



SKILLS DEMAND SURVEY IN SHIPBUILDING SECTOR



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Abbreviations

BBS	Bangladesh Bureau of Statistics
BIDS	Bangladesh Institute of Development Studies
BTEB	Bangladesh Technical Education Board
BMET	Bureau of Manpower, Employment and Training
BSIC	Bangladesh Standard Industrial Classification
CBLM	Competency-based Learning Materials
CBT&A	Competency-based Training and Assessment
CISC	Construction Industry Skills Council
DCI	Data Collection Instrument
DTE	Directorate of Technical Education
EBT	Enterprise-based Training
EIG	Employment and Income Generation
GDP	Gross Development Product
HDRC	Human Development Research Centre
HSC	Higher School Certificate
IMT	Institutes of Marine Technology
ISC	Industry Skills Council
ISIC	International Standard Industrial Classification
KII	Key Informant Interview
LFS	Labour Force Survey
MoE	Ministry of Education
MoEWOE	Ministry of Expatriates' Welfare and Overseas Employment
MoU	Memorandum of Understanding
NGO	Non-government Organization
NSC	National Skill Certificate
NSDC	National Skills Development Council
NTVQF	National Technical and Vocational Qualifications Framework
PKSF	Palli Karma-Sahayak Foundation
RPL	Recognition by Prior Learning
RTO	Registered Training Organization
SCDC	Standard and Curriculum Development Committee
SDCMU	Skills Development Coordination and Monitoring Unit
SEIP	Skills for Employment Investment Program
SMI	Survey of Manufacturing and Industry
SSC	Secondary School Certificate
TI	Training Institute(s)
TSC	Technical School and College
TTC	Technical Training Centers
TTTC	Technical Teachers Training College
TVET	Technical and Vocational Education and Training
VTTI	Vocational Teacher Training Institute

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Palli Karma-Sahayak Foundation (PKSF) in connection with her partnership with Skills for Employment Investment Program (SEIP) launches this study to know the future skills demand along with the skills gap in the priority sectors of the economy including Shipbuilding sector in Bangladesh.

On this backdrop, PKSF entrusted Human Development Research Centre (HDRC) to perform this crucial and challenging task of skills demand survey. This survey is essential to explore occupation wise potential job demand and to determine the number of prospective human resources by skills level in shipbuilding sector (e.g., less-skilled, semi-skilled and skilled) as per employers' demand in congruence with the objective of SEIP. Findings of this study are crucial to PKSF, as the data could be useful to formulate the action plan to ensure effective demand-driven skills training program for the less-skilled, underprivileged and low-income groups of people.

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Executive Summary

Palli Karma-Sahayak Foundation (PKSF) is working with Skills for Employment Investment Program (SEIP) to support the targeted group of people to enhance their employable skills with the purpose of meeting the skills demand of the industries and self-employment as well. PKSF, through 22 training centers, is providing training mostly to the poor and low income group participants to improve their skills and make them employable. This study aims to let PKSF know the present and future skills demand as well as skills gap in Shipbuilding sector of Bangladesh to formulate her future policy and program in the area of skills development.

In particular, this study aims to explore occupation-wise potential employment demand in Shipbuilding sector and determine the number of prospective human resources by category of less-skilled, semi-skilled and skilled. This task is likely to be accomplished according to employers' demand in congruence with the objective of SEIP. The specific objectives of the study are as follows.

- i. To identify occupation wise job demand in Shipbuilding sector at home and abroad;
- ii. To examine the skills gap of existing human resources in comparison with potential job market demand;
- iii. To identify the causal factors of skills gap of existing human resources; and
- iv. To formulate an action plan to ensure effective demand-driven skills training program for the less-skilled, underprivileged and low-income group.

Study Design and Implementation

The study adopted both quantitative and qualitative tools to collect data and information from primary and secondary sources. For estimating the future job demand in Shipbuilding sector in Bangladesh, this study relies on various publications of Bangladesh Bureau of Statistics (BBS); different ministries, and departments of Government of Bangladesh and industry associations. Enterprise level survey was conducted to collect primary data on the job demand by occupations or trades; skills gap; and causal factors of the skills gap by interviewing both employer and employee using semi-structured interview schedule. For primary data collection, this study followed non-probabilistic sampling with a total number of 10 enterprises from Shipbuilding sector located in Dhaka, Narayanganj, Munshiganj, Chattogram and Khulna. Officially published data are also used extensively. Both quantitative and qualitative data are analyzed and triangulated. In addition, relevant stakeholders and knowledgeable entrepreneurs of this sector were consulted in different phases of the study.

Study Findings

Domestic and Overseas Job Market Demand Assessment

The projection on the future job demand in Shipbuilding sector for domestic and overseas market is estimated separately. Although there are liberal and conservative estimates on the projection of overseas job demand, this study relies on conservative estimates.

According to the projected future job demand for domestic market estimates, Shipbuilding sector will employ a total of 289,923 people in the sector by the year 2027. It also implies that 58,353 and 265,930 additional jobs will be created by the year 2022 and 2027 respectively. The proportion of less-skilled in total employment of Shipbuilding will increase in the next decade from 45.1 per cent in 2017 to 46.3 per cent in 2027 while employment in semi-skilled job will decline from 42 per cent in 2017 to 40.6 per cent in 2027. A total of 134,089 job will be created under less-skilled category in the year 2027. Among the different occupation under less-skilled category, the highest number of jobs will be created for Shipyard labour which is accounted for 56,533 job in 2027 followed by painter (14,786 in 2027). Among fifteen different occupation or trade under semi-skilled category, in 2027, highest number of job will be created for Fitter (32,181) followed by Machine man (16,525). It is to be noted that a portion of share of decrease in semi-skilled job demand will be occupied by the share

of increase in job demand for the skilled. In skilled category, job of welder will increase more than ten-fold from 2,863 in 2017, to 35,804 in 2027.

In comparison with the size of employment in domestic market, the overseas employment is very small and is expected to decline over time as the experts are of opinion that enterprises under Shipbuilding sector will shift to a large extent towards countries like Bangladesh from the existing ones. Estimates show that the total number of overseas employment in Shipbuilding sector will decrease to 1,782 by 2027 from 33,543 in the year 2017. The projection of future job demand by type of occupation in the sector under changed skill-mix scenario establishes that the overseas employment will continue to be dominated by less-skilled workers in the next decade; where welders are more likely to be employed. However, combining the estimates for both domestic and overseas market the estimated number of job demand in 2027 in the sector is 2,91,705 while the same is 57,536 in 2017.

Skills Gap Assessment and Its Causes

Results of skills gap assessment by employers of Shipbuilding sector in Bangladesh unveil a disappointing scenario exposing that there are only 15.5 per cent competent workers across different occupations while performing their job in the sector. There are 25.4 per cent workers who were found semi-competent in performing their current job. The remaining large segments of the existing workers (59.1%) were assessed as less-competent by their respective employers. Majority of the workers from semi-skilled and less-skilled trades were assessed less-competent and semi-competent. This assessment indicates that there is considerable skills gap or skills shortage in various occupations or trades in Shipbuilding sector of Bangladesh.

Reportedly, non-attractive financial benefits and inadequate labourer with more workload are the two most compelling reasons behind the existing skills gap in Shipbuilding sector of Bangladesh. Non-attractive remuneration or financial compensation cannot motivate workers for further skills development. The experts mentioned that deficiency in training is responsible for inadequate supply laborer. According to them, there is less coordination between the industry needs and trainings provided. The trainings are mostly lecture-based and assessment is not competency-based. This type of learning provides a little practical experience. Hence, trained people also underperform if they get recruited.

Any particular standard skills development training is expected to develop three distinct types of qualifications namely, generic competencies, sector specific competencies and occupation specific competencies. BTEB develops comprehensive training curriculum and assessment mechanism to address these key competencies that are required for acceptability in both national and international market. Study finds that the reality is somewhat different where the quality of training and certification is not convincing enough to satisfy the market demand.

Job Requirements and General Hiring Practices

The requirements for various trades set by employers do not vary between domestic and international market to a large extent. Sector and occupation specific skills are required for particular occupations while there are a number of pre-requisites for all occupations referred as generic competencies. Shipbuilding enterprises usually recruit their manpower directly, not through any agency. In general, regarding recruitment of less- and semi-skilled manpower, the following requirements in addition to specific technical skills are expected to be met by the prospective employee. Such requirements are maintained with paramount importance to overseas recruitment.

- Age should not exceed a particular limit;
- Educational qualification (in some cases, it is a must);
- Physical fitness;
- Ability to read and write;
- Certificate on training or any other qualification (if any).

In addition, survey finds that both relevant work experience and training are taken into consideration for recruiting workers in different occupations or trades of the Shipbuilding sector. Study also finds that a total of six methods are followed as general hiring practices for recruitment in the sector.

Advertisement in newspaper and from the acquaintance or existing workers were found two leading methods (60% each) for recruitment, followed by placing notice of employment opportunity in the organizational notice board and job advertisement in web portals. It is to be noted that web-based methods like advertisement in web portals and notice in the organizational website are getting prominence day by day and these digital hiring practices may be on top in the coming days. Training centre and industry linkage could be a potential instrument to find out the qualified candidates to recruit in various jobs of the sector.

Skills Development System

In Bangladesh, a good number of public and private TVET institutions provide a number of courses and training programs for the shipbuilding sector. Each of the training courses has its own curriculum, duration, entry requirement and assessment procedure approved by BTEB. Association of Export Oriented Ship Building Industries of Bangladesh (AEOSIB) has a contract with SEIP, signed in 2016, to develop skills of 10,000 workers in the sector—new entrants and up-skilling. At present, training are being imparted in Welding and Fabrication, Machine Tools Operation, Electrical and Navigation Equipment Installation, Machinery Installation, Painting, and Piping. Bangladesh Institute of Marine Technology (BIMT), specialized technical training center under Bureau of Manpower, Employment, and Training (BMET), are providing training for Shipbuilding sector in Naryanganj, Faridpur, Bagerhat, Sirajganj, Munshiganj and Chandpur.

Absence of nationally consistent approach for quality assurance, non-aligned standard of qualifications with the skills levels of industry, inappropriate quality of graduates and the lack of coordination are some critical issues of TVET (GoB, 2011). To address these, Industry Skills Council (ISC) is established under National Skills Development Council (NSDC) for Shipbuilding and other sectors. Administering competency based assessment of learning or competencies by external assessor registered with BTEB and recognition by prior learning (RPL) might be two avenues for assessment and certification.

Current State of Skills Acquisition

Skills acquisition status of the workers in Shipbuilding sector is not found encouraging. Survey findings exposed that only 3.3 per cent of workers had skills development training prior to joining their current job. Acquiring more qualification was the main factor motivating them to participate in the training. Two-thirds of the workers reported the training to be conducive to a large extent in finding job. Training prior to entering in the job was found beneficial for their performance in the present job as mentioned by cent per cent workers.

At the survey time, employers mentioned that soft skills were expected as training outcome. Among various types of soft skills, 80 per cent of employers keep the 'positive attitude of worker' at the top of the list followed by the team work and problem solving attitude. Employers also noted proactive attitude and gender sensitivity as component of soft skills that they would like to see from an employee.

Recommendations and Action Plan

1. According to the projection on future job demand in 2027, there will be a total of 291,705 jobs in Shipbuilding sector. Employment of the sector is largely captured by either less-skilled or semi-skilled workers and this scenario will be expected to continue in the next decade.

Estimates on the projection of future job market by trades in local Shipbuilding sector in 2027 exhibit that the top ranking occupations or trades will include Shipyard labour (56,533); Welder (35,804), Fitter (32,181); Machine man (16,525); Electrician (14,496); Painter (14,786); Cutter man (12,902); Sheet metal worker (12,177); Gas cutter (11,742) and Metal fabricator (11,597); while welders are likely to be employed in large number in overseas market.

At the same time, study shows that there is huge skills gap across occupation/trade in this sector as the bulk segment of the workers (59.1%) are found less competent in doing their works in the current employment.

Considering the future job demand in various occupations established by this study findings, skills development initiatives should target a number of high demand trades under skilled; semi-skilled and less-skilled category; namely- Welder, Fitter, Machine man, Electrician, Painter, Cutter man, Sheet metal worker, Gas cutter, Metal fabricator and Shipyard labour.

2. NSDC is developing competency standards for the trainings of RMG and Textile sector, among others. The courses and their duration are stated below. Training for the above-mentioned high demand trades should be designed on the basis of the following trainings as per CBT&A developed and set by BTEB and NSDC.

a) Carpenter	360 hrs.
b) Electrical Installation and Maintenance	360 hrs.
c) Fitting	420 hrs.
d) Lacquer Polisher	360 hrs.
e) Refrigeration & Air Conditioning	360 hrs.
f) Welding	360 hrs.
g) Common (NPVC 2; pre vocational)	360 hrs.
3. As large number of semi-skilled and less-skilled occupations will be created in the sector, it would be more useful to offer some basic training on soft skills.
4. In order to ensure inclusion of people from low income group, following intervention strategy should be taken.
 - Trainee selection & need assessment should be done by the NGOs
 - For easy initial placement, trainings for trades should consider local demand
 - Common training (NPVC 2) could be provided in order to make them prepared for further training.
5. PKSf is working with NGOs for poverty eradication and most of them are creating jobs —self-employment— through Employment and Income Generation (EIG) program as well as providing job opportunity in the formal sector including overseas employment. To this end, skills training for Shipbuilding sector and boat making in local dockyards throughout the country should target few trades that primarily include Gas cutter, Painter, Carpenter, Electrician, Fitter and Welder.
6. Competency-based learning materials (CBLMs) built upon the competency standard approved by BTEB have to be prepared and used in the training. Periodical review of the CBLM should be institutionalized to ensure updating knowledge and technology to be imparted by training institutes.
7. Skills development training for the Shipbuilding sector, being imparted by the technical and vocational institutes, should follow the new TVET. Competency standards are being prepared and certified by the concerned, but it is not found in practice. Most of the training centers are not following and preparing their learning materials and imparting training according to CBT&A. Unable to do certain things such as: imparting CBT; assessing by BTEB certified assessors; and awarding NTVQF certificate will retain the recognition problem of the certificate, in home and abroad at present and in future as well.
8. Training participants under RTOs should be given opportunity to be assessed later on to get NTVQF certificate in case of unavailability of the BTEB accredited assessor on time.
9. Entry requirement to participate in training course should follow the standard of BTEB.
10. Based on the BTEB approved competency standards, learning materials should include core, trade and soft unit of competency. In addition, it should focus extra unit on labor rights, decent work, safe migration, green job, climate change, disaster and worker migration.