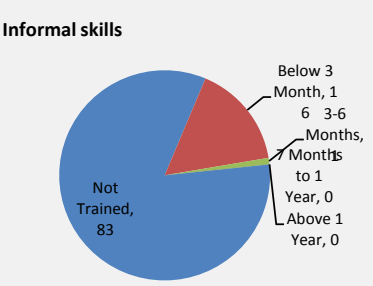

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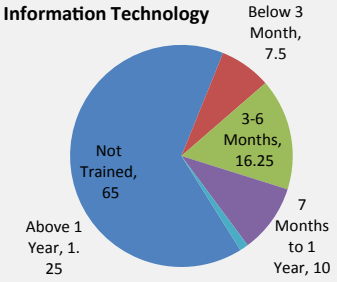
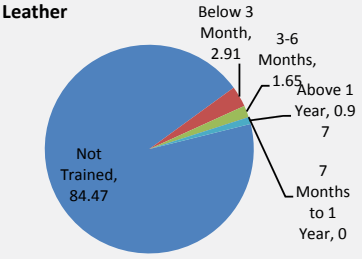
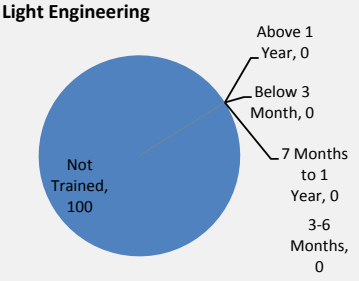
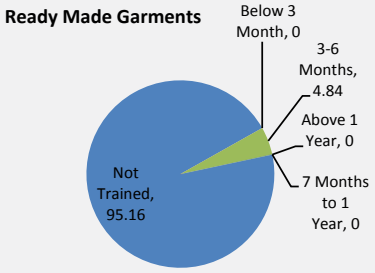


(d)







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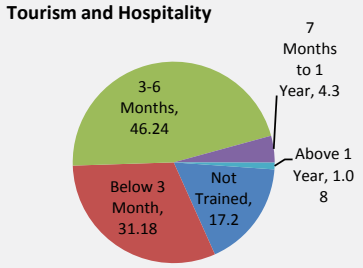

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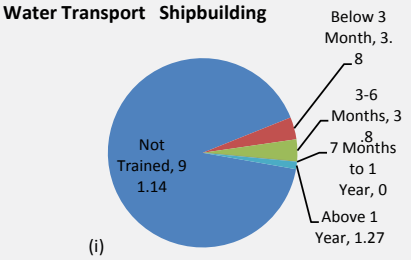
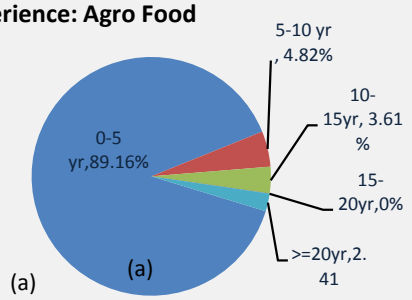


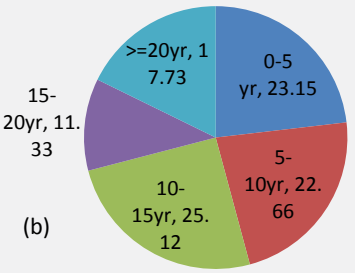
(i)

ANNEX 9 : EXPERIENCE ACQUIRED BY SKILLED WORKFORCEOF NINE SECTORS

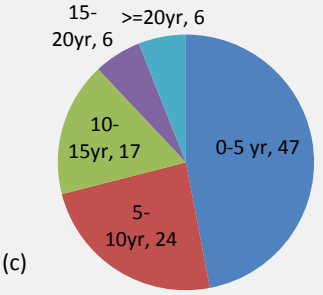
Experience: Agro Food



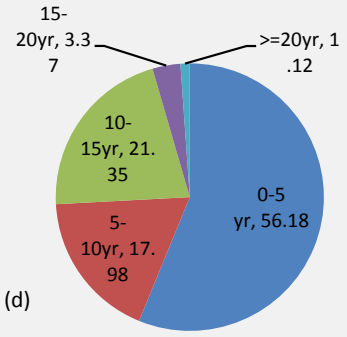
construction



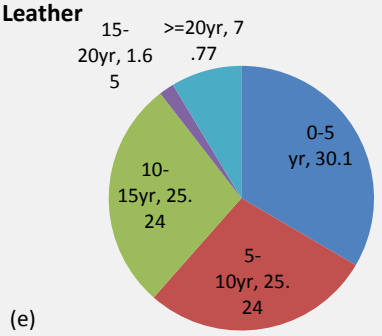
Informal skills



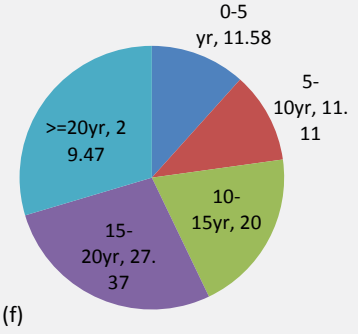
Information Technology



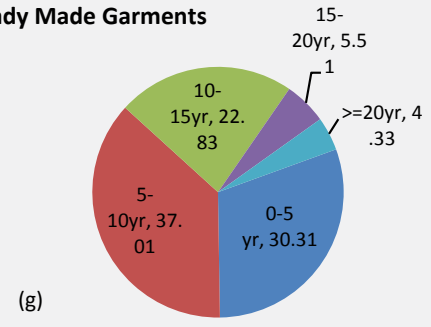
Leather



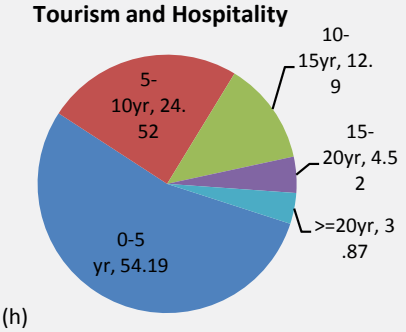
Light Engineering



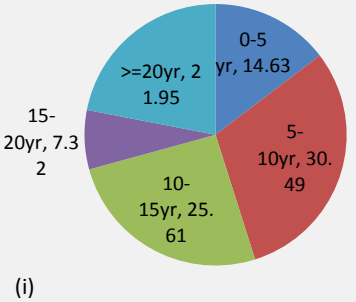
Ready Made Garments



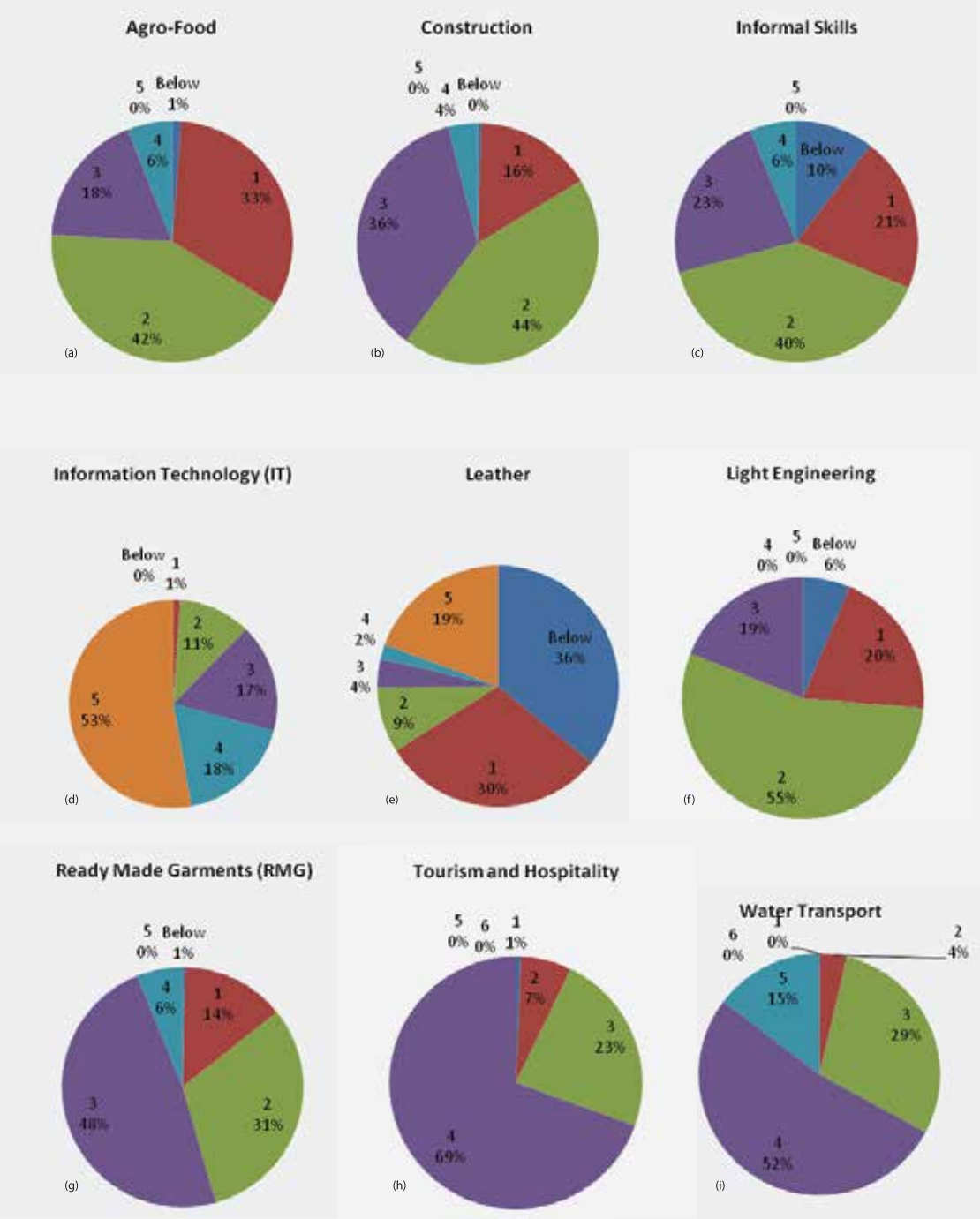
Tourism and Hospitality



Water Transport Shipbuilding



ANNEX 10 : NTVQF LEVEL SELF-CLASSIFICATION OF SKILLED WORKFORCE OF NINE SECTORS



ANNEX 11: SAMPLE OF 15 SELF-CLASSIFIED SKILLED WORKFORCE WITH DETAILED PARTICULARS

Name	Sex	Job Title	National Id	Cell/Phone	Date of Birth	Email	Address	Highest Education	Year Of Experience	Year with current organization	Training	Duration	Certificate Provider	Skill Level acquired
Mr. Ashraful	Male	Winch Dyeing Machine Operator	N/A	01753287143	1986-10-04	N/A	Uttotkotari,Bazarpur, Sundorganj,Gaibandha	10	7	1	N/A	0		Level-03
MR. Sanwar Hossain	Male	Winch Dyeing Machine Operator	N/A	01738406703	1984-07-13	N/A	Kobirkathi,Kolissor, Baufol,Patuakhali	8	7	7	N/A	0		Level-03
Abdus Selim	Male	Sewing Machine Operator	N/A	N/A	1992-06-06	N/A	Kolagaria,Borongail, Sibla,Manikgonj	5	4	4	N/A	0		Level-02
Rasida	Female	Sewing Machine Operator	N/A	01753337562	1982-03-11	N/A	Formardi,Bardodi, Sonargaon,Natayanginj	5	12	4	N/A	0		Level-02
MS. Sheuly	Female	Sewing Machine Operator	N/A	01942762658	1984-01-01	N/A	Lakkhipur,Motlob, Motlob ,Chadpur	5	13	12	N/A	0		Level-04
Fahima Akter	Female	Sewing Machine Operator	N/A	01738823463	1987-11-09	N/A	Asuliapur,Kalikapur, Madaripur,Madaripur	10	9	9		0		Level-02
Morzina Akter	Female	Sewing Machine Operator	N/A	01739258996	1980-12-01	N/A	Choudar,Pitalganj, Hossainpur, Kisorganj	6	8	3	N/A	0		Level-02
Sharmin Akter	Female	Sewing Machine Operator	N/A	01933603472	1982-01-30	N/A	Barvag,Alfadanga, Rasiani,Faridpur	9	7	7	N/A	0		Level-02
Azizul Haque	Male	Pattern Master	N/A	01678600080	1974-01-11	N/A		10	8	8	N/A	0		Level-04
MD. Mizanur Rahman	Male	Pattern Master	N/A	01745350604	1979-03-15	N/A	Tolarampur,Laldighi, Pirgonj,Rangpur	10	12	1	N/A	0		Level-02
MD. Nayan	Male	Pattern Master	N/A	01715568680	1982-01-11	N/A	Barisal	10	7	7	N/A	0		Level-02
Md. Azijul Islam	Male	Pattern Master	N/A	01680934663	1978-01-10	N/A	Tolarampur,Laldighi, Pirgonj,Rangpur	10	14	4	N/A	0		Level-04
MD. Taslim Uddin	Male	Circular Knitting Machine Operator	N/A	01752688296	1980-05-17	N/A	Sampur, Dcloutpur, Tormarchur,Manikgonj	10	9	9	N/A	0		Level-02
MD. Abul Basar	Male	Circular Knitting Machine Operator	N/A	01739888043	1985-10-11	N/A	Amiruddin,Kotowali, Kotowali,Faridpur	10	7	2	N/A	0		Level-03
MD.Bajlur	Male	Circular Knitting Machine Operator	N/A	01735354643	1973-07-05	N/A	Dholaiman,Fatemanagar, Tisal,Maymansingh	10	7	5	N/A	0		Level-02

ANNEX 12: QUESTIONNAIRE FOR NON-FORMAL PROVIDERS DATA COLLECTION

Non Formal Training Institute/ Organization Survey Format
[Please tick marks (√) as appropriate]

Institute / Organization: _____

Address: _____

_____

Geo code: _____

Web site & E-mail: _____

Phone / cell no.: _____

Establishment year: _____

Type of Institute / Organization:

a) Public: i) Department: ..... ii) Ministry: .....

b) Private: i) Self financed ☐

ii) Supported by: Government ☐ Donor ☐ Other (Specify).....

c) NGO: i) Self financed ☐

ii) Supported by: Government ☐ Donor ☐ Other (Specify).....

d) Industry: i) Self financed ☐

ii) Supported by: Government ☐ Donor ☐ Other (Specify).....

e) Joint venture: ☐ Partnership: ☐

Respondent: Name:
.....

Intake/Output of skilled workforce in the NTVQF Levels

Institute / Organization: .....

Sl. no.	Training offered			2011							2012							Remarks
	Training course	Duration (hr/ week / month/ yr)	Certificate awarded by	Intake	Output (NTVQF Level)						Intake	Output (NTVQF Level)						
					Below	1	2	3	4	5		Below	1	2	3	4	5	
Total:																		

Note: 1. Please put the numbers against each level.

2. National Technical and Vocational Qualification Framework (NTVQF) level attached with descriptor.

National Skills Survey (NSS), Phase-1, 2012
Intake/Output of skilled workforce in the NTVQF Levels

Institute / Organization: .....

Sl. no.	Training offered			Future plan/projection of new training courses																				Remarks
	Training course	Duration (hr/ week/ month/ yr)	Certificate awarded by	2013							2014							2015						
				Intake	Output (NTVQF Level)						Intake	Output (NTVQF Level)						Intake	Output (NTVQF Level)						
					Below	1	2	3	4	5		Below	1	2	3	4	5		Below	1	2	3	4	5	
Total:																									

Note: 1. Please put the numbers against each level.

2. National Technical and Vocational Qualification Framework (NTVQF) level attached with descriptor.

Teachers and Management Staff

Institute / Organization: .....

Sl. no.	Name and designation of Teachers and Management Staff	National ID number	Background			Type of Staff								Remarks
			Highest Qualification	Training with duration	Experience (year)	Regular		Temporary		Part-time		Others (specify)		
						Male	Female	Male	Female	Male	Female	Male	Female	

ANNEX 13: SURVEY AND ASSESSMENT TEAM

The Survey Team consisting of the following seven members was entrusted with the responsibility as enunciated in the TOR for planning and conducting the National Skill Survey and for the preparation of the survey report.

Mr. Abdur Rafique NPC, TVET Reform Project, ILO, Dhaka	Team Leader
Mr. Hari Pada Das Programme Officer, ILO, Dhaka	Member
Mr. Kabir Mia Programme Officer,Component-1, ILO, Dhaka kabir@ilo.org	Member
Mr. Md. Quamruzzaman Deputy Director, NSDC Secretariat	Member
Mr. Md. Sayedur Rahman Attached Officer,DTE	Member
Mrs. Khaleda Ferdousi Attached Officer, DTE	Member
Mr. S. M. Shahjahan Deputy Inspector, BTEB	Member

The Quantitative Assessment of Skill Demand and Skill Gap was authored by

Dr Rushidan Islam Rahman
Research Director
Bangladesh Institute of Development Studies (BIDS)

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