

**INNOVATIVE STRATEGIES IN
TECHNICAL AND VOCATIONAL
EDUCATION AND TRAINING
FOR ACCELERATED HUMAN RESOURCE
DEVELOPMENT IN SOUTH ASIA
BANGLADESH**

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Foreword

South Asia's contributions to the Asian economy and the global labor force are substantial and will continue to grow. The Asian Development Bank's priority in the region is to complement infrastructure investments with strategic support to human resource development to help people move up the value chain. The objective of the Innovative Strategies for Accelerated Human Resource Development in South Asia (Subproject 11) under the Development Partnership Program for South Asia (RETA 6337) is to support emerging opportunities in priority human resource development through targeted policy dialogue grounded on relevant analytical work on technical and vocational education and training (TVET) and higher education.

Financial support from the Government of Australia's Department of Foreign Affairs and Trade (formerly the Australian Agency for International Development) has helped to prepare six country-level reports on TVET and higher education for Bangladesh, Nepal, and Sri Lanka. The reports identify each country's human resource development priorities, examine issues and constraints, and recommend possible interventions to realize the full potential of their respective labor force. Overall, common issues revolve around equitable access, quality and relevance, and financing. Increasing the number of graduates with relevant skills has been a persistent challenge rooted in systemic quality assurance policies and practices such as the actual provision of market-responsive training and credible assessment and certification. Equitable access does not only depend on availability of funds to provide education and training but equally on efficient use of available resources and effective mobilization of and synergy between public and private institutions in each country.

South Asia's huge opportunities arising from demographic dividend could be harnessed fully only if it is able to skill a large number of new entrants to the labor market every year and upskill the expanding labor force that is still undereducated and inadequately trained compared with their counterparts in other regions. South Asia must capitalize on innovations, knowledge, and skills anchored on high-quality TVET and higher education. Investments in high-quality TVET and selectively in higher education will be crucial for South Asian countries to transition from low-skilled labor to higher productivity and globally competitive labor. There are ample reasons to be optimistic since all countries in South Asia consider investments in human capital development a critical pillar of overall sustainable development.

Hun Kim
Director General
South Asia Department, ADB

Preface

The reports herein provide in-depth analyses of the state of technical and vocational education and training (TVET) and higher education in Bangladesh, Nepal, and Sri Lanka. Each country has two reports covering TVET and higher education which were presented in the three country-level workshops during the first week of December 2012: Sri Lanka (1 December), Nepal (3 December), and Bangladesh (5 December). Participants from government, the private sector, academe, and development partners discussed and validated the findings and supported the recommendations as well as identified additional next steps.

In TVET, issues range from insufficient teachers and trainers in Bangladesh to lack of quality monitoring system in Nepal, and to inadequate industry participation in Sri Lanka. Among the common issues identified are weak quality assurance mechanisms, low employment rate of graduates, lack of information about demand (leading to a mismatch between training and available jobs), expensive and long-term training that excludes the poor and marginalized, weak institutional arrangements, and inadequate provision of high-quality TVET to manage and scale up training programs.

Higher education is equally affected by various constraints ranging from lack of accountability for performance among institutions in Bangladesh to high politicization in Nepal, and to weak quality assurance mechanisms in Sri Lanka. Common issues identified are regional disparities in access, high cost in private higher education institutions, and poor quality and relevance as well as lack of emphasis on courses that promote entrepreneurship.

Key recommendations of the reports include implementation of a national quality assurance system, establishing a reliable skills data and labor market information system, effective financing schemes, encouraging public-private partnerships, and international benchmarking and mutual recognition for global competitiveness. In TVET, the key priorities are strengthening private training provision with clearly identified and mandated apex agency to effectively coordinate and scale up training programs, development of national competency standards, and building the capacity of TVET institutions. In higher education, the key priorities are developing research capacity, improved targeting of financial assistance to students, adopting formula funding in allocating public funding to universities, promoting accountability and autonomy among higher education institutions, and depoliticization of the higher education system.

The reports were prepared by a group of national consultants: Md. Mohiuzzaman for TVET and M.A. Mannan for higher education in Bangladesh, Devi Dahal for TVET and Hridaya Bajracharya for higher education in Nepal, and Sunil Chandrasiri for TVET and higher education, with initial inputs from Dayantha Wijeyesekara, on TVET in Sri Lanka. Richard Johanson, the international consultant and main author of the regional report on TVET, reviewed and guided the TVET national reports. William Saint, the international consultant and main author of the regional report on higher education, reviewed and guided the national reports on higher education. The country reports should be read in conjunction with the two regional reports (Innovative Strategies in Technical and Vocational Education and Training for Accelerated Human Resource Development in South Asia, and Innovative Strategies in Higher Education for Accelerated Human Resource Development in South Asia), which were published earlier in 2014.

The reports also benefited from comments from Brian Chin, Gi-Soon Song, and Karina Veal of South Asia Human and Social Development Division (SAHS), as well as from David Ablett and Sofia Shakil who at that time were also from SAHS; Rudi Van Dael from Bangladesh Resident Mission; Smita Gyawali from Nepal Resident Mission; and K.M. Tilakaratne and Nelun Gunasekara from Sri Lanka Resident Mission. Brajesh Panth, lead education specialist from SAHS, managed and coordinated the studies with support from Rhona Caoli-Rodriguez, the national coordinator who replaced Nicholas Tenazas. Brajesh Panth and Brian Chin also made presentations at the country-level workshops. Administrative assistance was provided by Criselda Rufino, Erwin Salaveria, and Rosalia Baeza.

Sungsup Ra
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Executive Summary

In 2010, Bangladesh's total labor force was 56.7 million, growing an average of about 1.5 million new entrants per year since 2002. Estimates suggest that the labor force will reach 64 million in 2014–2015. However, about 40% of the working-age population lacked schooling, and 22.8% had only grades 1–5 education (Bangladesh Bureau of Statistics 2011). The share of the population with formal technical and vocational education and training (TVET) qualifications is very small. Its skilled labor pool is too small and narrow to fulfill its industries' demands. Hundreds of thousands of Bangladeshis leave for employment abroad every year, the vast majority as unskilled workers. Remittances from these migrant workers comprised about 10% of gross domestic product in 2010. Remittance inflows could have been greater if the migrant workers were skilled. Improving the quality of skills among its labor force by providing better access to quality TVET will increase productivity and help further the country's economic growth.

Distinguishing Characteristics of Technical and Vocational Education and Training in Bangladesh

The TVET system comprises short courses (360 hours) plus three levels of formal TVET: 2 years for a secondary school certificate (vocational) (SSC Voc), 2 years for a higher secondary certificate (vocational) (HSC Voc), and 4 years for a diploma. Students can enter the diploma level in monotecnics and polytechnics after completing a general or vocational SSC or its equivalent. The main public providers of TVET are the Department of Technical Education under the Ministry of Education; the Bureau of Manpower, Education and Training (BMET) under the Ministry of Expatriate Welfare and Overseas Employment; and the Ministry of Youth and Sports. In total, about 20 ministries and departments deliver some type of skills training. Located in the Ministry of Education, the Bangladesh Technical Education Board (BTEB) is the apex body responsible for quality assurance through accreditation of training providers, curriculum development, examinations, and certification. Almost 500,000 students are enrolled in formal TVET programs. Private providers account for about 95% of all TVET institutions and about three-fourths of all enrollments. Compared with general secondary education, only about 2.85% of students enroll in secondary-level vocational programs (both SSC Voc and the National Skills Standard [Basic]). About 1,600 accredited private training institutions receive a subsidy called monthly payment orders (MPOs) from the Government of Bangladesh, which cover 100% of basic teacher salaries. TVET absorbs about 2.6% of the education budget, including allocations for BMET and MPOs.

Main Strengths of Technical and Vocational Education and Training in Bangladesh

Bangladesh has a well-developed system of examinations for formal TVET qualifications, particularly regarding theoretical coverage. There are several excellent private providers, including nongovernment organizations (NGOs), and many focus on disadvantaged youth and adults. Among these are the Underprivileged Children's Educational Programs, Dhaka Ahsania Mission, Center for Mass Education in Science, and Mirpur Agricultural Workshop and Training School. There are also excellent examples of industry initiatives for skills provision under public-private partnerships (PPPs) such as Bangladesh Garments Manufacturers and Exporters Association through technical training centers and Bangladesh Textile Mills Association with the National Institute of Textile Training, Research and Design. Other good practices include the establishment of the National Skills Development Policy and the industry skills councils and the initiatives for devolution of authority and flexibility in raising revenues among technical training centers.

Main Weaknesses of Technical and Vocational Education and Training in Bangladesh

Economic relevance. In general, employers do not participate meaningfully in setting training policies or content, or in evaluating results. Similarly, public training institutions lack the initiative to consult employers in preparing and updating standards, and regular mechanisms for labor market analysis do not exist. A rigid training supply response is evident in the system's inability to modify curricula as needed, largely due to administrative bureaucracy and lengthy training programs. Many vocational students have no intention of practicing the occupational skills they are studying and actually plan to pursue higher education, suggesting improper targeting.

Social relevance: equity and access. TVET in Bangladesh has less impact on poverty reduction and gives no attention to the informal sector. The grade 8 entry requirement blocks disadvantaged students (only 60% of students complete grade 5, including those from disadvantaged groups), as do lengthy training programs (2–4 years) and the absence of short-term or flexible training that does not interfere with work. Females lack adequate access to TVET, as reflected in their low participation rate (9%–13% in public training institutions and 33% in private training institutions).

Quality and effectiveness of training delivery. Trained teachers are insufficient because of low output from teacher training institutions, lack of in-service training opportunities, and low salary structure. Moreover, due largely to bureaucratic red tape (it takes at least 2 years for the Public Service Commission to appoint new teachers), the teacher vacancy rate in public training institutions is about 50%. In general, ineffective teaching methods compromise quality, due to an overemphasis on testing theoretical knowledge and little attention to practical (competency-based) instruction and exacerbated by inadequate facilities, equipment, and teaching materials.

Organizational effectiveness. Bangladesh TVET policies and plans are sometimes inconsistent. No plans have been analyzed for financial implications and feasibility. Bangladesh also lacks a national TVET development program and investment plan. The governance structure for TVET is weak, and central institutions lack clear mandates and sufficient numbers of qualified professionals. The National Skills Development Council (NSDC) meets infrequently and has an unwieldy structure. Public training institutions have minimal administrative authority for training programs and developmental spending. Political interference and BTEB understaffing result in insufficient quality assurance over nongovernment TVET providers. Statistical information for decision making and investment programming about TVET performance is also inadequate.

Finance and internal efficiency. Government financing for TVET is inadequate and cost-recovery schemes (e.g., fees from trainees), as well as other income-generation activities, are insufficient. High failure and dropout rates, a low employment rate, and low capacity utilization waste a substantial amount of resources. Lack of institutional autonomy among institutions results in lack of accountability.

Plans and Policies

Bangladesh has at least five plans and policies with prescriptions and implications for TVET: (i) Vision 2021, (ii) the Poverty Reduction Strategy Program II, (iii) Education Policy 2010, (iv) the National Skills Development Policy (NSDP) 2011, and (v) the Sixth Five Year Plan (2011–2015). Most important are the TVET strategies in the Education Policy 2010 and NSDP 2011. The TVET section of the Education Policy 2010 focuses largely on massive expansion, ensuring both vertical mobility from one level to another and access for the underprivileged and marginalized segments of the population. Approved by the cabinet in January 2012, the NSDP advocates a flexible demand orientation for skills development and spells out the role of industries as well as training in the workplace. It also calls for the imposition of standards and structures for skills development through a qualifications framework and competency-based training rooted in workplace skill requirements.

Current External Support

Bangladesh benefits from three major externally assisted projects: (i) the European Union-assisted TVET Reform Project (2008–2012, \$21 million); (ii) the Asian Development Bank Skills Development Project (2008–2013, \$30 million); and (iii) the World Bank-assisted Skills and Training Enhancement Project (August 2010–December 2015, \$88 million). These projects confront many of the chronic issues listed in the previous section. Several accomplishments are noteworthy, including formulation and approval of the NSDP, the National Technical and Vocational Qualifications Framework, and the establishment of five industry skills councils (ISCs) and four sector working committees (SWC).¹ Competency-based curricula are being developed, and instructors are being trained.

¹ Though the roles and responsibilities of ISCs and SWCs are almost the same, the different nomenclatures used by two projects (TVET Reform and SDP) tend to confuse the stakeholders. The SDP has therefore started a process to introduce a uniform nomenclature recognizing only the ISCs.

Possible Future Investments

The projects discussed here address many issues in the Bangladesh TVET system (e.g., standards, competency-based curricula, and in-service teacher training). Many initiatives will require more time. The following are recommendations for complementary reforms and investments:

Preparation of a subsector development program. Existing policies and plans need to be translated into development programs. The NSDP has called for preparation of an action plan that could form the basis of a national skills development program under the auspices of NSDC that will spell out investment priorities, costs, and financing.

Organizational reform. The NSDP has called attention to the limitations imposed by the present organization and management of TVET, but it does not address the unwieldy membership of NSDC, mostly from the government side. Much greater industry and employer participation is necessary in the governance of TVET. As stipulated in the NSDP, an in-depth objective study will determine the most rationale and effective organizational reform for Bangladesh TVET, including whether NSDC should be restructured into an autonomous body to maximize its effectiveness.

Reform of teacher recruitment practices. Teacher shortages compromise the quality of instruction and prohibit institutions from releasing staff for in-service upgrades. All signs point to the need for urgent reform in the criteria and procedures involved in the teacher recruitment and hiring system. The NSDP and the Education Policy 2010 propose the creation of a technical teacher service commission to replace the Public Service Commission in the TVET subsector. The NSDP also provides for a two-tier hiring system that enables short-term engagement of technically qualified personnel or contractual replacements to fill vacancies when permanent recruitment cannot be done immediately.

Devolution and a move to performance-based funding. At present, government financing, limited as it is, flows mainly to public and MPO-supported private institutions, regardless of their performance in enrollment, examination success rate, or employment rate of graduates. By attaching performance conditions to funds release, much greater output could be achieved from the training infrastructure, both in quantity and in quality. A shift to performance-based budgeting would require greater devolution of authority to training institutions so that their managements could hire staff as needed, make decisions on course content, and direct resources to the highest priority expenditures.

Support for flexible training provision. The economic value of a lengthy SSC Voc program must be reexamined because a 2006 tracer study determined that only 4% of its graduates were employed. HSC programs performed better at producing for the labor market, but these institutions are still constrained in their ability to respond to market needs. To improve responsiveness to labor market demands, an alternative would be to support expansion of TVET outside the formal school system. After students finish their general education and formal schooling, they could enroll for intensive skills development that is shorter and labor market oriented. BMET's technical training center model is worthy of consideration for this approach.

Support for enterprise-based training. Alternative financial means to stimulate enterprise-based training have to be explored through research and studies, among others. Such a scheme should also be able to contribute to the National Fund for Skills Development that can be tapped to financially support apprenticeships and workers' training.

Raising skills in the informal sector. Accounting for about 80% of the labor force and about 65% of all employment outside agriculture, the informal sector also employs skills to produce goods and services, but training efforts often are neglected in the informal economy. Raising the productivity and incomes of workers in the informal sector and enterprises in key nonfarm economic sectors can be supported through investment in upgrading the skills of master craftspersons.

Support for public-private partnerships in training. One option is to finance PPP arrangements between public institutions and private enterprises (e.g., the Bangladesh Garments Manufacturers and Exporters Association, the Chittagong Skills Development Center, or the Bangladesh Knitwear Manufacturers and Exporters Association). For instance, the government and/or development partners could finance enterprises or institutions that plan to establish and operate their own training institutions through PPP. Additionally, PPP funds for enterprise-based training could be established to finance the startup costs for private management of public institutions.

Abbreviations

ADB	Asian Development Bank
BGMEA	Bangladesh Garments Manufacturers and Exporters Association
BUFT	BGMEA University of Fashion and Technology
BKMEA	Bangladesh Knitwear Manufacturers and Exporters Association
BMET	Bureau of Manpower, Employment and Training
BTEB	Bangladesh Technical Education Board
BTMA	Bangladesh Textile Mills Association
CSDC	Chittagong Skills Development Center
DAM	Dhaka Ahsania Mission
DCCI	Dhaka Chamber of Commerce and Industry
DTE	Directorate of Technical Education
GDP	gross domestic product
HSC (BM)	higher secondary certificate (business management)
HSC Voc	higher secondary certificate (vocational)
ICT	information and communication technology
ILO	International Labour Organization
IT	information technology
ITVET	Integrated Technical and Vocational Education and Training
MAWTS	Mirpur Agricultural Workshop and Training School
MEWOE	Ministry of Expatriate Welfare and Overseas Employment
MOE	Ministry of Education
MPO	monthly payment order
NITER	National Institute of Textile Engineering and Research
NSDC	National Skills Development Council
NSDP	National Skills Development Policy
NSS	National Skill Standard
SFYP	Sixth Five-Year Plan
SSC Voc	secondary school certificate (vocational)
TSC	technical schools and college
TTC	technical training center
TTTC	Technical Teachers Training College
TVET	technical and vocational education and training
UCEP	Underprivileged Children's Educational Programs
VTTI	Vocational Teachers Training Institute

\$1.00 = Tk82.00 (as of April 2013)

CHAPTER 1

Socioeconomic Background

A. Population

Bangladesh is one of the most densely populated countries in the world, with an estimated 142.3 million people occupying a total land area of just about 144,000 square kilometers. The annual population growth rate is 1.34%. Life expectancy for both males and females is 67 years.¹

The population is relatively young: the 0–25-year age group comprises 54.3% compared with 3.9% for people aged 65 years or older. The median age (18 years) is an offshoot of the population explosion of the 1960s and 1970s, when the population increased from 50 million to 90 million. Projections suggest that the population will reach about 190 million by 2030. Although 75% of the people live in rural areas, an emerging trend toward urban migration has produced an annual growth rate of 3.6% in urban areas. This trend is expected to continue in the next decade, creating more population pressure in major centers such as Dhaka and Chittagong. The literacy rate for people aged 7 years and older increased from 51.9% in 2005 to 57.9% in 2010. In rural areas, the literacy rate increased from 46.7% in 2005 to 53.4% in 2010, compared with the increase in urban areas from 67.6% to 70.4% during the same period.²

B. Economy

The per capita gross domestic product (GDP) of Bangladesh was estimated at \$755. Agriculture accounted for 20.3% of GDP, with industry contributing 29.9% and services 49.8% (Bangladesh Bureau of Statistics 2011). Remittances from migrant workers totaled about 9% (\$10 billion) in 2009, increasing to 10% (\$11 billion) in 2010 and \$12 billion in 2011.³

Private consumption grew at an annual rate of 4.65% in 2010. Per capita household consumption was \$293, spent for food with (about 49%), fuel (18%), health care (8%), and education (9%).⁴ The richest 10% of the population accounted for about 28.6% of household consumption, and the poorest 10% accounted for just 3.9%. Estimates show

¹ Bangladesh Economic Review 2011 (Socioeconomic Indicators), Ministry of Finance.

² Bangladesh Bureau of Statistics. *Report of the Household Income and Expenditure Survey 2010*.

³ BMET website, <http://www.bmet.gov.bd/BMET/index>

⁴ Household consumption includes expenditures of individuals, households, and nongovernment organizations for goods and services, excluding purchase of dwellings.

that 36.3% of the population had incomes below the poverty line (Bangladesh Bureau of Statistics 2011).

Despite challenges regarding political instability, poor infrastructure, corruption, insufficient electricity supply, and slow implementation of economic reforms, the country's economy has managed to grow about 5%–6% every year since 1996. Economic growth also proved quite resilient during the 2008–2009 global financial crisis and recession.

Its economy's positive performance notwithstanding, Bangladesh remains an overpopulated poor nation. The 2010 Global Competitiveness Index of the World Economic Forum ranks Bangladesh 107th overall among 139 countries. Table 1 shows the country's performance ranking in specific areas.

Table 1: Global Competitiveness Rankings for Bangladesh Out of 139 Countries, 2010–2011

Indicator	Rank (no.)
Institutions	115
Infrastructure	133
Macroeconomic environment	80
Health and primary education	106
Higher education and training	126
Goods market efficiency	102
Labor market efficiency	108
Financial market sophistication	66
Technological readiness	126
Market size	47
Business sophistication	105
Innovation	119

Source: World Economic Forum. 2010. Global Competitiveness Report 2010–2011.

C. Labor Force and Employment

Bangladesh's total labor force was 56.7 million in 2010, a 22.5% increase from 46.3 million in 2002. It currently gains an average of about 1.5 million new entrants per year. If this trend continues, the labor force will reach 64 million in 2014–2015. With an employment growth rate of 3.2%, total employment will be 61 million. This will require the creation of about 9 million jobs during 2010–2015. By 2030, the country's labor force will reach 95 million.

On the other hand, about 50% of the employed population works in agriculture, 14% in industry, and 36% in services (Bangladesh Labor Force Survey 2010). To sustain economic growth, businesses will require a huge number of skilled workers, particularly in the industry and service sectors. At present, employers must contend with a dearth of skilled workers (World Bank 2007).

About 70% of employees work in the private sector, compared with 30% in the public sector. The informal sector accounted for 79% of employment, compared with 21% in the formal sector. About 49% of workers are employed in agriculture, compared with 51% in nonagriculture jobs. Overall unemployment was relatively low (4%) in 2007, increasing to 5.1% in 2010 and accounting for an estimated 2.6 million unemployed. On the other hand, underemployment (i.e., working less than 35 hours per week) was higher (17%) and particularly prevalent among females (53%) and in agriculture (20%) (World Bank 2007).

Conventional agriculture appears to have reached its absorptive capacity. With a decreasing share of GDP and an increasing share of employment, the average productivity per worker in agriculture is declining. Therefore, there is an urgent need to shift labor into higher productivity sectors such as agro-industry and services.

Occupational shifts observed over time seem compatible with a situation that encounters no increase in the complexity of technology and economic organization. Females appear to have larger proportionate shares than males in agricultural and service occupations, and smaller shares in professional, administrative, clerical, sales, production, and transport work, etc. Only about 14% of local employees work for wages (ADB 2008).

According to a study on the Bangladesh labor market, the eight growth promoting, labor-intensive, and skill-intensive sectors are (i) pharmaceuticals, (ii) textiles, (iii) food manufacturing, (iv) furniture, (v) ceramics, (vi) leather and leather goods, (vii) transport equipment, and (viii) information technology (Rahman et al. 2012). Positive export growth has also been observed in drugs and pharmaceuticals, leather, textiles, ceramics, and transport equipment. In addition, the relative shares of employees by occupation and skill reinforce the notion that there is a large potential for generating skill-intensive employment in these eight sectors. Among these sectors, furniture, ceramics, transport equipment (under shipbuilding and cycle manufacturing), and information technology are the most skill intensive.

Table 2 shows the percentage of total employment by major occupation, and Table 3 shows the percentage by major industry.

Table 2: Total Employment by Major Occupation (%)

Category of Occupation	Workforce Aged 15+ Years (%)			
	1999	2002	2005	2010
Professional, technical	4.1	3.8	4.6	4.4
Administrative, managerial	0.5	0.2	0.4	1.2
Clerical	3.0	3.3	2.1	1.8
Sales	14.8	14.6	13.5	15.2
Services	5.6	4.5	5.9	5.5
Agriculture, forestry, and fisheries	49.4	51.4	48.52	47.5
Production and transport, laborers, and others	20.7	21.8	24.2	24.9
Total (million)	39.0	44.3	47.4	54.1

Source: Bangladesh Bureau of Statistics. 2011. Bangladesh Labor Force Survey 2010.

Table 3: Total Employment by Major Industry (%)

Major Industry Sector	Workforce Aged 15+ years (%)			
	1999	2002	2005	2010
Agriculture, forestry, and fisheries	50.7	51.6	48.1	47.5
Mining and quarrying	0.5	0.2	0.2	0.1
Manufacturing	9.4	9.7	10.9	12.4
Electricity, gas, and water	0.2	0.2	0.2	0.1
Construction	2.8	3.3	3.1	4.8
Trade, hotels, and restaurants	15.6	15.1	16.4	15.5
Transport, storage, and communication	6.4	6.7	8.4	7.3
Finance, business services, and real estate	1.0	0.6	1.4	1.8
Health, education, public administration, defense	5.7	5.6	5.4	4.2
Community and personal services	13.0	6.0	5.4	6.2
Total Workforce (million)	39.0	44.3	47.4	54.1

Source: Bangladesh Bureau of Statistics. 2011. Bangladesh Labor Force Survey 2010.

Industrial productivity can increase significantly if industries can access workers who already possess a good set of basic skills upon entry. A report made by the National Productivity Organization revealed a direct relationship between labor productivity and worker skills, and also showed a significant increase in subsector productivity resulting from engagement of a skilled workforce.⁵ However, occupational structure of a country is influenced not only by industrial shifts, but also by occupational substitution and increases in the general education and vocational training of its population.

In Bangladesh, about 40.1% of the working-age population lacks, and 22.8% have only a grades 1–5 education (Bangladesh Labor Force Survey 2010). This huge reservoir of illiterate and unskilled workers remains an untapped potential for socioeconomic development. Importantly, the share of the population with formal technical and vocational education and training (TVET) qualifications is minuscule. For every employee with TVET qualifications, 104 had a secondary school certificate or higher secondary certificate, and 34 had university degrees (World Bank 2010).

The Global Competitiveness Index ranked Bangladesh 126th among 139 countries in education and training.⁶ By contrast, India and Sri Lanka were ranked 85th and 62nd, respectively, in education and training.

Improving the quality of skills among its labor force will help further economic growth in Bangladesh. Thus, there is an urgent need to provide better access to TVET to help increase productivity and ensure wider diffusion of modern technologies. The Bangladesh Poverty Reduction Strategy Paper identifies the promotion of vocational training and skills

⁵ Report on the analysis of productivity of selected industries, 2004. National Productivity Organization, Ministry of Industries, Government of Bangladesh.

⁶ World Economic Forum. 2010. Global Competitiveness Report 2010–2011.

development as a strategic goal for accelerating the growth process, reducing poverty, and lessening vulnerability.

D. Overseas Employment and Remittances

Overseas employment has become a major source of income for Bangladesh. The BMET maintains an important database on the skill levels of migrant workers, who are classified into four skill categories:

- professional (doctors, engineers, teachers, and nurses);
- skilled (garment workers, masons, drivers, electricians, plumbers, and welders);
- semiskilled (tailors and gardeners); and
- low-skilled/unskilled (hotel boys, cleaners, domestic help/housekeepers, and cart loaders).

Table 4 shows the number of migrant workers by skill categories for 2000–2010. The flow of migrant workers in 2007 and 2008 doubled compared with 2006, but abruptly decreased in 2009 and 2010 due to the global economic recession.

In 2000–2010, about 1.50% of migrant workers were professional, 29.06% were skilled, and 12.78% were semiskilled. The rest, about 56.66%, were either less skilled or unskilled. This data indicates the necessity of training laborers who intend to work abroad. Training laborers will help them earn more income compared with unskilled workers, and substantially increase the flow of remittances (BMET).

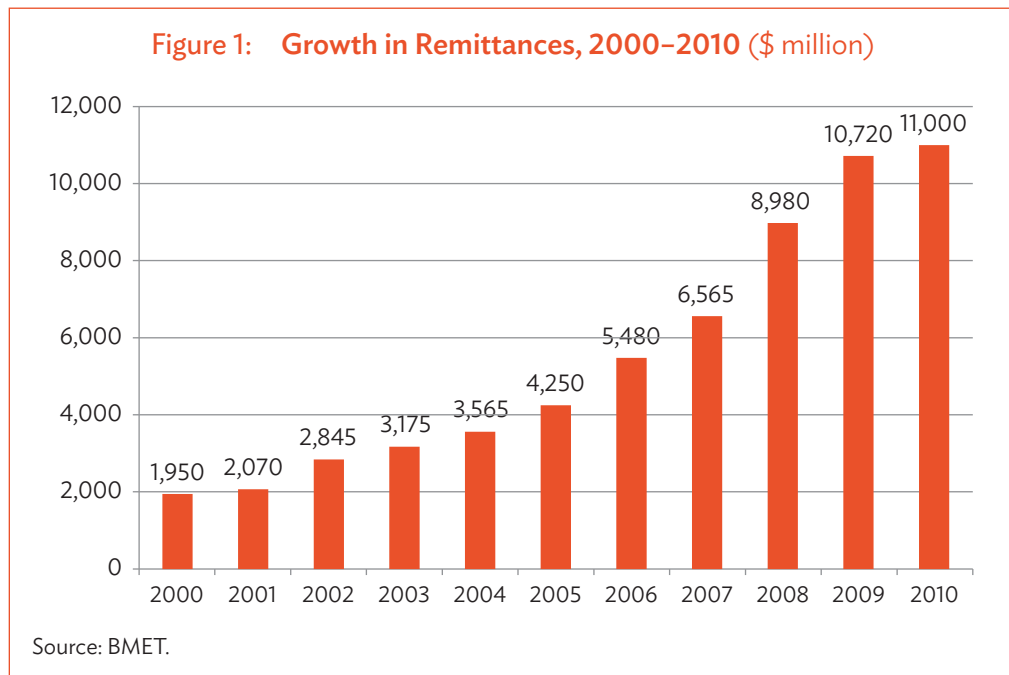
Table 4: Flow of Migrant Workers by Skill Category, 2000–2010

Year	Skill Category				Total (no.)
	Professional (no.)	Skilled (no.)	Semiskilled (no.)	Less Skilled (no.)	
2000	10,669	99,606	26,461	85,950	222,686
2001	5,954	42,742	30,702	109,581	188,965
2002	14,450	56,265	36,025	118,516	225,256
2003	15,862	74,530	29,236	134,562	254,190
2004	12,202	110,177	28,327	122,252	272,958
2005	1,945	113,655	24,546	112,556	252,702
2006	925	115,468	33,965	231,158	381,516
2007	676	165,338	183,673	482,922	832,609
2008	1,864	292,364	132,825	448,002	875,055
2009	383	104,627	18,419	341,922	465,351
2010	387	90,621	12,469	279,673	383,150
Total	65,303	1,265,393	556,648	2,467,094	4,354,438

Source: BMET.

Remittances from abroad grew steadily during 2000–2010 (Figure 1), chiefly due to large numbers of migrant workers. Remittances increased every year, even though most migrant workers were unskilled.

Inflows could have been greater if the workers had been skilled. Hence, the government has realized the necessity of technical education programs for migrant workers and outlined its strategies for action in the Outline Perspective Plan of Bangladesh 2010–2021, including (i) close monitoring and supervision of the activities and practices of recruitment agencies in their provision of information on skill requirements, working conditions, accommodation benefits, and obligations to migrants; (ii) training laborers for high-demand vocations and skills in global markets, and redefining the functions and roles of foreign missions to better assess and protect the rights of migrant workers; and (iii) making the Overseas Employment Policy more comprehensive regarding workers' and employers' documentation, employment contracts and implementation, and settling workers' welfare. Implementation of these strategies will definitely enhance the growth of remittance inflows, which account for about 10% of GDP and represent a very promising source of external resources.⁷



⁷ Outline Perspective Plan of Bangladesh 2010–2021.

CHAPTER 2

Training System in Bangladesh

The technical and vocational education and training (TVET) system in Bangladesh is comprised of formal and nonformal TVET. In a formal TVET system, students gain entrance to the diploma level in monotronics and polytechnics after completing a secondary school certificate (SSC), both general and vocational. The minimum educational requirement for entry to the higher secondary certificate (vocational) (HSC Voc) is SSC Voc, and the requirement for entrance to SSC Voc is completion of grade 8. In 2011, almost 500,000 students enrolled in formal TVET. On the other hand, nonformal TVET is comprised of certificate courses with duration ranging from 1 month to 12 months designed by the nonformal TVET providers and the courses they offer are not affiliated with Bangladesh Technical Education Board (BTEB).

A. Structure of Technical and Vocational Education and Training

1. Formal

Formal training is regulated and administered by the relevant ministries, directorates, or other public bodies. Those who successfully complete a formal training receive a national certificate. Formal TVET programs are affiliated with BTEB.

Levels of Formal TVET

The formal TVET system comprises three levels of skills development programs: basic, certificate, and diploma. Each of these program levels corresponds to training that meets various certification standards.

Basic Training Program. Also known as basic trade, the basic training program is a 360-hour skills training course that focuses on the development of practical skills and includes some theory. Courses last from 3 to 6 months. The minimum educational requirement for entry is completion of grade 8, but 1 year of trade-specific work experience qualifies students for the basic trade test even when they did not pass grade 8. Basic trade is offered mainly by technical training centers (TTCs), technical school and colleges (TCS), polytechnic institutes, private institutions, and some nongovernment organizations (NGOs). The training program covers 61 trade areas, and aims to meet the needs of both domestic and overseas job markets.

Certificate Training Program. Certificate-level training largely pertains to SSC Voc and HSC Voc courses at the secondary level. The entry qualification for SSC Voc is grade 8 passed. SSC Voc attracts students of vocational courses because of its equivalency to the general SSC, which provides entry to higher education and complies with National Skills Standard II after completion of the 2-year secondary education program for entry into work world. Students who complete 1 year of SSC Voc (grade 9) already have a National Skills Standard III certificate. After completing the SSC Voc program (grade 10), students may enter the 2-year HSC Voc program, after which they receive two qualifications: (i) entry to higher education, and (ii) a National Skills Standard I certification if they wish to seek work. After introducing SSC Voc and HSC Voc in 1995, the National Skills Standard became widely diversified and expanded to secondary-level education and training institutes.

Diploma Courses. More than 384 public and private polytechnic institutes offer 4-year postsecondary diploma courses in engineering, covering 42 technological areas but excluding textiles and agriculture. Students enter polytechnic institutes from SSC general, Dakhil General, Dakhil Voc and SSC Voc.⁸ The courses at polytechnic institutes are designed by the BTEB,⁹ which also administers final semestral examinations. However, the institutions conduct half of all final practical examinations, involving experts from relevant industries and departments (e.g., the Power Development Board, the Roads and Highways Department, and the Public Works Department). To enhance students' knowledge and skills, and to develop industry linkages, polytechnic institutes also arrange 3-month industrial attachment training. Public polytechnic institutes operate programs in two shifts to cover more students.

Students can achieve the entry qualification for a diploma in engineering in any of the SSC streams (Figure 2). The TVET system prepares students who intend to pursue postgraduate and PhD education in engineering, and also provides a clear assessment of the amount of education required for further education in the diploma in an engineering/technology program. Presently, diploma graduates can gain admission to only one publicly operated engineering university, located in Gazipur, Dhaka, which was established exclusively for diploma graduates. However, diploma graduates can pursue higher-degree engineering programs at private universities.

Qualifications Granted

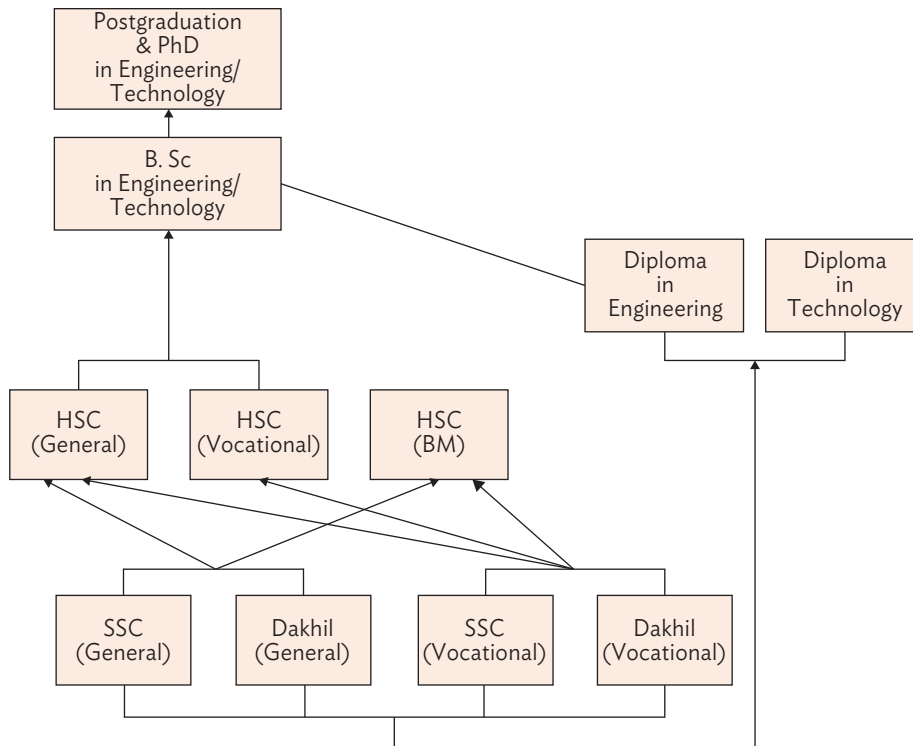
Initiated in the early 1980s, the National Vocational Qualifications Framework was designed to reflect the five levels of National Skill Standards (NSS): Basic, NSS III, NSS II, NSS I, and Master Craftsman¹⁰ (Table 5). About 750 institutes offer basic courses (NSS), and 92% are privately operated. Most institutes (e.g., TSCs, TTCs, and privately owned training institutions) offer SSC Voc and HSC Voc courses. In 2011, as many as 5,149 BTEB-affiliated institutes, both public and private, offered these courses and HSC (business management). BTEB has initiated the process to replace this current qualification framework with National Technical and Vocational Qualification Framework (NTVQF) as prescribed in NSDP 2011.

⁸ Interview with the Principal of Dhaka Polytechnic. September 2011, Dhaka.

⁹ BTEB has curriculum specialists, academicians, and industry experts.

¹⁰ NSS I is higher level than NSS III and NSS II. Those who completed NSS I and have 3 years of industrial experience may become master craftspersons. At present, however, no one pursues this practice.

Figure 2: Structure of Technical Education in Bangladesh



BM = business management, B. Sci. = bachelor of science, HSC =higher secondary certificate, SSC = secondary school certificate.

Notes: *Dakhil* General and *Dakhil* Vocational are equivalent to SSC General/Voc in *madrasah*. *Madrasah* refers to religious schools for the study of the Islamic religion.

Source: BTEB.

Types of Institutions in Formal TVET

TVET institutions in Bangladesh are funded and operated by the government or managed by NGOs or private entities.

Polytechnics and Monotechnics. Both public and private polytechnic and monotechnic institutes offer a 4-year diploma in postsecondary engineering, which is accredited by BTEB. In 2011, 159,086 students enrolled in 385 polytechnic and monotechnic institutes that offer diploma courses (Table 6). Of these, 101,766 enrolled in 76 public institutes that offered 42 training programs. Twenty-five monotechnic institutes offered six courses. The Ministry of Education (MOE) operates all public institutes, administered through DTE, except the Bangladesh Institute of Marine Technology in Narayanganj, Dhaka, which is operated by BMET, and the Agriculture Training Institutes, located at different districts, which are administered by the Department of Agriculture Extension.

Table 5: National Vocational Qualifications Framework

Certificate Received	Entry Requirement	Duration of Schooling	Providers/Institutions
Vocational education			
NSS (Basic)	Grade 8	3–6 months (360 hours)	TSCs, TTCs, NGOs, private institutes
NSS III	Grade 8	1 year	General schools, TSCs, TTCs, and private institutes
NSS II	Grade 8	2 years	General schools, TSCs, TTCs, private institutes
SSC Voc	Grade 8	2 years	General schools, TSCs, TTCs, NGOs, private institutes
NSS I/HSC voc/ HSC BM	SSC General/SSC Voc	2 years	General schools, TSCs, TTCs, NGOs, private institutes
Diploma-level programs			
Diploma in Engineering	SSC General/SSC Voc/ SSC Dakhil	4 years	Polytechnics and monotechnics (public and private)
Instructor and teachers training			
Certificate in Vocational Teaching	SSC pass with 2 years vocational training	1 year	VTTI
Diploma in Vocational Teaching	Certificate in vocational teaching/diploma in engineering	1 year	VTTI
Diploma in Technical Education	Diploma in engineering	1 year	TTTC
B.Sc. in Technical Education	Diploma in technical education	2 years	TTTC

BM = business management, B. Sc. = bachelor of science, HSC = higher secondary certificate, NGO = nongovernment organization, SSC = secondary school certificate, TSC = technical school and college, TTC = technical training center, TTTC = technical teachers training college, VTTI = vocational teachers training institute, Voc = vocational.

Source: BTEB.

Table 6: Diploma-Level Enrollments at Technical Institutions by Ownership, 2011

Type of Institutions	Institutions (no.)			Students (no.)		
	Public	Private	Total	Public	Private	Total
Diploma total	76	309	385	101,766	57,320	159,086
Polytechnics subtotal	51	149	200	75,412	42,603	118,015
Monotechnics subtotal	25	160	185	26,354	14,717	41,071
Of which						
Agriculture training institutes	14	137	151	22,020	10,846	32,866
Textile institutes	6	23	29	334	3,871	4,205
Survey institutes	2		2	768		768
Marine technology institute	1		1	1,500		1,500
Graphic arts institute	1		1	632		632
Glass and ceramics institute	1		1	1,100		1,100

Source: BTEB.

Technical School and Colleges. Bangladesh has 64 TSCs, found in all districts. Operated as vocational training institutions (VTIs) until the introduction of the SSC Voc and HSC Voc certificate training programs in 1995, TSCs currently operate certificate programs through DTE. TSCs also offer short courses.

Technical Training Centers. BMET operates all 38 TTCs, including the Institute of Marine Technology, which offer SSC Voc and short training courses. These institutes offer diversified training courses that cater to the needs of industries within Bangladesh and abroad. Customized courses address the organizational needs (e.g., the Bangladesh Garment Manufacturers and Exporters Association and the Bangladesh police force), particularly those selected for peacekeeping missions. TTCs also have a contract with Apex Leather Industry to train manpower for leather industry.¹¹ Moreover, TTCs also offer nonformal customized courses for people who have been selected for work abroad.

2. Nonformal

Nonformal trainings are also structured, have organized learning objectives and duration, and are provided with learning supports, but they are not affiliated/accredited by BTEB. These programs offer flexibility and cater to the capacity-building needs of target groups. Many organizations and public and private institutes develop their own curricula and keep linkages with the prospective employers to make their training programs responsive to the job market. The nonformal TVET or short skills training courses last 1–12 months. Diploma institutes and TTCs also offer 360-hour courses for students who wish to start their careers either at home or abroad.

One example of a short course is Housekeeping, which lasts 21 days and requires a minimum entry qualification of grade 5 completion. This course attracts rural people who intend to work abroad, especially in the Middle East. Other private institutions are actively involved in providing nonformal training to specific target groups who are selected by overseas employment agencies for jobs abroad. Mainly located near Dhaka City, these training institutions have linkages with overseas employment agencies but not affiliated with BTEB. They develop their own course curricula. The Mirpur Agricultural Workshop and Training School (MAWTS), for example, also offers various modular courses for people who intend to go abroad.

Other government agencies also provide nonformal training services. The Ministry of Women's and Children's Affairs operates short courses (e.g., poultry, dairy, livestock, food processing, plumbing, and electronics) for women in areas with local demand. In the Ministry of Youth and Sports, the Department of Youth Development operates 1–6 month training programs in various trades, aiming to help trainees engage in self- and wage employment; they also offer a 3-month residential course on livestock, poultry, and fish culture. The Department of Youth Development also offers courses on dressmaking and block and *batik* printing throughout Bangladesh. In addition, short-duration mobile training courses are offered at the *upazila*¹² level. Other providers include the Ministry of Social

¹¹ Interview with director (Training), September 2011, Dhaka.

¹² *Upazila* means subdistrict.

Welfare and the Directorate of Ansar and the Village Defense Party under the Ministry of Home Affairs.

B. System Performance

In 2011, 387,554 students enrolled in postsecondary, secondary, and basic courses. This figure excluded HSC (business management) enrollment. Private institutes accounted for 79% of total enrollment in SSC Voc courses and 92% in basic courses (Table 7).

Table 7: Overview of the Technical and Vocational Education and Training System, 2011

Level	Qualification	Duration	Institutions		Enrollment	
			Total (no.)	% Private	Total (no.)	% Private
Postsecondary	Diploma	4 years				
	Polytechnic		200	75	118,015	36
	Monotechnic		185	86	41,071	35
Secondary	Certificate					
	HSC	2 years	65	0	15,189	0
	SSC	2 years	2,048	92	162,429	79
Basic (NSS)	Certificate	3–6 months (360 hrs)	750	93	50,850	92

HSC = higher secondary certificate, NSS = National Skills Standard, SSC = secondary school certificate.

Notes: Table shows formal TVET and institutions affiliated with BTEB; no private institutions offer HSC Voc.

Source: BTEB.

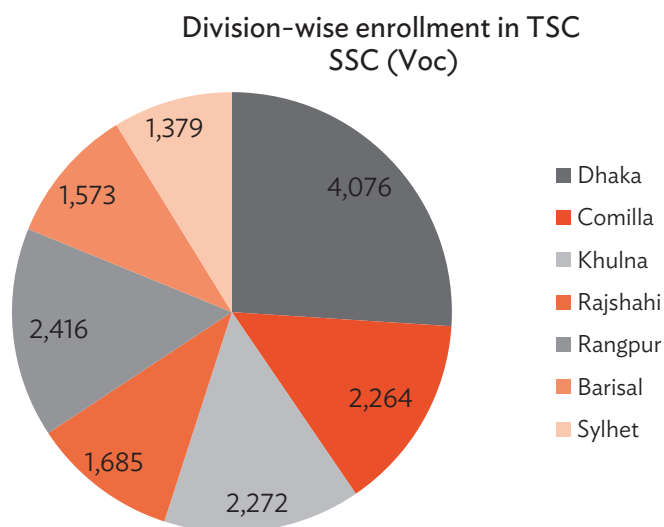
Also in 2011, 27,727 students attended SSC Voc (15,665) and HSC Voc (12,062) programs in 64 TSCs operated by DTE. Figures 3 and 4 show division-wise enrollment in SSC Voc and HSC Voc programs.

For TTCs, the total number of students who graduated (including SSC Voc and short courses) increased more than threefold from 18,012 in 2006 to 42,000 in 2008 to 59,456 in 2010 (BMET). The most popular course is the 21-day Housekeeping course, which is designed for women who intend to work abroad.

C. Organization and Management

The government provides skills development and technical training through 20 ministries and their various departments. These agencies provide formal training in all levels of TVET through government-operated technical schools, colleges, and polytechnic and monotechnic institutes. The National Skills Development Council (NSDC) is the main

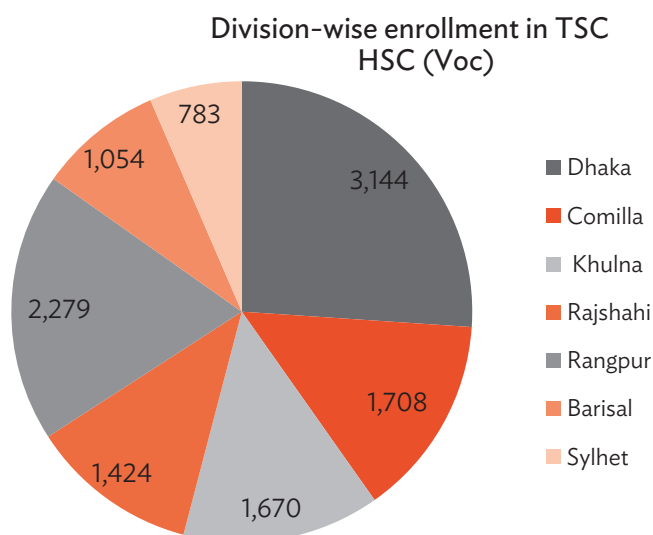
Figure 3: Enrollment in Secondary School Certificate Programs by Division



SSC (Voc) = secondary school certificate (vocational), TSC = technical schools and colleges.

Source: DTE.

Figure 4: Enrollment in Higher Secondary Certificate (Vocational) Programs by Division



HSC (Voc) = higher secondary certificate (vocational), TSC = technical schools and colleges.

Source: DTE.

coordinating and policymaking body, and the main public providers of TVET include Directorate of Technical Education (DTE) and Bureau of Manpower, Employment and Training (BMET). Other departments under different ministries involved in TVET are the Department of Agriculture Extension, Department of Textile, Department of Women Affairs, Department of Social Services, and Department of Youth Development. BTEB, the chief quality control agency, is responsible for developing formal TVET programs, certifying private trainers, and conducting examinations for TVET qualifications. BTEB and DTE are under the Ministry of Education (MOE), while BMET is under the Ministry of Expatriate Welfare and Overseas Employment (MEWOE).

National Skills Development Council. Formed in September 2011, NSDC has been a positive development for Bangladesh. The Council can address key issues related to the structure, policy, procedures, delivery, finance, and coordination of skills development programs. Its major functions include

- monitoring the implementation of the skills development action plan,
- initiating and coordinating various agencies,
- monitoring new agency initiatives for skills development,
- managing the national skills data system,
- developing an NSDC work plan, and
- administering duties associated with council meetings.

NSDC is an important tripartite forum comprised of 36 representatives from government, employers, workers, and civil society. Headed by the Prime Minister, it is the apex body for skills development and training. Government accounts for 64% of NSDC members, compared with 30% from private industry and associations, and 6% from civil society. NSDC holds at least one meeting per year, and its executive committee meets at least three times per year.

Located in Dhaka, the NSDC secretariat provides secretarial services to the executive committee of NSDC. The major functions of the secretariat include implementing the decisions of the executive committee and coordinating among various TVET providers and ministries involved in program delivery. Lodged in the Sheikh Fazilatunnesa Technical Training Center, the secretariat is headed by a joint secretary who functions as the chief executive officer. However, the secretariat is understaffed and faces budget constraints; it has not yet received enough funding to implement effective operations. It has proposed the creation of new positions, including four directors, seven deputy directors, three assistant directors, and additional support staff. The secretariat continues to face challenges coordinating stakeholders, funding arrangements, and fixing line functions with relevant ministries. On the other hand, it has also created opportunities for stakeholders to contribute to and support the development of TVET in Bangladesh. The immediate priorities of the secretariat are to (i) develop a skills data system, (ii) form sector-specific industry skills councils and make them operational, (iii) prepare a draft NSDC Act, and (iv) implement NSDP through an action plan.

Ministry of Education. As the government's apex policy-formulating institution for the administration and development of postprimary education, MOE formulates policies, procedures, rules, and regulations for postprimary to higher education, including technical

and vocational education and *madrasahs*.¹³ Several MOE departments manage, supervise, and control the secondary schools, colleges, *madrasahs*, TSCs, polytechnic institutes, engineering universities, and other universities. Established in 1972 as the Ministry of Education, Religion, Sports and Cultural Affairs, MOE assumed its current form in 1993. BTEB and DTE are under MOE.

Bangladesh Technical Education Board. BTEB was established as a statutory body under the East Pakistan Technical Education Act of 1967. Functioning under MOE, its chair reports to the Secretary of MOE. BTEB board comprises 15 members from Bangladesh University of Engineering and Technology (BUET), Dhaka University of Engineering and Technology (DUET), and heads of training institutions. The directors general of DTE and BMET are also important members of BTEB board, having direct involvement in policy formulation. BTEB board has no industry representatives.

In addition to developing and regulating formal TVET programs, BTEB has wide powers to effect change. Although under MOE, BTEB has academic control over institutions operated by various ministries. Essentially self-financed, BTEB generates its own funds, mainly from examination fees, affiliation and registration fees from private providers, and printing revenue. The major functions of BTEB include

- inspection, monitoring, and evaluation of educational institutions;
- development of demand-led technical and vocational training programs that meet international standards and fulfill domestic and international requirements;
- development of teaching/learning materials; and
- registration of institutions and accreditation of courses.

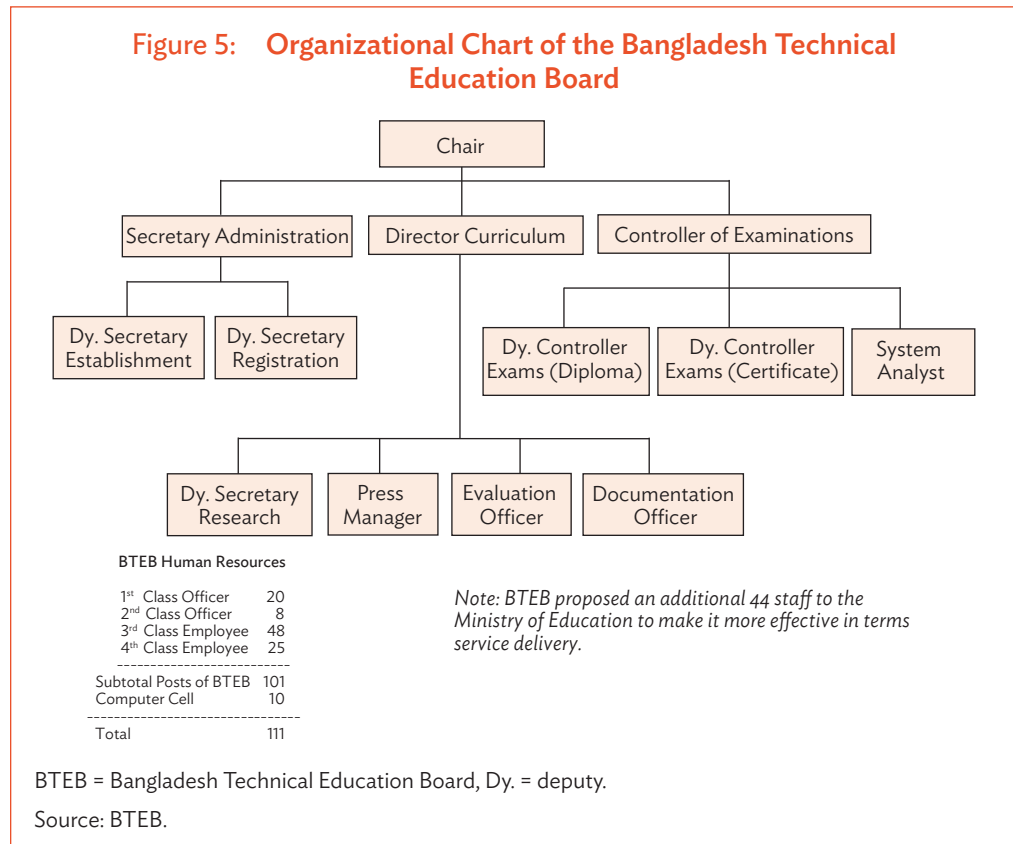
The BTEB's priorities include

- introducing the new National Technical and Vocational Quality Framework and Competency-Based Training and Assessment (CBT & A);
- introducing a National Skills Quality Assurance System;
- assessing and determining demand for skills in both the domestic and international job markets; and
- revising and updating curricula, and introducing emerging trends and technology to ensure relevance to the job market.

In addition to curriculum responsibilities, the director of curriculum manages the inspection, registration, and affiliation of training providers. With implementation of the National Technical and Vocational Qualifications Framework, the number of recognized qualifications will expand significantly (Comyn 2009). BTEB's Computer Cell gathers data on all registered training institutions and maintains enrollment and graduation data on public and private institutes that offer basic, SSC Voc, and diploma courses. Currently, seven curriculum specialists report to the Director (Curriculum), compared with the large number of trades developed and operated by BTEB. Consequently, reviewing and updating the curricula on a regular basis is difficult. BTEB submitted a proposal for additional posts, but it has not yet gained approval.

¹³ *Madrasahs* are religious schools for the study of the Islamic religion.

The present staffing and structure of BTEB (see Figure 5) needs to be revisited and re-structured for effective implementation of the National Skills Development Policy (NSDP) as it provides new directions and approaches to assessment, curriculum development, and quality assurance (Comyn 2009).



Directorate for Technical Education. With a network that includes 49 polytechnic and monotechnic institutes, 64 TSCs, 1 TTTC, and 1 VTTI, DTE is the largest TVET provider. Established in 1960, DTE initially oversaw five technical education institutions. At present, this number has reached 117. DTE manages and administers TVET institutions, develops TVET programs, and implements quality control mechanisms, and processes and proposes approval of eligible institutions to MOE for monthly payment orders (MPOs) of private training providers. MPOs are government subsidy that cover 100% of the basic salaries of teachers and staff of private training providers under this scheme. It also initiates the process of creating new projects relating to the reformation, reorganization, and overhaul of TVET systems, and the establishment of new TSCs and diploma institutes that offer diploma-level courses.

The scope of DTE's work includes

- technical education;
- distance education including educational media and technology;

- educational research and training;
- educational policy and reforms;
- curriculum development;
- policy directives on public examinations above primary school;
- external examinations, equivalence of degrees, diplomas, and certificates; and
- exchanges of degrees, diplomas, and certificates with foreign countries.

Although DTE administers all diploma institutes and TSCs, it has no authority to recruit instructors/teachers and support staff to fill vacancies. It takes about 2 years to fill vacant posts.¹⁴ This hinders service delivery at schools and institutes offering diploma courses because more than 45% of all sanctioned posts are vacant. Without a centralized database, DTE cannot readily obtain available data (e.g., enrollment, graduation, and admission data) on individual institutes. It also has no reports on tracer studies of TVET graduates, and lacks market information to devise strategy for program development.

DTE employs 149 staff, including the director general and the directors for Administration, the Project Implementation Unit, the Project Implementation Wing, Vocational, and Planning and Development. However, including teachers and support staff in TSCs, TTTCs, and VTTIs, about 5,000 officers, teachers, and support staff work for DTE.

Ministry of Expatriate Welfare and Overseas Employment. MEWOE was established in 2001 to ensure the welfare of expatriate workers and enhance overseas employment. Since then, the MEWOE has worked to increase the flow of remittances and provide equal opportunity for all Bangladeshis.

The major functions of MEWOE include

- contributing to the socioeconomic development of the country through overseas employment;
- ensuring the overall welfare of expatriates and protect their rights;
- expanding existing and explore new labor markets;
- assessing the demand of overseas labor markets and accordingly implement training schemes to create a skilled labor force;
- issuing/renewing recruiting agency licenses and conducting all activities related to overseas employment;
- providing financial and administrative assistance from the Wage Earner's Welfare Fund to deceased and endangered expatriates; and
- signing contracts and memorandums of understanding on training and employment with international organizations concerned with migration, governments of other countries, and other organizations.

Bureau of Manpower, Employment and Training. Established in 1976 as an agency of the Ministry of Manpower Development and Social Welfare, BMET focused on complying with domestic and export human resources requirements. Currently operating under MEWOE, BMET participates in overall planning and implementation strategies for the proper utilization of human resources. At present, BMET operates 37 TTCs and 1 marine institute, 42 district employment and manpower offices, and 3 apprenticeship offices.

¹⁴ Interview with the Director of Planning, Directorate of Technical Education. September 2011, Dhaka.

The major functions of BMET include

- processing foreign demand for Bangladeshi workers,
- control and regulation of recruiting agents and the legal process of manpower export,
- overseeing the welfare of migrant workers,
- providing institution-based TVET in different trades,
- planning and implementing development programs for training activities,
- conducting informal and special training courses,
- registering job seekers for the overseas market in the Computer Database Network, and
- collecting and disseminating labor market information.

BMET offers institutional diploma-level courses, SSC Voc courses, NSS II and NSS III trades, special courses designed by BMET, and tailor-made short courses, as well as industry-based training.

Experts from Japan Overseas Cooperation Volunteers, Japan International Cooperation Agency, and Korea International Cooperation Agency (KOICA) are helping improve BMET's training standards. KOICA, for example, helped modernize the Bangladesh-Korea Technical Training Centre, which offers high-quality training programs. Most of its instructors trained in the Republic of Korea, with financial assistance from KOICA.

BMET institutes offer SSC (voc), NSS II, and NSS III courses that adhere to the BMET curricula. It has designed 44 certificate courses¹⁵ that range from 21 days to 6 months, depending on the nature of the particular course. These courses were reviewed and updated in 2007, and 38 BMET institutes produced 59,456 graduates in 2010. The government approved the creation of another 35 institutes (30 TTCs and 5 marine institutes) targeted to open in 2015, and plans to establish a research wing and national database center.

D. Private Providers

Comyn (2009) observed that private providers constituted 95% of institutions and about 75% of total enrollment. Private providers continue their vibrant involvement and they sustain their operations through student fees. On the other hand, NGOs rely on financial assistance from development partners. NGOs provide free training, and most offer training for the underprivileged. Estimates suggest that a huge number of private institutes not affiliated with BTEB operate TVET programs, many of them targeting the information technology (IT) industry.

¹⁵ Forty-four courses in addition to 20 BTEB-affiliated courses.

1. Types of Private Providers

Publicly subsidized private providers. Hundreds of private TVET providers follow the BTEB curriculum, and many receive partial salary support for their staff from the government. Currently, 1,600 accredited private training institutions receive MPOs from the government. DTE initiates the process of an institute's inclusion in MPO scheme. Table 8 shows the present status of publicly subsidized TVET institutes.

Table 8: Publicly Subsidized Nongovernment Institutes for Technical and Vocational Education and Training

Type of Institution	Institutions (no.)	Teachers/Instructors (no.)	Support Staff (no.)
Technical college (business management)	728	3,127	3,082
SSC Voc	854	4,633	2,114
Madrasah (vocational and business management)	18	96	68
Total	1,600	7,856	5,264

SSC Voc = secondary school certificate (vocational).

Source: DTE (October 2011).

Private for-profit (commercial) providers. Insufficient data make it difficult to determine how commercial TVET institutions structure their programs. Currently, 309 commercial polytechnic and monotechnic institutes charge students substantial amounts. Many offer short training courses for students who intend to go abroad, but courses and duration vary from institute to institute. Many commercial institutions are affiliated with BTEB and other government agencies.

Nongovernment organizations. Some NGOs offer a variety of training courses to poor and underprivileged people. NGO-managed TVET programs mostly focus on creating opportunities for income generation and self-employment. Some major NGOs focus exclusively on nonformal TVET that aims to provide skilled manpower to industry. However, insufficient data make it impossible to determine the exact number and size of NGOs and their programs. Appendix 1 describes major NGOs that provide TVET.

Among the leading NGOs providing innovative and quality TVET, the Underprivileged Children's Educational Programs (UCEP), the Dhaka Ahsania Mission, and MAWTS maintain uniquely designed and delivered programs (Table 9).

Industry training institutions. Apart from Bangladesh Garments Manufacturers and Exporters Association's self-financed BGMEA University of Fashion and Technology (BUFT), formerly BGMEA Institute of Fashion and Technology (BIFT), several industry-based organizations have established their own training centers, including the Chittagong Skills Development Center, a model of industry-government cooperation, and the Dhaka

Table 9: Comparative Analysis of the Major Features of Three Nongovernment Training Programs

Organization	Programs	Trades (no.)	Enrollment (no.)	Curriculum	Employment
UCEP	Vocational training	18	4,800	<ul style="list-style-type: none"> Market responsive flexible on-the-job training most trades require 1 year of training 	More than 95% of graduates find jobs within 6 months
	SSC Voc	3	730	BTEB	90% of graduates find jobs
DAM	Diploma in engineering	7	1,502	BTEB	
	Vocational training	15	2,033	Own market-responsive curriculum, Most trades are 6–12 months	72% of graduates find jobs
MAWTS	Diploma in engineering	2	80	BTEB	
	Trade courses	2	44	3-year curriculum includes 2 years off-the-job and 1 year on-the-job training	90% of graduates
	Modular course	71	1,050	1–14 weeks	90% of graduates find jobs
	Mobile training	6	525	5½ months	85% of graduates find jobs or self-employment
	Regional technical schools	5	2,688	1-year curriculum includes 6 months off-the-job and 6 months on-the-job training	88% of graduates find jobs

BTEB = Bangladesh Technical Education Board, DAM = Dhaka Ahsania Mission, MAWTS = Mirpur Agricultural Workshop and Training School, SSC Voc = secondary school certificate (vocational), UCEP = Underprivileged Children's Educational Programs.

Sources: MAWTS, DAM, and UCEP.

Chamber of Commerce and Industry (DCCI) Business Institute, established by DCCI, a leading trade body. Appendix 2 describes major initiatives in industry training.

Enterprise-based training. The private sector dominates Bangladesh's economy, and it ultimately demands a huge supply of trained and skilled workers to maintain high productivity and accelerated growth. Because training providers cannot fulfill industry's growing demand for skilled workers, many enterprises and corporations operate their own training programs. However, various limitations interfere with any significant development in enterprise-based training.

The International Labour Organization (ILO)-JOBS (2009) survey and assessment of formal and informal apprenticeships in Bangladesh shows that the TVET system is deficient, outdated, and ineffective in providing work-oriented skills and knowledge. ILO-JOBS also indicates that formal apprenticeships are extremely limited, and that few

enterprises even know about the government mandate for an apprenticeship structure. The Labour Act (2006), Chapter XVIII (Apprenticeship) regulates the structure and legal preconditions for formal apprenticeship training. BMET is the Government of Bangladesh's mandated coordinating authority. The Labour Act (2006) stipulates that all companies employing 50 or more workers must have a functioning apprenticeship program in proportion (20%) to the overall number of employees. However, at present, there are only 1,129 apprentices undertaking the training and are registered with BMET throughout Bangladesh.¹⁶

When asked about the effectiveness of apprenticeship programs in Bangladesh, formal apprentices were generally positive, and most considered their programs “very effective.” Most formal employers said they recruit apprentices to fulfill corporate social responsibility requirements. In informal apprenticeships, 82% of enterprises recruit apprentices to fulfill their employment needs (ILO-JOBS survey, March 2009). Apprentice Regulation 2008 provides the regulation for employment, contract, and stipend of apprenticeship.

Traditional apprenticeship and training for the informal sector. Informal and traditional apprenticeships and on-the-job experience likely are the principal means for creating most of the skills that keep the bulk of the economy and production running. A master craftsperson who inherits skills from another master can train assistants in exchange for food or low wages. The skills apprentices acquire are often in the fields of welding, motor mechanics, carpentry, furniture making, plumbing, electrical, bicycle repair, motorcycle repair, etc. There is no written contract between master craftspersons and apprentices regarding salary and benefits, only informal agreement on the training period. However, the government and the private sector could develop a system to introduce more formal training programs to complement and supplement the informal system. According to the Sixth Five-Year Plan (SFYP), 2011–2015, introduction of a formal system could enhance the effectiveness of the country's total skills-generation capacity.

2. Regulation and Accreditation of Private Providers

The government prescribes the regulations for private institutions (Table 10), also applicable to public institutions.

BTEB is responsible for regulating private TVET programs, but lacks the capacity to fulfill those responsibilities, resulting in poor service delivery. Although BTEB has an inspection and monitoring cell, it is not fully staffed, which affect the frequency of inspection as well as service delivery by private training providers.

The accreditation process for establishing a private training institute requires

- A completed application form in a prescribed format, a project proposal, fees, and necessary papers and documents submitted to the chair of BTEB for primary approval.
- Scrutiny by BTEB's affiliation committee, which determines suitability for primary approval.

¹⁶ Cordier, Gold, and Habib. 2012. *Strengthening the Apprenticeship System in Bangladesh (A study for TVET Reform Project)*.

Table 10: Regulations for Training Institutions

Administrative Controls	Academic Affairs	Teacher and Student Regulations	Financing
<ul style="list-style-type: none"> • Government accreditation • Health and safety standards • Institutions must own their premises but can start with rented premises • Compliance with construction standards, including room sizes • Limit enrollment to admission capacity 	<ul style="list-style-type: none"> • Adherence to public sector curricula (i.e., the BTEB curricula) and programs • Government-regulated hours of instruction and school holidays • Government-regulated admission requirements • Government-specified language of instruction 	<ul style="list-style-type: none"> • Government procedures and criteria for student selection • Government procedures and criteria for hiring and firing teachers; BTEB specifies minimum teacher qualifications • Government-specified teachers' wages • Institutions must submit reports to the government explaining the allocation of resources between teachers' compensation and other inputs 	<ul style="list-style-type: none"> • Not-for-profit status • Required submission of financial balance sheets • Minimum investment level • Government-fixed tuition fees

Source: BTEB.

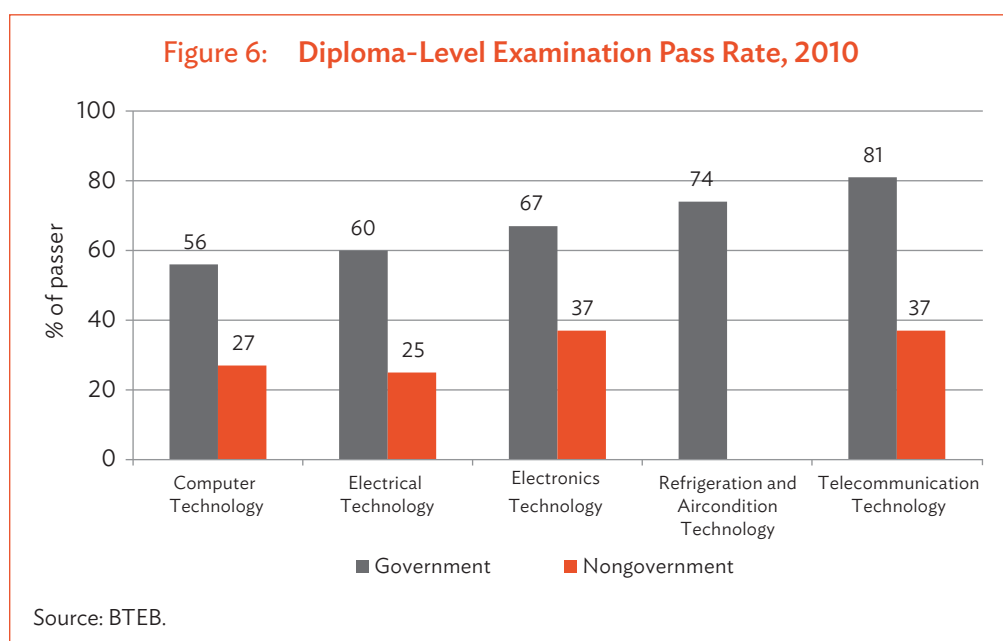
- An inspection team report, including recommendations for BTEB. Depending on certain terms and conditions and based on the inspection report and recommendations of the affiliation committee, primary approval for establishing an institution is normally given within 4 months.
- Upon obtaining primary approval from BTEB, development of land/building and facilities by the institute's authority, including progress reports to the board.
- Inspection of physical progress by BTEB team, plus corresponding report and recommendations.
- After reviewing affiliation committee recommendations, provisional approval by the chair to start training courses for a period of 1 year, with certain terms and conditions.
- Application by a provisionally affiliated institute for a 1- to 4-year extension, subject to fulfilling certain terms and conditions.
- BTEB final approval for affiliation.

E. Examination Performance

BTEB exercises quality assurance through standardized examinations.

1. Diploma

Compared with privately operated institutions, the pass rate in government-operated polytechnics is substantially higher (27.8%–46% vs. 44.4%–69.9%, respectively). The female pass rate in private institutes is generally lower than that in government institutes. Among 15,963 students from both government and private institutes who appeared for exams in 2010, 9,000 passed (61.3%). Appendix 3 shows the annual results of diploma-level examinations in 2006–2010 (see Table A3.1). Figure 6 shows the diploma-level pass rate of major providers.



2. Higher Secondary Certificate (Vocational)

Only TSCs offer HSC Voc. As the number of examinees increased, the pass rates improved significantly (Table 11). BTEB attributes this substantial improvement, particularly from 2010 onward, to effective monitoring and supervision by DTE.

The female and total pass rate, by program, was 48%–73% and 41%–62%, respectively, showing that females generally perform better than males. This data also raises issue on how females select their program. Male-dominated trades (e.g., machine tools operation and maintenance; welding and fabrication) attracted very few female students, but the pass

Table 11: Examination Results for Public Higher Secondary Certificate (Vocational), 2007–2011

Exam Year	Appeared (no.)	Passed (no.)	Passed (%)
2007	2,645	1,260	47
2008	2,676	1,294	49
2009	3,638	2,206	60
2010	6,165	4,465	72
2011	6,554	4,883	74

Source: BTEB.

rate indicates that females perform well irrespective of the nature of trades or programs. Appendix 3 shows the results of the 2010 HSC Voc-level examination (see Table A3.2).

3. Secondary School Certificate (Vocational)

During 2007–2011, SSC Voc examinations in public and private institutes indicated increasing enrollment, and gradually improving performance (Table 12). Public institutes performed slightly better than private institutes.

Female pass rates, by program, were 64%–90%, compared with total pass rates (69%–88%). Appendix 3 shows the results for SSC Voc in 2011 by training provider, gender, and program (see Table A3.3).

Table 12: Examination Results for Secondary School Certificate, 2007–2011

Exam Year	Institutions	Appeared (no.)	Passed (no.)	Passed (%)
2007	Public	14,529	8,547	58.8
	Private	50,104	25,215	50.3
	Total	64,633	33,762	52.2
2008	Public	18,042	12,805	70.9
	Private	64,545	41,512	64.3
	Total	82,587	54,317	65.8
2009	Public	21,121	12,045	57.1
	Private	76,120	43,532	57.2
	Total	97,241	55,577	57.2
2010	Public	17,489	15,512	88.7
	Private	60,537	51,245	84.6
	Total	78,026	66,757	85.6
2011	Public	18,923	14,583	77.1
	Private	63,998	43,866	68.5
	Total	82,921	58,449	70.5

Source: BTEB.

4. National Skills Standards

The NSS programs are run mostly by private institutes. Table 13 shows steady overall performance (77%) from 2009 to 2011. Public institutions register a higher pass rate than private ones. Appendix 3 includes the 2011 NSS-level examination results (see Table A3.4).

Table 13: Results of National Skills Standard (360 hours) Examination, 2009–2011

Exam Year	Institutions	Appeared (no.)	Passed	
			(no.)	%
2009	Public	1,048	824	79
	Private	16,894	13,068	77
	Total	17,942	13,892	77
2010	Public	1,942	1,610	83
	Private	53,828	41,262	77
	Total	55,770	42,872	77
2011	Public	2,054	1,624	80
	Private	75,773	58,078	77
	Total	77,827	59,702	77

Source: BTEB.

F. Costs and Financing

The government finances the majority of the costs of public training institutions and a significant share of teacher salaries at BTEB-approved private secondary vocational institutions through MPOs.

Different numbers have been cited about the proportion of MOE financing devoted to TVET. However, they have one thing in common—all the percentages are low. According to DTE, TVET absorbs 1.7% of the MOE budget. Another source indicates that the government spends a mere 1.3% of its education budget on TVET, and that it decreased from 2.5% in 2004–2005 (World Bank 2010). Allocation for TSCs, MOE polytechnics institutes, and BMET's TTCs accounted for 2.2% of the total education budget in 2007–2008, which included MOE and the Ministry of Primary and Mass Education. Including MPOs for BTEB-approved SSC (voc) and HSC (voc) institutions, public spending for TVET comprised about 2.6% of the total education budget (Dohmen 2009). Only about 1,600 of all BTEB-approved private TVET providers receive MPOs.

Students also contribute through tuition and examination fees. However, these fees are minimal (only Tk20 per semester for public institutions) and do not provide substantial sources of funding for public institutions. Any cost recovery from students is mostly offset by stipends and scholarships to about two-thirds of all students in public institutions, who

are not subjected to income criteria or means testing. Rather than contributing financially to the cost of their own training, students receive additional and possibly unnecessary incentives (World Bank 2007; Dohmen 2009).

Government grants provided about 70% of public institutions' revenue. In addition, public diploma institutions produce about 20% of their revenue from fees. Private secondary-level institutions received, on average, slightly more than half of their revenue from MPO grants. Private diploma-level institutions are entirely self-financing. Based on a limited institutional survey, Table 14 shows the composition of funding received, by source, by public and private institutions.

Table 14: Funding Sources for Technical and Vocational Education and Training Institutions by Ownership and Level (%)

Source	Public		Private	
	SSC Voc and HSC Voc	Postsecondary (Diploma)	SSC Voc and HSC Voc	Postsecondary (Diploma)
Government grants	75.2	69.0	54.6	0.0
Tuition and fees	4.9	20.1	14.5	76.8
Sale of products	3.2	6.0	7.3	0.8
Income from training	4.9	0.0	9.2	6.5
Others	11.8	4.9	14.4	15.9
Total	100.0	100.0	100.0	100.0

HSC Voc = higher secondary certificate (vocational), SSC Voc = secondary school certificate (vocational), TVET = technical and vocational education and training.

Source: World Bank 2007. Institutional survey covering 357 accredited secondary and postsecondary TVET institutions.

Public institutions can use tuition fees to fund short courses, and such fees remain at the institution and increase revenue. Regulations determine the use of the funds, mainly for teachers' salaries and teaching materials/consumables. However, these funds do not appear to provide a significant source of income. No institution raised a significant share of its revenue by selling products or providing training services outside its regular programs.

Two major budget items—revenue and development—finance public TVET. Development budgets fund major TVET projects and initial recurrent expenses for new institutions. When an institution is fully established, development projects are transferred to the revenue budget. However, this transition is a serious problem because the long time frame creates insecurity for personnel and financing. The process for determining the revenue budget is upside down and input-driven (Dohmen 2009). Most institutions are financed based on increments of previous budgets (World Bank 2010); once approved, they cannot transfer funds from one main head to another head of expenditure. This inflexibility means that institutions must surrender funds to the government (Ministry of Finance) although there may be an urgent need for other expenditure items (e.g., instructional materials) that have already used up their allocations. In addition, protracted procurement procedures mean that some institutions cannot spend their entire budget (Dohmen 2009).

TVET institutions spend about 85%–90% of their government subsidies on teacher salaries and allowances. Several polytechnics had no budget allocation for recurrent expenditures other than for salaries and allowances. In comparison, TTCs spend an average 88% of their allocation on salaries and allowances, leaving only 12% for other recurrent expenditures (of which, roughly two-thirds is spent on electricity), leaving a very limited amount for funding other costs of instruction (Dohmen 2009; World Bank 2010).

Compared with general education, the per-student cost of public TVET is expensive, largely owing to smaller class size and equipment and supplies. According to a 2007 World Bank study, the average TVET unit costs were nearly three times higher than the cost of general studies, and the per-student cost (Tk16,000 or \$195) of public vocational secondary institutions is nearly three times higher than the cost of public general secondary schools. Similarly, public polytechnics cost about an average of Tk13,500 (\$165) per student vs. Tk4,720 (\$58) for government colleges (World Bank 2007). After accounting for revised budgets, calculations for 2008–2009 showed lower but widely varied per-student costs: Tk10,700 (\$130) per student, ranging from Tk6,425 (\$78) to Tk31,500 (\$834) for polytechnics, and Tk12,100 (\$148) per student for TSCs, ranging from Tk5,400 (\$66) to Tk22,900 (\$279) (Dohmen 2009).

CHAPTER 3

Policies, Plans, and Reform Programs

The government has five major policies and plans with prescriptions and implications for technical and vocational education and training (TVET): (i) Vision 2021, (ii) the Poverty Reduction Strategy II (PRSP II) 2009–2011, (iii) Education Policy 2010, (iv) the National Skills Development Policy (NSDP) 2011, and (v) the Sixth Five-Year Plan (SFYP) 2011–2015. It has also implemented three major reform programs to strengthen the country's TVET system in cooperation with development partners.

A. Policies and Plans

Vision 2021. The present government outlines its plans for the progress and development of Bangladesh in the Vision 2021 program. Vision 2021 pledges to combat poverty by building a Digital Bangladesh and joining the ranks of middle-income countries. The government also recognizes the huge increasing demand for skilled manpower at home and abroad. Therefore, Vision 2021 emphasizes the production of more skilled manpower for work abroad. It envisions that formal training will enhance the knowledge, skills, and creativity of all new entrants to the workforce, allowing Bangladesh to achieve nearly full employment by 2021. The government also envisions that both the public and private sectors will expand the network of quality vocational training institutes, thus ensuring full-scale vocational training with adequate practical exposure.

Poverty Reduction Strategy Program II (2009–2011). Poverty Reduction Strategy Paper II (PRSP II) has three main objectives pertaining to TVET: (i) TVET students shall comprise 20% of all secondary students (up from 3%); (ii) increasing TVET enrollment by 50%; and (iii) increasing female enrollment by 60%. The expansion of TVET should provide the poor, adolescents, young adults, and students in grades 6–7 or their equivalent with access to TVET. PRSP II emphasizes curriculum revision in terms of duration, timetable, increased flexibility, and enhanced market orientation.

TVET Strategies in the Education Policy 2010. The comprehensive Education Policy emphasizes new ideas about strengthening and scaling up TVET in terms of access. Adopted in 2010, the policy gives attention to the need to attract more qualified and experienced persons from industry to teach TVET programs. The policy also recognizes that higher education is not for everyone, and seeks to provide due emphasis on technical education to increase employment prospects. Its various approaches and interventions will require huge reforms and costs. As such, the promotion of public–private partnership to foster TVET development is important. The Education Policy 2010 contains about 25 strategies that highlight Bangladesh's intention to make its people competitive by

improving access to and the quality of TVET, harnessing the potential of information and communications technology (ICT), and maximizing the contribution of the private sector, among others.

In summary, the 25 strategies focus on expansion, access, and vertical mobility. The recommendations call for a massive expansion of TVET by adding pre-vocational and vocational education in general and secondary education, establishing new institutions in each subdistrict, expanding technical-vocational teacher capacity, creating a technical university, and extensive introduction of apprenticeship. The strategies also provide for vertical mobility across all levels of TVET. Thus, the strategies also reflect a strong concern for equity by ensuring (i) access for students with disabilities, (ii) proportional budget allocations to technical and vocational students, (iii) opportunities for the underprivileged in privately owned or privately operated institutions, (iv) access by adults and dropouts to evening and part-time courses, and (v) financial assistance to enable those who cannot continue studies after grade 8 to pursue technical-vocational education.

Several recommendations pertain to increasing quality through better inputs, including (i) establishing a 12:1 student-teacher ratio, (ii) compulsory introduction of ICT, (iii) requiring teachers to have training and practical work experience, (iv) provision of books in Bangla, and (v) filling teacher vacancies more quickly by establishing a separate public service commission for TVET teachers. The strategies also seek to encourage private providers to increase their participation in TVET provision and make utilization of resources for TVET more efficient (e.g., double shifts).

However, the TVET strategies seem lacking in other important aspects. First, there is little concern about instilling a demand orientation to ensure response to employer and labor market requirements. Instead, the weight of recommendations is in the supply side, stressing the expansion of TVET enrollments. Second, the recommendations lack the discipline imposed by financial limits (i.e., the cost of various elements is unclear, as is the financial feasibility of total costs). Finally, some recommendations are inconsistent with NSDP provisions (e.g., the specification of levels and standards based on time spent in training and not with a competency standard is inconsistent with the aim of implementing competency-based training).

National Skills Development Policy 2011. The National Skills Development Policy (NSDP) is a comprehensive document, spanning 59 pages in 22 sections. It advocates a flexible demand orientation for skills development and defines the roles of industry and training in the workplace. It calls for imposing standards and structure on skills development through a qualifications framework and competency-based training rooted in workplace skill requirements. The NSDP calls for better use of data in sector planning and better institutional management. It offers several key prescriptions to mobilize more resources for skills development and to use resources more effectively.

The NSDP is among the major results of the 5-year TVET Reform Project, funded by the European Union and implemented by the International Labor Organization (ILO). Upon receiving feedback from more than 200 stakeholders in various fields, the draft policy was endorsed by the National Skills Policy Consultative Committee and submitted to MOE in December 2009. The NSDC approved and endorsed the draft NSDP in September 2011, and was approved by the cabinet in January 2012.

The NSDP aims to

- provide a clear statement on the reform agenda for skills development;
- improve the quality and relevance of skills development;
- establish more flexible and responsive delivery mechanisms that better service the needs of labor markets, individuals, and the community at large;
- improve access to skills development for various groups of citizens; encourage industry organizations, employers, and workers to participate in skills development; and improve skills acquisition in communities; and
- enable more effective planning, coordination, and monitoring of skills development activities by various ministries, aid agencies, industries, and public and private providers.

To meet the needs of local and overseas employers and workers, the NSDP calls for demand-driven, flexible, and responsive training. *Flexibility* means that training providers should have resources and capacity to understand and respond to identified demands. *Demand-driven* training requires industry and government agencies to have the capacity to identify and communicate skills needs to providers. To achieve this, structural reforms will be implemented to ensure that government, industry, and social partners can (i) clearly assess the skills needs of industry; (ii) deliver recognized qualifications; and (iii) deliver quality skill outcomes for employability, increased productivity, and higher standards of living.

The NSDP seeks to establish a quality assurance system by establishing the National Technical and Vocational Qualifications Framework, which comprises two prevocational and six qualification levels, from basic worker to middle-level manager. A competency-based training and assessment system will be introduced, wherein achievement is measured against job-related competency standards, and progression is determined by meeting skills standards regardless of the time spent on training.¹⁷ Each industry sector will develop its own competency standards. The secondary vocational curricula will be revised. Further, the NSDP calls for better quality assurance of training providers—a “Skills Quality Assurance System”—by registering public and private providers, accrediting learning and assessment programs, and auditing training providers for compliance against quality standards. The system will consider multitiered registrations to allow for recognition of excellence. The Bangladesh Technical Education Board (BTEB) will continue to be responsible for quality assurance.

The NSDP adopts the objectives laid out in PSRP II as key performance indicators for its action plan such as increasing the proportion of TVET students from 3% to 20%, increasing TVET enrollment by 50%, and boosting female enrollment to 60%. The government and its social partners will develop and introduce a skills development investment plan, linking the action plan with public budget allocations. The investment plan will fully consider the infrastructure and allocate resources based on need and capability. It calls for review of the monthly allocation of monthly payment orders (MPOs) to private training providers to

¹⁷ NTVQF will gradually replace the existing qualifications framework and competency-based training will replace the existing training courses. More specifically, the implementation of NTVQF will depend on the following: (i) accreditation of qualifications and units of competencies; (ii) registration of training institutions (RTO) and accreditation of learning and assessment programs; and (iii) certified trainers to deliver competency based training.

ensure better delivery of SSC/HSC (voc) in areas of greatest need. The NSDP also provides for upgrading facilities and equipment across public and private providers to keep abreast of technological change, and development of well-performing institutions into centers of excellence that specialize in key industry sectors.

In summary, the NSDP has noteworthy recommendations, including moves to (i) standardize national qualifications and introduce competency-based training; (ii) decentralize institutional administration (the move toward devolution of teacher recruitment and financial, administrative, and academic autonomy), accountability measures, performance monitoring, and boards of management, including employer representatives; (iii) raise quality and relevance incentives to respond to industry demands, requirements for instructor training, and licensing; and (iv) establish a performance- or output-based financing scheme.

Although the NSDP presents a crucial stride toward making the skills development system more flexible, market-led, and effectively delivered, it gives a myriad of prescriptions without indicating priorities; everything cannot be done at once. It needs to establish priorities and address the key issue of financial feasibility. Moreover, some of the proposed measures contradict the prescriptions of the Education Policy 2010 and the SFYP, including competency-based qualifications and consolidation of all TVET under DTE. Finally, many of its prescriptions are vague and meant to be worked out later.

Training strategies and policies in the Sixth Five-Year Plan 2011–2015. The government's policies and goals focus on substantially increasing the proportion of post primary student enrollment in TVET. This expansion seeks equity through three key strategies: (i) extending the programs to address disadvantaged and poor people; (ii) implementing effective programs that impart marketable skills; and (iii) increasing employment opportunities and raising the income of the poor.

The SFYP emphasizes the impact of public sector TVET on poverty reduction. It specifies that TVET mainly serves young urban males who have completed grade 8, depriving the huge rural population (especially those who did not survive progression to grade 9) of opportunities for TVET. The SFYP also mentions TVET's failure to diversify its clientele, and notes its failure to make programs more flexible, adaptable, and responsive to market needs and geared to the informal economy. Thus, the TVET system makes little impact to help the poor improve their employment and income opportunities.

To address these concerns, the government established the National Skills Development Council (NSDC) as the apex body for policy formulation on skills development, with representation from the government, employers, workers, and civil society (see Chapter 2, Section 3). The new NSDC will consider the following strategic approaches:

- rethinking the role of public sector skill training in developing a strategy to expand and modernize TVET to meet market demands and extend greater benefits to the poor,
- ensuring equal opportunity by gender in vocational education,
- improving the link between training and job markets,

- improving the positive effect on poverty reduction by targeting new clientele,
- improving efficiency and quality of programs, and
- establishing youth training centers for skills development training in 11 districts.

The SFYP reiterates many of the proposals in the Education Policy 2010. It aims to increase the number of skilled workers, including those in information technology (IT), at different skill levels to meet growing demands from both domestic and international markets. Key strategies include

- Introducing prevocational and IT education in grades 6–8 in all institutions, including *madrasahs*.
- Establishing equivalencies between formal vocational education after grade 8 and four levels of national skills standards. Tertiary technical education will be open to vocational graduates from formal courses as well as those who achieve required skills standards.
- Encouraging apprenticeship programs and updating the 1962 Act for this purpose.
- Improving teacher training, and attaching teachers with industries as part of their training. A Technical Education Teacher Recruitment and Development Commission has been proposed.
- Establishing a vocational training institution in each *upazila*, and expanding the range of courses offered in secondary and technical institutions.
- Bringing all TVET institutions under the jurisdiction of the Directorate of Technical Education (DTE). Consideration may be given to transforming DTE into an autonomous IT, Technical, and Vocational Education Council.
- Encouraging private partnerships to establish and manage new institutions, and supporting nongovernment institutions with MPO funds and grants for equipment.
- Encouraging part-time courses and use of facilities in second shifts, and providing livelihood-oriented vocational education to reintegrate transgender individuals.

Several of the recommendations are worthwhile and should be pursued, including faster teacher recruitment and the encouragement of public–private partnerships. If implemented, policy recommendations regarding equivalency and apprenticeship will promote flexibility in the system by establishing equivalencies between formal courses and skills standards and by encouraging apprenticeship. However, other proposals (e.g., the proposed introduction of prevocational courses in general education) do not seem to consider international experience. In this aspect, international experience warrants caution because such investments within formal general education, usually, have not paid off. In addition, similar to the policies and plans discussed earlier, SFYP recommendations on TVET suffer from the same basic weakness of not indicating priorities and financial considerations and feasibility.

B. Externally Assisted Reform Programs

The government has initiated important reforms in the TVET sector with the assistance of several aid organizations, including the Asian Development Bank (ADB). Since the government made TVET a special focus sector in 2006, it has initiated the following major reform projects: (i) TVET Reform Project, (ii) Skills Development Project, and (iii) Skills

and Training Enhancement Project. These projects essentially aim to reform TVET in the areas of access, inclusiveness, relevance, and quality, and are considered very timely and appropriate. All interventions have already produced specific and practical outcomes in relation to their objectives (Table 15).

ADB, the European Union, SDC and the World Bank helped fund these reform projects. However, in the absence of sound means or process for coordinating and harmonizing their contributions to the development of TVET in Bangladesh, these organizations operate independently from each other. To implement long-term strategies for TVET with the help of development organizations, Bangladesh needs an effective mechanism for ensuring coordination and complementation among all externally funded projects.

Table 15: Summary of Externally Assisted Reform Projects for Technical and Vocational Education and Training

Title	Period	Budget	Funders	Focus Sector	Main Output	Accomplishments
TVET Reform Project	5 years (2008–2012)	€16 million (\$21 million)	European Union	<ul style="list-style-type: none"> Leather and leather goods Agrofood processing IT industry Transport industry Hospitality and tourism 	<ul style="list-style-type: none"> Skills development policy developed National qualification framework developed Access of underprivileged group in TVET increased Links of industry institute enhanced 	<ul style="list-style-type: none"> Formulation of National Skills Development Policy 2011 and approval of the Cabinet in 2012 National Technical and Vocational Qualification Framework developed and obtained approval of BTEB Standards and curriculum development committees formed Five industry skills councils (ISCs) formed and functioning Competency standard developed; Training module and materials designed and developed; training imparted—100 instructors received training from TTCs, TSCs, and private institutes; and 26 directors/principals received training CBT piloted in five institutes
Skills Development Project	6 years (2008–2013)	\$66.7 million	Government, ADB, SDC	<ul style="list-style-type: none"> Light engineering Garments Construction Informal sector (NGOs) 	<ul style="list-style-type: none"> Competency-based training standard and modular courses developed Training center strengthened 68,000 youth trained 	<ul style="list-style-type: none"> Project information and promotion materials developed and disseminated Project office established and fully functioning Four industry sector working committees formed and functioning (light engineering, construction, ready-made garments, informal sector) Key occupations in each of the above subsectors identified Competency-based training provided to sector working committee members and teachers of TTC and TSC

continued on next page

Table 15 *continued*

Title	Period	Budget	Funders	Focus Sector	Main Output	Accomplishments
						<ul style="list-style-type: none"> • 63 competency standards developed and submitted to BTEB for approval • 40 occupations identified and curriculum developed for six occupations
Skills and Training Enhancement Project	6 years (2010–2016)	\$88 million	World Bank	<ul style="list-style-type: none"> • Diploma and secondary-level program 	<ul style="list-style-type: none"> • Capacity development of DTE, BMET, and BTEB • Pilots TVET through operational support • Conduct market and tracer studies 	<ul style="list-style-type: none"> • Project launched formally by the Minister of Education • Project implementation unit started functioning • Project implementation manual prepared • 93 polytechnics selected for stipends • 37,541 diploma level students (up to June 12) received stipends • 15,947 students trained in short courses • 576 teachers recruited and deployed in 25 polytechnics • 400 teachers received training

BTEB = Bangladesh Technical Education Board; BMET = Bureau of Manpower, Employment and Training; CBT = competency-based training; DTE = Directorate of Technical Education; NGO = nongovernment organization; SDC = Swiss Agency for Development and Cooperation; TSC = technical schools and colleges; TTC = technical training center; TVET = technical and vocational education and training.

Source: Compiled by the Author.

CHAPTER 4

System Analysis

This chapter highlights the strengths and weaknesses of technical and vocational education and training (TVET) in Bangladesh. It also draws from previous studies and assessments of current TVET system, including reviews by ADB, the World Bank, and the International Labour Organization (ILO).

A. Strengths

The Bangladesh TVET system has several strengths, including

1. Some flexibility in the public training system, achieved through nonregular, short-term training based on cost recovery.
2. The competence of the Bangladesh Technical Education Board (BTEB) regarding skills testing. BTEB administers well-developed exit examinations that focus on the theoretical aspects of training.
3. Training providers, including technical training centers (TTCs), technical school and colleges (TSCs), and polytechnic/monotechnic institutes have established links with industry. For example, they provide industrial attachments during the seventh semester of the diploma course and in the programs of secondary school certificates (vocational) (SSCs [Voc]).
4. The projects supported by development partners have achieved several milestones, including the National Skills Development Policy (NSDP), the Sector Working Committees, Industry Skills Council (ISC),¹⁸ and the provision of access to TVET by underserved populations. By offering short, affordable, and market-responsive courses to students who were not able to finish grade 8, TVET is becoming more relevant to the informal sector (ADB 2011).
5. Private training is a salient feature of skills development in Bangladesh.
 - Private provision is extensive, with about 3,000 accredited private institutions offering formal TVET programs.

¹⁸ ISC was formed by the TVET Reform Project, and the Sector Working Committee by SDP.

- The government recognizes the important role of private providers, and allots salary subsidies in the form of MPOs to 1,600 private institutions.
 - Several excellent quality private providers exist, oriented mainly to disadvantaged youth and adults, such as the Underprivileged Children’s Educational Programs (UCEP) and the Mirpur Agricultural Workshop and Training School (MAWTS).
 - Excellent examples of industry initiatives in training such as public–private partnerships for skills provision include the Bangladesh Garments Manufacturers and Exporters Association through technical training centers, and Bangladesh Textile Mills Association (BTMA) with the National Institute of Textile Engineering and Research (NITER), formerly known as National Institute of Textile Training Research and Design (NITTRAD).
6. TTCs under the Bureau of Manpower, Employment and Training (BMET) display several strong characteristics:¹⁹
- TTCs are free to market their products and use the income generated from this activity. The second shift is based on cost recovery.²⁰ Other than 20 public holidays per year, no optional and vacation leaves are admissible for TTCs because the institutions cannot afford time away from training for short programs.
 - Post-training counseling has been established in all 38 TTCs, which now record their graduates’ employment. Within 3 months of graduation, 50%–60% of graduates have found jobs.
 - TTC managers of TTCs do not need to get headquarter approval to use funds, and TTCs are beginning to operate like businesses by selling products and services.

B. Weaknesses

A TVET system can be evaluated according to three criteria:

- Relevance or external efficiency. Does the system meet external economic and social requirements?
- Effectiveness. To what extent does the TVET system reach its objectives for quality of training produced and performance of its management and administration?
- Internal efficiency. How well does the TVET system mobilize resources and use them economically?

1. Economic Relevance

To what extent does the Bangladesh TVET system meet labor market requirements?

¹⁹ Interviews at BMET with Director (Training), September 2011.

²⁰ Institutes received financial support from the government for the first shift, and operated the second shift by generating income from tuition fees.

Symptoms of Weak Economic Relevance

Various reviews have identified symptoms that suggest weak economic relevance.

Mismatches between output and employer needs. Employers state that graduates of the vocational system do not meet their needs. They claim that the system continues to produce graduates for outdated and marginal trades, which have little market demand, and does not train students for newer trades with substantial needs (World Bank 2007). The Investment Climate Assessment of 2008 reported that one-fourth of employers in cities cited shortages of skills as problematic. Employers also complained about the low level of skills produced by the TVET sector²¹ (World Bank 2010). Mismatches between skills produced by the TVET system and the needs of employers include (i) types of trades or occupations offered, (ii) competencies acquired compared with industry or self-employment requirements, and (iii) practical experience opportunities for students. The identification of courses is not based on regular and systematic assessment of labor market needs. Even if the curricula meet industry needs, competencies may not match industry requirements (ADB 2008).

Low employment rates. Technical-vocational graduates tend to have lower employment rates than general education graduates (Dohmen 2009). A 2006 tracer study by the World Bank, involving 2,302 students who graduated from public and private TVET institutions in 2003, found a low proportion of employed graduates (Table 16). The proportion of employed individuals was highest among HSC (voc) graduates (30%), followed by diploma graduates (21%) and basic trades graduates (18%). However, these courses account for only a small proportion of total enrollment. The lowest proportions

Table 16: Distribution of Formal Technical and Vocational Education and Training Students after Graduation (%)

Items	Employed	Self-Employed	Higher Education	Unemployed	Total
Basic Trades	14.1	4.0	23.7	58.1	100
SSC (Voc)	3.1	0.9	47.4	48.7	100
HSC (Voc)	28.6	1.1	20.9	49.5	100
HSC (BM)	4.7	0.7	53.5	41.1	100
Diploma and Others	18.2	2.4	32.9	46.4	100
Total	7.3	1.3	44.7	46.8	100

Note: Percentages may not total 100% because of rounding. The number of respondents was 2,302. The students all graduated in 2003.

Source: World Bank 2007. World Bank staff calculations from World Bank's 2006 tracer study of formal TVET students who graduated in 2003.

²¹ An exception may be found at the diploma level. Employers felt that some diploma-level institutions were producing in-demand graduates (e.g., textile technology, but not vocational secondary). TVET needs to award more diplomas. The scale of diploma-level training is inadequate, given market demand (World Bank 2007: 27). In a September 2011 interview, the director general of DTE said that almost all diploma graduates find jobs. Vacant positions for diploma graduates may receive 100 applicants for 10 posts, compared to 10,000 applications for 10 positions by general degree applicants.

of employed were among SSC (voc) (4%) and HSC (business management) (5%). HSC graduates (business management) are more likely to pursue higher education. These courses appear to cater to a clientele who can afford to pursue higher education and have strong white-collar job aspirations. Across all the respondents, only 8.5% were employed, 44.7% were pursuing higher education, and 46.8% were unemployed. About 38% of the employed needed less than 6 months to find a job, and another 16% needed up to a year. The employment outcomes of graduates of the public and private institutions indicated little difference.

These data suggest that neither the secondary vocational nor postsecondary diploma systems produce employable graduates. Even in the marginally better streams, unemployment rates are at least 60% (World Bank 2007).

Low investment in enterprise-based training. Despite weaknesses in the formal TVET programs, enterprises do not invest significantly in upgrading workers' on-the-job skills. According to the *Global Competitiveness Report 2010–2011*, Bangladesh ranks 129th of 139 countries on “extent of staff training,” substantially below its most competitor neighbors: India (59), Pakistan (115), Sri Lanka (37), and Viet Nam (58). Firms underinvest in worker skills; only about 22% of all firms provide formal training to their employees. When firms do train, they tend to offer training to a much smaller fraction of the workforce than other countries in the region. Because in-service training is critical to the effective use of new technologies and productivity growth, Bangladesh's underinvestment in workplace skills places it at a competitive disadvantage relative to other countries. Bangladeshi employers appear more preoccupied with other constraints than with the skills of their workers, including inadequate infrastructure, inefficient government bureaucracy, and corruption. The three main reasons given by employers for not training workers are that firms (i) use “mature” technology that does not require worker training, (ii) cannot afford training, and (iii) can easily hire skilled workers elsewhere (World Bank 2007).

Inattention to skills development in the informal sector. Little attention is paid by the government to enhancing the skills of the 80% of workers who are in the unorganized/informal sector (World Bank 2010).²² TVET can be made more relevant to the informal sector, and productivity can be improved by upgrading skills in certain occupations (e.g., motorbike repair, farm implement repair, food processing, and woodcarving). MAWTS and the Bangladesh Rural Advancement Committee (BRAC) have training programs that cater to the highly unemployed informal rural subsector, usually linked with microcredit (ADB 2008). Similarly, too little attention is given to local labor market needs. Labor market outcomes cannot be divorced from the state of the labor market itself. Many TVET students, especially at the certificate level, must seek their first jobs in rural areas or small towns, but the important roles of the informal and rural sectors tend to be ignored. Little thought has been given to enhancing the skills of the majority of the people working in the informal sector (World Bank 2007).

²² About 80% of workers in Bangladesh are in the informal sector.

Causes of Weak Economic Relevance

Lack of employer involvement. The main cause of TVET market weak relevance is the insufficient linkage between supply and demand (i.e., between training institutions and employers) (World Bank 2000). A major component (i.e., involvement of private sector representatives in institutional arrangements) is conspicuously missing (ADB 2008) and results in slow and inadequate responses to market developments.

At the central level, employers cannot participate in policy or curricula development, or provide trainers (World Bank 2007). DTE does not involve industry representatives in decisions on training. Likewise, the private sector is not involved in teacher development. Except for occasionally seeking comments and inputs, BTEB does not involve industry in setting standards, development of instructional materials, or testing and certification, increasing the gap between demand and supply of skills. BTEB has 14 board members, but none from industry or employers.²³ Courses are not designed in consultation with employers and do not reflect the standards and needs of the labor market (World Bank 2010).

In institutions, insufficient links with employers result in slow and inadequate response to labor market developments. Training institutions do not conduct occupational analysis of the skills in demand in their localities. At the diploma level, industry and the private sector have almost no role in the administrative or academic management of polytechnic institutions. No polytechnic has a training and placement officer, and they lack an industry liaison cell to coordinate student training, job placement, organize job interviews, track alumni, facilitate teacher training in industry, and train industry personnel (World Bank 2010).

Lack of effective mechanisms for labor market analysis. TVET providers and government agencies do not systematically collect adequate labor market information. Feedback mechanisms are inadequate to change and adapt course offerings and to improve the TVET system. Institutions usually offer courses in response to social demands, not labor market surveys or comprehensive analysis. Regular labor market analysis and tracer studies are not available to assess the needs of domestic or global labor markets and to align the curricula accordingly. As a result, curricula do not reflect adequately up-to-date core technical skills, specific sector skills, and soft skills (World Bank 2010).

Inflexible supply responses owing to structural and administrative rigidities. The lack of supply responsiveness results largely from lengthy and inflexible training programs, excessively centralized administration, and a rigid system. The TVET system is organized in a traditional school-based way, with courses of long duration. Each vocational program at the secondary level (SSC and HSC) takes 2 years, and studies for a diploma last 4 years (ILO, n.d.).

The processes for curriculum development, the introduction of new courses, and the closing of obsolete courses are rigid and time-consuming. The government is unable to modify or update curricula quickly and expediently (i.e., introduce new courses, expand

²³ BTEB September Interviews, 2011.

those in demand, and reduce or close those for which demand has weakened) to keep up with technological changes in enterprises (World Bank 2000). Trade programs in polytechnics, HSC, and SSC are outdated and are generally reviewed piecemeal—once every 5–7 years (World Bank 2010). For example, training in agriculture (i.e., horticulture, poultry, dairy, agro-based food, and aquaculture) has been in high demand. Leather-making courses have been suggested and planned for more than 10 years but have failed to materialize (World Bank 2007).

The heads of training institutions must follow uniform programs and cannot modify or improve curricula to meet local circumstances and, due to administrative rules such as centralized hiring, it is difficult for a public TVET institution to respond to emerging market needs. In short, there is no delegation of authority (ADB 1995; World Bank 2000).

Inaccurate targeting. Ironically, people who want TVET qualifications often cannot enter a program because they have not completed grade 8. Those who enter, particularly SSC (voc), have little intention to enter manual occupations. In other words, those who can or do attend TVET do not wish to, and those who wish to are not allowed because they cannot comply with the grade 8 entry requirement (ADB 1995). Thus, the clientele of formal vocational training is usually unsuitable for the program (World Bank 2000). In a September 2011 interview, the director general of DTE confirmed this assessment, saying that a high proportion of vocational graduates do not want manual jobs in fields such as air-conditioning/refrigeration.

2. Social Relevance—Access and Equity

An ADB study revealed that the formal TVET system has had minimal impact on poverty reduction (ADB 2008). The study reviewed three aspects of access and equity: disadvantaged groups, geographical area, and gender.

The disadvantaged lack access to skills acquisition. The system does not serve the underprivileged—the rural poor, child laborers, women, informal workers, people with low-level instruction—due to its rigidity and high entry barriers (ILO, n.d.). Courses have remained inaccessible to the urban poor due to (i) the minimum entry requirement (grade 8) is too high; and (ii) lengthy courses (1–2 years), which means that the poor cannot stay away from remunerative work (ADB 1995). The main clientele for formal TVET comprises young adolescent males who have completed grade 8, can afford to stay in school, and aspire to white-collar job. The lowest minimum entry requirement, grade 8, automatically excludes the large majority of people who do not achieve it (ADB 2008). Underprivileged youth are usually screened out of the educational system before they can qualify for entry into vocational training because TVET stipends are provided for merit rather than need (World Bank 2000).

Geographical inequities. Most training institutions are in urban areas, which have only about 20% of the total population. Strong regional imbalances also exist, and the share of students enrolled in private institutions is far higher in poorer regions than more affluent regions (Dohmen 2009). This is inequitable, because students must pay a high proportion

of total costs in private institutions through tuition and other fees, whereas public institutions are virtually free.²⁴

Gender inequalities. Although most trade programs correspond to male-dominated trades, about one quarter of total enrollment is female (ADB 2008). Few females have an opportunity to learn the skills necessary for formal sector employment, largely due to the lack of hostels and secure transport, as well as traditionally low demand for female workers. Women in the labor market have few places where they can receive training to raise their income through productive activities (World Bank 2000).

Only 7% of all females in formal TVET programs are enrolled in public institutions; 93% study in private institutions and pay fees, compared with a relatively greater number of male students who enroll in public institutions and pay lower fees. Thus, male TVET students receive a public subsidy far larger than that received by female students (Dohmen 2009). Consistently, most students (57%) at private institutions are female, and only one in six students (17%) in public institutions is female. Moreover, the cost per student in almost all women's polytechnics is low. Limited funding for women's polytechnics suggest that the share of funds spent for female students is lower than the already limited share of female students (Dohmen 2009).

3. Training Effectiveness—Quality of Delivery

Teaching programs tend to give more weight to theory than practice. Prescribed standards require a mix of theoretical and practical work in training, but in practice little emphasis is placed on practical work. Curricula are not logically linked by difficulty or content. Teaching programs are not based on competency (World Bank 2010).

Pass rates on final examinations are one indicator of effective instruction, and pass rates have improved substantially at the SSC (voc) and HSC (voc) levels. Despite accreditation processes, students in private training institutions perform significantly lower in examinations compared with public institutions, particularly at the diploma level (Chapter 2).

Low quality training in private institutions results from weak quality assurance, inadequate number of teachers, insufficient financing for needed instructional materials, and lack of incentives.

Weak quality assurance. Serious concerns remain about the accreditation process. Although BTEB is a well-developed organization, quality assurance is sparse. Procedures are time consuming, complicated, rigid, and often not followed properly, partly due to political interference and partly due to inadequate resources for inspections. BTEB has essentially become an office that offers affiliation or accreditation to private training providers for a fee, but pays little or no attention to quality assurance (World Bank 2007; 2010). Bangladesh has about three thousand affiliated private institutions. Despite a

²⁴ Expenditures per student also suggest important differences in endowment among similar-type institutions (e.g., TSCs and polytechnics) (Dohmen 2009).

requirement for annual monitoring, BTEB visited only 146 in 2010, and sent admonishment letters to only 48. With only one inspector and one deputy, BTEB could do no more (BTEB September 2011 interview).

Lack of qualified instructors. The lack of trained teachers is a major constraint on effective TVET delivery. Two main reasons explain the lack of qualified instructors in both public and private TVET institutions: lack of capacity to train instructors, and bureaucratic red tape that makes it difficult to fill vacancies.

Most TVET teachers have little pedagogical or competency-based training, few practical skills, and little or no industry experience. BTEB estimates that 24,000 private sector teachers need training (ADB 2008). However, opportunities for teacher training are limited. Teacher supply has not kept pace with the sudden expansion in the number of training institutions, particularly private providers. Private providers tend to employ untrained instructors (World Bank 2007). The demand for experienced or trained teachers is high, but private providers are reluctant to pay the high salaries they demand.

Poorly qualified teachers and instructors can be attributed to two factors: inadequate output by teacher-training institutions, and lack of in-service training. Despite its capacity to train about 80 teachers per year, the Technical Teachers Training Center (TTTC) has produced far fewer graduates. The Vocational Teachers Training Institute (VTTI) can train 240 teachers (ADB 2008). Capacity is well below requirements. TTTC Dhaka has filled only 13 of 33 sanctioned positions, and VTTI has only 3 teachers for 33 sanctioned positions. The TTTC has given no short-term courses in the last 4 years. VTTI has not conducted a single short course during the last 5 years, and currently offers no long-term programs (World Bank 2010). Only 50% of polytechnic teachers have been trained, but they do not come from TTTC. As a result, TTTC is underused and cannot spend its budget; about 40% was left unspent over the past 3 years (TTTC September 2011 interview). Despite already inadequate physical capacity and equipment, the capacity for instructional resource development is low. Classrooms often lack modern teaching aids, and training programs do not use ICT. At VTTI, most equipment is more than 20 years old (World Bank 2010).

TVET also suffers from a lack of regular in-service upgrading of instructors. Teachers' qualifications do not concur with the system's needs, and, on the other hand, the system provides no further training beyond initial qualification (ILO, n.d.). No continuing staff development is available to address qualification deficiencies (ADB 2008). The system offers very few opportunities for training and upgrading of instructors' skills. No policy and regulations exist requiring in-service training. In addition, there is no formal policy or guidelines for the continuous professional development of TVET teachers (World Bank 2010); this explains why VTTI and TTTC are largely empty. Vacancies make it impossible for TVET institutions to release teachers for in-service training (DTE interview, TTTC interview). In particular, teachers on development posts are eligible only for short-term training and are not paid during study leave (compared with those on revenue posts)²⁵ (World Bank 2010).

²⁵ Revenue posts are permanent teachers with their salaries provided from revenue budget, while development posts are teachers recruited on development projects with salaries provided from development budget.

Bureaucratic red tape also results in prolonged teacher vacancies. The director general of DTE indicated²⁶ that a 50% vacancy rate exists at all levels, contributing to low TVET outputs. Some estimates suggest that nearly 60% of sanctioned teacher/trainer posts are vacant in public TVET institutions. The highly centralized hiring system makes it difficult for institutions to fill vacant positions. The Public Service Commission is bureaucratic, and it takes at least 2 years to fill vacancies. In addition, salaries are not competitive enough to attract good TVET teachers. The average monthly salary in public training institutions is only Tk10,000 (\$122) or less (World Bank 2010).

Insufficient material inputs. The TVET sector has historically lacked sufficient resources, and institutions lack adequate resources to provide quality training (World Bank 2010). Several analyses have pointed to low expenditure on nonpersonnel items (only 19% of per-student costs) (ADB 1995). This structure leaves a very limited portion of the budget for funding other costs of instruction. International data suggest that the ratio of nonpersonnel oriented recurrent expenditures that include instructional materials and learning resources is crucial to student performance.

Inadequate spending results in poor infrastructure in SSC (voc) and HSC (voc). Institutions lack modern equipment and instruments with which to conduct practical classes, especially electrical, electronics, and refrigeration (ADB 2008; World Bank 2010). Because workshop enrollments are generally too large in relation to available equipment, students end up observing, not practicing. For example, computer operation is mandatory in all trades, but a typical institution has only two computers for 120 students in each shift (World Bank 2010). In addition, available facilities and equipment are often outmoded and in a state of disrepair (ADB 1995). The budget does not provide for maintenance, and little funding is available for consumable supplies (World Bank 2000). There is a widespread dearth of instructional materials. These materials are not developed systematically and produced regularly. There is no development center to design, develop, validate, and disseminate teaching-learning resources (World Bank 2010). The TVET system has a serious problem spending allocated resources which could have been used for instructional materials (Dohmen 2009).

Lack of incentives for good performance. The managers and instructors of training institutions lack incentives for good quality teaching. Overcentralized control means that school directors take few initiatives, and instructors lack accountability (World Bank 2000). Teacher motivation is also a concern, owing to the limited scope for promotion and to low salaries.

4. Organizational and Administrative Effectiveness

Central/National Organizations and Administrations

TVET policies and plans. Some policies and plans are inconsistent. Except for the NSDP, policies and plans focused mainly on expanding the system for greater access. There is lesser emphasis on improving provision arrangements (World Bank 2010). Harmonizing

²⁶ Interview with director general of DTE in September 2011, Dhaka.

these policies and plans to address both access and equity and relevance and quality will be favorable for implementation.

All policies and plans lack attention to the cost implications of the measures proposed. No comprehensive development and investment plan has been formulated yet for skills development. On the other hand, the unwieldy structure of the NSDC and lack of resources for its secretariat may hobble implementation.

Plans and policies are hobbled by the lack of information about the supply and quality of TVET. Adequate, system-wide data for policy making is not available. No single set of statistics covers the whole system, public and private, formal and nonformal. In particular, little information is available on the extent of short-term training, most of which is in the private sector. Students also lack information to help them decide which occupations they should choose. The most recent statistical data are several years out of date (e.g., Dohmen's 2009 report on TVET financing had to rely on data from 2005). Similarly, aggregate and time-series data for planning and managing general education are not available for TVET, and there is virtually no way to get consolidated and reliable information (ADB 2008, Dohmen 2009, World Bank 2007).

Coordination is also needed among aid agencies, and approaches need harmonization. Several agencies are working on industrial skills councils, development of competency-based curricula, and teacher training; however, terminology, terms of reference, composition of groups, and formats are not standardized across projects.

Organizational structure. Several analyses have shown that the institutional framework hinders effective coordination by the main actors. The TVET system is fragmented—multipolar and noncoherent. Formed in 1979 and reconstituted in 1991, the National Council for Skills Development and Training (NCSDT), which is responsible for coordinating skills development, had not met for more than 20 years. Until recently, weak linkages and lack of coordination existed among nodal agencies (i.e., DTE, DTEB, BMET). The lines of responsibility across the three main agencies are unclear, and activities are isolated from each other, resulting in overlapping functions (e.g., curricula revision, teacher recruitment, and quality monitoring of institutions) (ADB 1995; World Bank 2007; 2010).

Specific Organizations

NSDC has not functioned as intended. Charged with providing macrolevel policy direction, it was largely inactive and did not meet until August 2011. With 36 members, NSDC is too large, with many high-level officials, including the Prime Minister as chair. Many members have no interest or expertise in skills development. As its secretariat, BMET lacks the necessary resources and autonomy to act effectively (ADB 2008). Only a quarter of NSDC members (and five of 18 members of the Executive Committee) represent employers and industry.

Although BTEB is a self-supporting organization that generates income from institutional accreditation and student examination fees, it has limited capacity. Shortages of professionals in curriculum development, examinations and certification, and instructional

resources create a mismatch between workload and capacity. Curriculum revision is conducted via ad hoc workshops. In addition, BTEB lacks qualified and trained evaluation specialists. Testing is traditional: the objective is to pass or fail a student based on examinations twice a year. There is only minimal use of ICT, with no computerized question/item banks or online admissions tests (World Bank 2010).

TTTC does not conduct research on teacher training, curriculum development, examination reform, student assessment, or the use of teaching–learning resources. Little or no networking occurs between TTTC and industry, higher technological institutions, or technical training institutions within and outside the country for professional growth and development (World Bank 2010).

Administration of Training Institutions

Lack of authority. The main problem lies in institutional governance. The system is highly centralized, and institutions merely implement decisions made at the center (national level). Principals of public and publicly subsidized institutions have little autonomy to replace training programs, ensure that students receive quality training, and involve the private sector. For example, the overly centralized DTE system does not allow its principals to manage, and they also lack authority to hire teachers or discontinue low-demand programs. Concurrently, institutions are not held accountable for their performance and have few incentives to improve performance (ADB 2008, World Bank 2007; 2010).

Training centers are also not allowed to make decisions about planning and programming. They have little autonomy, suffer from system rigidity, and lack the flexibility to revise courses in response to changing local needs.

Constrained financial management. Training institutions cannot transfer funds from one line item to another. This inflexibility results in returning funds to the ministry even when there is an urgent need to buy teaching materials. In addition, some institutions are unable to spend the whole budget due to protracted procurement procedures. Limited funds and insufficient spending power are at the core of the problems of TVET in Bangladesh. In general, the following characterize the financial situation of the training institutions: (i) operational funds are insufficient; (ii) budget flexibility is low, and transfers between budget line items are not permitted; (iii) institutions receive a limited share of their budgets to disburse at their discretion; (iv) budget funds are often returned unspent; and (v) about 15% of the funds originally allocated remain unused (Dohmen 2009).

Straight-jacketed institutions. One would expect that higher-level institutions would have some freedom to make decisions. However, polytechnics and TTCs have no external governing board, only an internal academic council.

Specifically, Technical Teachers Training College (TTTC) has no autonomy regarding the devolution of power for academic, administrative, managerial, and financial functions (World Bank 2010). TTTC lacks the authority to hire temporary staff, and it is not allowed

to offer short-term courses or charge full costs. It is also not permitted to provide in-service training for private training providers (TTTC, October 2011 interview).

Polytechnic management does not select entering students, cannot hire staff, has no authority to start new courses, and cannot shift budgets between line items without the approval of DTE. For example, the management of Dhaka Polytechnic stated: “We are just implementing decisions taken elsewhere.”²⁷ This characterization was reinforced by a separate institutional review. Polytechnics do not control the main areas of institutional autonomy (e.g., staff appointments, student admissions, curricular changes, resource allocation, budget allocation, assessment and certification, and generation and use of revenue). Industry and the private sector play almost no role in the management of the polytechnics, in both administrative and academic councils. None of the polytechnic institutions has a training and placement officer or an industry liaison cell to coordinate student training and job placement, organize job interviews, track alumni, facilitate teacher training in industry, and train industry personnel. No management information system exists, either computerized or as data regularly collected in other formats (World Bank 2010).

5. Finance and Internal Efficiency

Costs and Financing

Little is known about total costs or public expenditure per trainee for different levels and types of institutions. However, it is clear that the government spends a relatively low proportion of its education budget and total spending on TVET, averaging only about 1.5%–2.5% (Chapter 2).

Training is virtually free in public institutions. About two in three students receive stipends, and many receive free hostel accommodations. Institutions are not encouraged to engage in cost-recovery activities. Government rules do not permit training institutions to retain and reinvest resources generated at the institute level. Institutions have little incentive to generate income from services or production, because profits are returned to the Ministry of Finance (World Bank 2007; 2010). The only exception is the delivery of short-term courses (<360 hours), the income from which can remain at the institution.

There is little accountability for funds received. Supervisory control over TVET expenditures is relatively weak, with improper record keeping and serious potential for abuse (World Bank 2007; 2010). Financing of public institutions continues from year to year, regardless of performance.²⁸ In practice, once private schools attain eligibility to receive MPOs, subsidies flow regardless of performance. During 1999–2003, MPO subventions were suspended in fewer than 2% of schools (World Bank 2007).

²⁷ Interview with Dhaka Polytechnic.

²⁸ Interview with director general, DTE, September 2011.

Internal Efficiency

Despite underfunding, TVET wastes many resources. Overcentralized administration makes it difficult for institute directors to economize on resources (World Bank 2000).

Lengthy courses. Lengthy courses are an example of wasted resources. Training focuses on certification and lasts longer than is strictly necessary for occupational purposes. Course offerings are too long for the objectives and skills being taught. One-year programs could be taught in 6 months (ADB 1995).

Low student–teacher ratios. Student–teacher ratios average only about 10:1–12:1. In government TTCs, the ratio is 9:1, and in nongovernment TSCs the ratio is 10:1 (polytechnics =12:1; SSC [voc] -10:1).

Underutilization of physical facilities. Capacity utilization was low, especially in nongovernment diploma institutions and SSCs (46% and 69%, respectively, in 2006–2007) (World Bank 2010). A survey of some 300 public and private institutions revealed similar results, including 53% utilization for secondary vocational institutions and 41% for diploma-level training institutions (ADB 1995; World Bank 2007). In January 2008, HSC enrollments were only 46% of seating capacity compared with 95% of capacity in public diploma-level institutions.

High actual costs. The average enrollment size for public HSC (voc) institutions is small: about 113. However, the cost per student at TSC institutions decreases in relation to the size of the institution, implying economies of scale (Dohmen 2009).

Dropout rates are also high—about 30% for the first and second semester diploma (public and private) and graduation rates are sometimes below 70% (ADB 1995; World Bank 2010). Dropouts and low graduate employment rates means the TVET system in Bangladesh is costly, even if per-student expenditures seem reasonable. In financial year 2008–2009, the annual expenditure per student was Tk10,700 based on the revised budget. Chittagong Women Polytechnic had the lowest cost per student (Tk6,425), and the Graphic Arts Institute had the highest (Tk31,500) (Dohmen 2009). The low fee structure implies that there are few private costs to students who do not complete the program. This contributes to low internal efficiency (World Bank 2010). Moreover, the majority of successful SSC and HSC graduates pursue higher education, an expensive route to acquiring further education (ADB 2008).

CHAPTER 5

Priority Reforms and Investments

A. Additional Reforms

Reform initiatives and the three major investment projects discussed in Chapter 3 confront many of the issues outlined in Chapter 4 (e.g., development of standards, competency-based curricula, and in-service teacher training). The following list suggests additional areas for reform and investment.

Subsector development program. The five technical and vocational education and training (TVET) policies and plans reviewed in Chapter 3 were developed without the discipline imposed by financial constraints. None have been evaluated for their financial implications, and the policies and plans have not been elaborated into a subsector development program. The National Skills Development Policy (NSDP) has called for an action plan, which could become the basis of a development program. Priority should be given to working out the costs for implementation of the various policies and plans. The next step should determine priorities and phases of implementation, followed by preparation of a national skills development program under the auspices of the National Skills Development Council (NSDC).

Organizational reform. The NSDP has called attention to the limitations imposed by the present organization and management of TVET: “Many of the key challenges facing skills development in Bangladesh derive from the structure and management of the skills development system. Chief among these are limited interagency coordination, poor linkages with industry and the labor market, insufficient capacity in key agencies, piecemeal regulation and quality assurance, and limited planning of delivery and infrastructure development” (Section 20.1). The NSDP advocates strengthening NSDC as an apex body to oversee and monitor all activities of public and private training providers related to TVET and skills training, creating an executive committee, and establishing a well-resourced secretariat. Unfortunately, the NSDP does not address the unwieldy number and level of members, and its membership imbalance that favors government. The governance of TVET requires greater industry and employer participation. The NSDP does allow for an examination “to determine whether the Council should be restructured as an autonomous body to maximize its effectiveness” (20.5). This study should have high priority.

Reforming teacher recruitment practices. Teacher shortages further strain the quality of instruction and prohibit institutions from releasing staff for in-service improvement. All signs point to an urgent need to reform the way teachers are hired, both in criteria and

in procedures. The NSDP includes a two-tier hiring system wherein technically qualified personnel and short-term replacements can be hired to fill vacancies. Proposals are well taken in the NSDP and the Education Policy 2010 to create a technical teacher service commission to replace the Public Service Commission for TVET.

Devolution and a move to performance-based funding. Output could increase significantly, both in quantity and quality, by adopting performance conditions to payments. At present, the limited government financing flows mainly to public and monthly payment order-supported private institutions, regardless of performance in enrollment, examination success rates, or employment rates of their graduates. A shift to performance-based budgeting would have to be accompanied by greater devolution of authority to training institutions, so that their managements could hire staff as needed, make decisions on training or course contents, and direct resources to the highest priority expenditures.

Support flexible training provision. One must question the economic value of the secondary school certificate (vocational) (SSC Voc) program. According to the 2006 tracer study (World Bank 2007), few graduates found employment (4%), and almost half pursued further education, which is an expensive path for vertical mobility, given the higher per-student costs of vocational education. Higher secondary certificate (vocational) (HSC Voc) programs were somewhat better at producing graduates for the labor market, but these institutions are constrained in their ability to respond to market needs. A better alternative would be to support TVET expansion outside the formal school system. After students finish their general education and formal schooling, they could enroll for intensive skills development that is shorter and better related to immediate market needs. The technical training center (TTC) model of the Bureau of Manpower, Education and Training (BMET) seems better suited to this approach. As noted at the beginning of Chapter 4, TTCs tend to be flexible in offering intensive training, providing short courses, and mobilizing resources. An evaluation of TTC provision would be needed to verify their purported labor market benefits.

B. Priority for the Private Sector

Given the presently extensive support provided for the development of public sector institutions, including the Directorate of Technical Education (DTE), the Bangladesh Technical Education Board (BTEB), and BMET, as well as for public providers, a strong case can be made to increase support to the *private sector*. This new focus to support the private sector will increase the participation of enterprises in skills development. Investments could support two groups: enterprises and private providers.

Support for enterprise-based training. Enterprise-based training is relatively underdeveloped. In 2010, Bangladesh ranked 129th among 139 countries worldwide for “extent of staff training” among enterprises, compared with Sri Lanka (37th), Viet Nam (58th), and India (59th) (World Economic Forum 2010). Until recently, there were only 54 registered apprentices in the whole country, compared with 80 employees in BMET’s apprenticeship wing. This area of investment would aim to increase the participation of enterprises in skills development and delivery.

The government has established a Skills Development Fund for Expatriate Workers and provided a \$20 million budget. This fund is administered by a national committee and operates under the Ministry of Expatriate Welfare and Overseas Employment (MEWOE), whose main purpose is to promote overseas employment. The NSDP also recommends creation of a (presumably separate) National Fund for Skills Development. Recommendation 17.3e states:

“to support employment growth and skills development in the workplace and along industry value chains, government will ...(d) explore a range of mechanisms, including financial incentives, to encourage and enable enterprises to train their workforce as part of business development... (e) establish a national Human Resources Development Fund to provide additional funding for industry training initiatives.”

Section 19.41 further declares that “to diversify funding arrangements, the government will work with its partners to establish and make operational the National Human Resources Development Fund with the target for government contributions of 1% of the value of remittances received by expatriate workers.”²⁹ In addition, the NSDP states that the government, in partnership with employers’ and workers’ representatives, will also “investigate different mechanisms to encourage increased employer investment in training, including the use of levies and tax incentives” (19.5).

The TVET Reform Project, supported by European Union, supports revision of the apprenticeship laws. A new investment project in the development phase should support studies on alternative financial means to stimulate enterprise-based training, and during implementation could help contribute to the National Fund for Skills Development. This fund could provide financing to help support apprenticeships³⁰ as well as direct worker training.

Project development would need to help design eligible programs for target beneficiaries, as well as structures, criteria, and processes for the allocation of fund proceeds.³¹

Raising skills in the informal sector. Just as enterprises in the formal sector employ skills to produce goods and services, so do enterprises in the informal sector. However, training efforts tend to neglect the informal economy, even though it accounts for about 80% of the labor force and about 65% of all employment outside agriculture.

About one-third of the labor force participates in nonfarm occupations in the informal sector. This constitutes a huge target group for skills upgrading. Bangladesh has a rich and widespread tradition of *shikkanabish*, or master craftspersons training young apprentices. Arguably, this system is the largest source of skills training in the country, far exceeding that provided in formal TVET programs; it is also self-financing and self-regulating. However, based on experiences elsewhere, the quality of training through traditional apprenticeship is likely to be low, haphazard, and based on outdated technologies.

²⁹ If expatriate workers send remittances totaling more than \$9 billion per annum, the annual contributions to such a fund would amount to \$90 million. This hardly seems realistic.

³⁰ Such as sharing the cost of apprenticeships through stipends. ILO-JOBS Survey and Assessment of Formal and Informal Apprenticeships in Bangladesh, March 2009.

³¹ Some initial work has been done on financing mechanisms under TVET Reform Project.

The NSDP states that the NSDC will develop a strategy to address the informal economy. It proposes to impose a “code of conduct” on traditional apprenticeship, including minimum wages, working conditions, and duration of apprenticeships. A better approach would be to offer positive incentives (Sections 12.8 and 17.11).

This strategy would aim to raise the productivity and incomes of informal sector workers and enterprises in key nonfarm economic sectors. An investment could finance upgrading of skills of master craftspersons through various means. There are substantial international experiences and good practices on upgrading skills in the informal sector from which to learn.³² For example, to avoid high opportunity costs, such training must be close to the workplace, short, and flexible. Skills upgrading is best provided by master craftspersons themselves, rather than formal training institutions. These lessons should be incorporated into the project design. This proposal is consistent with one of the prescriptions in the NSDP: “To encourage apprenticeships in the informal economy, the government and its partners will trial and evaluate the use of incentives including equipment, skills training, affordable microfinance and other support mechanisms ...” (Section 12.9).

An essential first step would be to study the extent and practices of traditional apprenticeships in various economic sectors such as manufacturing. No such recent studies appear to have been made.³³ A second step would be to assist NSDC in developing a program to implement the strategy to address the informal economy. Then, an investment could help finance implementation of the program.

Support public–private partnerships in training. Education Policy 2010 and the Sixth Five-Year Plan support public–private partnership in the establishment and management of new technical and vocational institutions. The NSDP also stipulates that public training premises could be leased and managed by private training providers. Investments could help put these provisions into effect in two ways. First, investments could finance public–private partnership arrangements between public institutions and private enterprises (i.e., to provide seed money for such arrangements in subsectors that wish to establish and operate their own training institutions) such as Bangladesh Garments Manufacturers and Exporters Association, Bangladesh Knitwear Manufacturers and Exporters Association, Bangladesh Textile Mills Association, and other priority industries. Second, investments could finance the startup costs for private management of public institutions. A separate fund (or window of the Fund proposed for enterprise-based training) could be created for this purpose.

Support BTEB with industry representation for curricula development. BTEB has the authority or mandate to develop curricula for its affiliated institutions; currently, seven curriculum specialists report to the Director of Curriculum. BTEB struggles to regularly update or revise curricula to cope with changing market demands and technological advancement. Industry involvement in BTEB-managed curriculum development was limited and insufficient to make the training curricula relevant (Comyn 2009). Although,

³² For a summary of lessons learned, see Richard Johanson and Arvil Van Adams, *Skills Development in Sub-Saharan Africa*, World Bank 2004.

³³ For example, Section 3.2 of the ILO-JOBS Survey and Assessment of Formal and Informal Apprenticeships in Bangladesh (March 2009) refers to informal sector apprenticeships, but does not analyze the practice in Bangladesh.

projects in skills development implemented in Bangladesh have assisted in developing training curricula, they would not be sufficient to address the needs of TVET in a sustainable manner. BTEB's responsibility will definitely increase in line with the reforms in skills development. Investments could help develop a system or process for the regular review and revision of curricula, with the involvement of industry, industry bodies, and the top-performing private institutes.

Support BMET or DTE by involving private institutes or an industry body for research. BMET and DTE lack a research wing to conduct labor market studies that assess and identify skills needed by the industry, and subsequently recommend to BTEB the incorporation of new trades for implementation. Private institutes and industry bodies can collaborate with BMET and DTE in conducting regular labor market studies and other researches on skills development.

APPENDIX 1

Nongovernment Organizations Providing Technical and Vocational Education and Training Services

A. Underprivileged Children's Educational Programs

The Underprivileged Children's Educational Programs (UCEP) is among the leading and largest national nongovernment organizations in Bangladesh. UCEP has participated directly in the delivery of technical and vocational education and training (TVET) for almost 4 decades. It strives to develop marketable skills among poor urban working children and adolescents through integrated general and vocational education up to grade 8 and technical education in different trades with job placement support, in collaboration with industries and workshops throughout Bangladesh. Thus, UCEP contributes to improving the economic and social conditions of the poor and supports industrial development by providing skilled and semiskilled manpower. At present, UCEP has an enrollment of 42,000 students in its 52 integrated general and vocational schools and 10 technical schools in Dhaka, Chittagong, Khulna, Rajshahi, Barisal, Sylhet, Gazipur, and Rangpur. UCEP has grown modestly since its establishment in 1972. The number of technical schools operated by UCEP increased from three in 2002 to 10 in 2010. Enrollment also increased, from 1,700 to 4,800, including Secondary School Certificate (SSC) (vocational) during the same period.

UCEP primarily emphasizes the provision of general education with vocational content for working and distressed urban children (girls aged 11+ years and boys aged 12+ years) who have little or no opportunity for normal schooling, work in hazardous jobs, work an average of 48 hours per week, and earn less than \$10 per month. In addition, UCEP has successfully targeted dropouts from formal education. The main characteristics of UCEP's operations include flexible schooling hours; learning while working; emphasis on practical training (80%); on-the-job training; curriculum review in consultation with employers; trades that respond market needs; and linkages with other technical schools, employers, and the community.

UCEP's technical education program imparts skills training to students in 17 marketable trades that meet the demands of various industry subsectors (e.g., production and processing industries, transport, electrical and electronics, textiles, garments, furniture, printing and packaging, health services, etc.). Course duration of the trade programs varies from 6 months to 12 months, depending on the nature of the trade. In addition, over the years the training facilities in technical schools have been developed to ensure quality of skills training and to meet the requirements of employers. UCEP has developed training

facilities for computerized numerical control workshops, solar energy panels, advanced garment-making machines, information technology centers, engine analyzers, etc.

Apart from trade courses, UCEP's technical education program also provides secondary school certificate (vocational) (SSC Voc) courses in trades including automotive, general mechanics, and general electrical works in the technical schools of Dhaka, Chittagong, Khulna, and Rajshahi.

Table A1.1: Trades in Technical Schools Operated by the Underprivileged Children's Educational Programs, January 2011

Trade	Duration (months)	Enrollment (no.)
Auto mechanic	12	478
Welding and fabrication	12	495
Machinist	12	256
Industrial electrical and electronic control	12	781
Electronics technology	12	257
Refrigeration and air-conditioning	12	346
Plumbing and pipe fitting	12	116
Textile spinning mechanic	12	59
Textile weaving mechanic	12	41
Textile knitting mechanic	6	18
Industrial sewing operation	12	902
Garments finishing and quality control	6	54
Industrial garments machine mechanic	12	107
Industrial wool knitting operation	6	146
Industrial woodworking	12	76
Offset printing technology	12	21
Aide to nurse	12	188
Screen printing	12	40
Total		4,381

Source: UCEP Bangladesh.

Every year, about 5,000 students complete UCEP's technical training courses and are employed in various industries and organizations. UCEP graduates are sincere and dedicated workers. UCEP employment support teams regularly visit workplaces of the graduates to check their status and assess their performance based on the feedback of their supervisors and managers.

Linkages with employers. UCEP has established linkages with employers, forming employers' committees in different regions based on different trades. Every 6 months, UCEP organizes employers' committee meetings in different regions attended by employers or their representatives to provide inputs, suggestions, and advice for development of

UCEP's skills training programs. Employers also advise on prospects or opportunities for UCEP graduates. Such advice helps UCEP set strategies to move ahead.

Curriculum development process. Every year, UCEP reviews and updates its curricula, inviting former students, employers, and experts or instructors from other technical schools to their curriculum development meetings. UCEP updates its curricula and makes them demand-led or market-oriented based on inputs and suggestions from employers and meeting participants. As a result, more than 95% of job seekers among UCEP graduates are placed in jobs within 6 months of graduation with the help of the UCEP employment and field services component.

Employment and field services component. UCEP has a separate employment and field services component wherein more than 50 staff members have been engaged to maintain linkages with employers and arrange job placement for graduates. The staff also regularly conduct market surveys to identify the skills or trades that employers need. Based on their report, UCEP then starts providing training in the newly identified trades.

Financing. UCEP is financed by a consortium of external partners comprised of the United Kingdom's Department for International Development, the Embassy of the Netherlands, and Save the Children International.

B. Dhaka Ahsania Mission

Mid-level technical education offered by the Dhaka Ahsania Mission's (DAM) Institute of Technology and Vocational Education and Training (ITVET) utilizes an innovative delivery method through qualified and experienced teachers. The institute now offers training programs in seven disciplines—architecture technology, civil technology, computer technology, electrical technology, electronic technology, chemical technology, and textile technology—leading to a diploma in engineering.

The programs are open to candidates with SSC or equivalent qualifications, irrespective of age or year of passing the examination. All programs last 4 years, and semester final examinations are held under the Bangladesh Technical Education Board (BTEB). Students admitted to various programs between July 2008 and June 2009 totaled 1,502 (1,471 male and 31 female students). Graduates of these programs in ITVET are able to work in both public and private sectors, locally and abroad. DAM has an employment cell that maintains regular contact with employers and conducts regular follow-up of employed graduates.

DAM also offers a variety of livelihood skills development training courses through vocational institutes and short and special courses in rural-based vocational training centers or outreach centers (e.g., Ganokendra, Community Learning Center, Nonformal Education Centre, etc.). Along with skills development training, DAM provides employment support services, including linking up with other institutions. At present, DAM operates four full-fledged vocational training institutes/centers in rural and urban areas; another is being constructed at Pallobi, Dhaaka. The ultimate goal of DAM's skills development training program is to improve living conditions of the people it services by expanding their access to the world of work. DAM's target group includes children/child laborers working

in hazardous jobs, street children/pavement dwellers, school dropouts, unemployed adolescents and youth, poor and disadvantaged women, female heads of family, unskilled laborers (especially in the garment sector), and trafficking victims. Selection criteria for the skills development training program include social and economic vulnerability (ages 14–25 years), aspiration to obtain training and jobs, and physical fitness (for the concerned trade). The annual capacity of DAM's institutions is 2,100.

The courses offered by DAM's vocational institutes are (i) electrical works; (ii) refrigeration and air-conditioning; (iii) electronics repair and maintenance; (iv) tailoring and dressmaking; (v) block, boutique, and screen printing; (vi) embroidery and *jorichumki*;³⁴ (vii) beautician; (viii) leather craft; (ix) mobile phone servicing; (x) sweater knitwear-knitting; (xi) sweater knitwear-linking; and (xii) garment machine operation. The rural vocational training center also offers outreach-based courses including (i) hand embroidery, (ii) tailoring and dressmaking, (iii) vegetable cultivation, (iv) beautician, (v) apiculture/beekeeping, and (vi) mobile phone servicing.

Various external partners support DAM with projects and programs. DAM also generates funds by collecting donations and local contributions, fees and service charges, etc.³⁵

C. Mirpur Agricultural Workshop and Training School

The Mirpur Agricultural Workshop and Training School (MAWTS) began operation in 1973 with the technical and financial assistance of Caritas Switzerland. MAWTS mainly aims to develop a skilled workforce by providing technical education and training in a unique program that combines production and training, both off- and on-the-job. Its social mission offers sponsorships to poor rural youth through all eight regional offices in Bangladesh; each region has one regional technical school with accommodation facilities for the students. MAWTS regional technical schools also provide various courses for underprivileged people in the school's target area, including carpentry, electrical, engine mechanics (all 6 months off-the-job and 6 months on-the-job), and tailoring (6 months off-the-job). Each school has a job creation officer who arranges jobs for graduates. Its scholars are given the opportunity to become technically qualified workers and thus ensure a sustainable livelihood. MAWTS offers several courses related to various sectors of the economy. Currently, the number of short technical training courses is 71.

MAWTS also operates 35 mobile training units in *upazilas*/unions, offering courses, such as mechanical manufacturing and maintenance, motor mechanics, power tiller, carpenter, welding, and poultry, under eight regional offices. The courses are designed to last 5 months and 15 days. Initiated in July 1992, Phase VI of this Mobile Technical Training Project started in January 2010 and will continue as long as funding is available. Funding sources include the Germany-based organizations MISEREOR and Andheri Hilfe (interview in September and Annual Report 2010).

³⁴ Bangladeshi craft of decorating cloth.

³⁵ Dhaka Ahsania Mission website, <http://www.ahsaniamission.org.bd/>

Table A1.2: Major Courses Offered by Mirpur Agricultural Workshop and Training School

Course	Course Duration	Cumulative Graduates as of 30 June 2010 (2009–2010) (no.)
Diploma in engineering	4 years	232
Long-term mechanical course	3 years (2 years off-the-job and 1 year on-the-job)	1,178
Instructor training course	1 year	179
Short technical training course	1–14 weeks	27,960
Tailor-made course	8–12 weeks	1,956

Source: MAWTS.

D. SOS Vocational Training Center

The SOS Vocational Training Center Dhaka was established in 1988 with the major objective of transforming poor youth into skilled human resources through access to training and employment. The Center provides quality training and support to self-employed or wage-earning graduates. At present, the Center offers five trade courses lasting 1–2 years.

Table A1.3: Trade Courses Offered by the SOS Vocational Training Center

Course	Duration (years)	Students (no.)	Curriculum
Carpentry	1	20	Bangladesh Technical Education Board
Electrical	2	40	
Mechanical		40	
Automobile		40	
Electronic		40	

Source: SOS Vocational Training Center

E. Center for Mass Education in Science

The Center for Mass Education in Science (CEMS) opened in 1978 and established basic schools in Tangail. CEMS aims to empower disadvantaged people through appropriate education, particularly education in science and technology. The CEMS program includes a basic school system, an advanced basic school, and a rural technology center. CEMS' Adolescent Girls Programs empower girls and teach them a livelihood. Target groups include disadvantaged adolescents older than 12 years of age, who either dropped out of formal primary schools or did not get any chance for primary schooling. CEMS programs

last 5 years and include 2 years of basic schooling and 3 years of advanced basic schooling and technology education. At present, CEMS operates 22 rural units in various regions of the country, with an enrollment of 20,000 children and adolescents in basic schools and TVET programs. In addition, about 35,000 adolescent and young women benefit directly from CEMS gender programs.

CEMS' TVET programs include diversified trades such as garments, portable woodworking, mushroom, apiculture, poultry, cottage masonry, nursery, vermicomposting, solar home system, photography, beauty parlor, computer operation, and bookbinding. Its competency-based curricula meet job market requirements for wage and self-employment.

APPENDIX 2

Major Initiatives in Industry Training (Industry Training Institutions)

A. Bangladesh Garments Manufacturers and Exporters Association University of Fashion and Technology

Established by the Bangladesh Garments Manufacturers and Exporters Association (BGMEA), the BGMEA University of Fashion and Technology (BUFT), known as BGMEA Institute of Fashion and Technology (BIFT) until 2012, aims to develop a wider pool of skilled and professional human resources for Bangladesh's ever-growing garments sector. BUFT offers graduate-, diploma-, and certificate-level courses. Its major courses include Masters in Apparel Merchandising, Bachelor in Apparel and Knitwear Manufacturing and Technology, and diplomas in Apparel Merchandising, Fashion Design and Technology, and Knitwear Manufacture and Technology. The BUFT also offers four 6-month certificate courses (i.e., Woven Garments Merchandising, Knitwear Merchandising, Sweater Merchandising, and Quality Control and Compliance). The BUFT operates programs using its own sources of funding. A good number of graduates finish the courses and gain employment in the garments sector. In 2011, it had 1,320 trainees and about 30 instructors. As of 2011, it produced about 1,240 graduates in a year.

B. Bangladesh Knitwear Manufacturer and Exporters Associations

The Bangladesh Knitwear Manufacturer and Exporters Association (BKMEA) provides 1–6-month training courses for the development of skilled and trained manpower in the garment and textile sector, including courses in textile merchandising, industrial engineering and lean manufacturing, strategic production planning, sweater knitting and linking, industrial sewing operator, and quality assurance. Entry qualifications vary from course to course, but include grade 5 passed for some of the basic courses and graduate/diploma in textile engineering for advanced management courses. BKMEA's funding comes from students' training fees and from the Association. Five of its courses last 4 weeks and require a minimum of 25 participants. In 2011, BKMEA had 170 trainees and about 18 instructors. It produces about 1,080 graduates in a year (BKMEA 2011).

C. National Institute of Textile Engineering and Research

The National Institute of Textile Engineering and Research (NITER), known as National Institute of Textile Training Research and Design (NITTRAD) until 2012, which is a center of excellence in textile training and education, is operated by the Bangladesh Textile Mills Association (BTMA) in cooperation with the United Nations Industrial Development Organization (UNIDO) and the European Union, and in academic collaboration with some leading international universities. NITER conducts various training courses for the country's textile sector, including yarn manufacturing, fabric manufacturing, dyeing and finishing, garments technology, textile testing and quality control, and application of computers in textiles. The target students for its courses are fresh graduates of textile programs and working professionals in the textile industries (e.g., entry-level supervisors and other interested individuals) who are new to the sector. NITER's funding comes from students' training fees and BTMA. In 2011, NITER had 460 trainees and about eight instructors. It produces about 400 graduates in a year (BTMA 2011).

D. Chittagong Skills Development Center

The Chittagong Skills Development Center (CSDC) is an industry-led skills training center. It aims to strategically develop Bangladesh's workforce by catering to skills needs in the information and communications technology, manufacturing, and services sectors. Initiated in 2007, CSDC formed as a partnership several organizations, including mobile phone operator AKTEL (now Robi), equipment vendor Alcatel-Lucent, Ericsson, Huawei, the Pedrollo Group, the trade industry body Chittagong Chamber of Commerce and Industry, and nongovernment organizations A.K. Khan Foundation and Underprivileged Children's Educational Programs, to promote telecom skills development.

It offers tailor-made short training courses for people employed in industries, and institutes to boost industrial productivity and help develop the capacity of the institutes. Some of its courses are Leader Skills for Managers, Power System Maintenance of Telecom Installations, Fire Safety at the Workplace, Workplace Trainer Program, Strategic Procurement, Team Building for Workplace Productivity, Industrial Safety, and Finance for Nonfinance Professionals. Course duration varies from 1 day to 5 days, and most programs (particularly 1-day programs) cost Tk2,500 per participant. Since its inception, CSDC has offered 164 programs, and about 2,926 participants have received training. In 2010, it enrolled 320 trainees in 21 programs; this increased in 2011 to 598 trainees in 33 programs. In fact, the CSDC now offers programs that replicate the model of the Penang Skills Development Center in Malaysia. It delivers management training programs for employees from different organizations and hires highly experienced facilitators from renowned industries and institutions. Its training is concentrated in Dhaka and Chittagong, and its programs are in high demand. Replicating the CSDC is essential to enable the provision of high-quality training for managers and staff members of various organizations, and to increase the productivity of industries and institutes.

The challenges the CSDC faces relate to continuing support from its members and managing its trainees. It also must develop its own infrastructure because it still operates its training programs in leased venues. Although the CSDC concept is good, it still needs to attract attention from industries. CSDC funding derives from training fees and members.

E. Dhaka Chamber of Commerce and Industry Business Institute

The Dhaka Chamber of Commerce and Industry (DCCI) Business Institute (DBI) offers various courses related to Entrepreneurship Development, Management Development, Business Communication, Product Development, Market Research, Export-Import Procedures etc for professionals in different industries.

One of DBI's leading courses is the International Certificate/Diploma in Supply Chain Management, a program offered in technical collaboration with the International Trade Center (ITC)-United Nations Conference on Trade and Development/World Trade Organization in Geneva. DBI conducts training and examinations while the relevant learning materials and examination papers are supplied by ITC, Geneva. ITC and DCCI jointly provide certificates to the students on completion of the course. DBI generates funding from training fees and contributions of its parent organization, DCCI. The DBI academic committee designs course and training programs, and its governing board formulates policy and provides guidance to the standing committee. The DBI plans to offer Bachelor of Business Administration (BBA) and Executive MBA courses to meet growing demand from industries. From 2007 to 2011, DBI had 617 trainees received training from three level of courses on Supply Chain Management (DBI 2011).

APPENDIX 3

Statistical Data Related to Technical and Vocational Education and Training

Table A3.1: Annual Results of Diploma-Level Examinations, 2006–2010

Exam Year	Institutions	Appeared (no.)		Passed (no.)		Total Passed (%)	Female Pass Rate (%)
		Total	Female	Total	Female		
2006	Government	4,603	529	2,385	285	51.8	53.8
	Nongovernment	1,801	135	439	46	24.4	34.1
	Total	6,404	664	2,824	331	44.1	49.8
2007	Government	6,209	704	2,723	313	43.8	44.4
	Nongovernment	3,487	230	837	64	24.0	27.8
	Total	9,696	934	3,560	377	36.7	40.3
2008	Government	9,943	989	5,387	549	54.2	55.5
	Nongovernment	3,280	225	1,069	89	32.6	39.5
	Total	13,223	1,214	6,456	638	48.8	52.5
2009	Government	10,546	1,253	6,443	876	61.1	69.9
	Nongovernment	3,153	189	1,115	87	35.3	46.0
	Total	13,699	1,442	7,558	963	55.2	66.7
2010	Government	12,795	1,490	8,018	958	62.6	64.3
	Nongovernment	3,168	172	982	61	31.0	35.4
	Total	15,963	1,662	9,000	1,019	56.4	61.3

Source: BTEB.

Table A3.2: Higher Secondary Certificate (Vocational) Pass Rates by Program, 2010

Program	Appeared (no.)		Passed (no.)		Passed (%)	
	Total	Female	Total	Female	Total	Female
Industrial woodworking	80	24	44	13	55	54
Agromachinery	849	42	457	20	54	48
Automobile	522	2	233	0	45	0
Building maintenance and construction	367	55	199	27	54	49
Clothing and garment finishing	494	199	287	126	58	63
Computer operation and maintenance	952	186	498	106	52	57
Drafting, civil	196	49	86	23	44	47

continued on next page

Table A3.2 *continued*

Program	Appeared (no.)		Passed (no.)		Passed (%)	
	Total	Female	Total	Female	Total	Female
Electrical work and maintenance	2,494	101	1,374	62	55	61
Electronic control and communication	603	92	246	46	41	50
Fish culture and breeding	69	39	33	22	48	56
Machine tools operation and maintenance	504	13	274	9	54	69
Poultry rearing and farming	138	26	86	18	62	69
Refrigeration and air-conditioning	470	39	242	21	51	54
Welding and fabrication	629	22	335	16	53	73

Note: This course is run only by the government through the technical schools and colleges under the Department of Technical Education.

Source: BTEB.

Table A3.3: Secondary School Certificate (Vocational) Pass Rates by Program, 2011

Program	Ownership	Appeared (no.)		Passed (no.)		Passed (%)	
		Total	Female	Total	Female	Total	Female
General Electronics	Government	1,668	434	1,210	311	73	72
	Nongovernment	4,022	1,560	2,918	1,084	73	69
	Total	5,690	1,994	4,128	1,395	73	70
Building Maintenance	Government	515	134	353	86	69	64
	Nongovernment	7,532	1,444	5,838	1,074	78	74
	Total	8,047	1,578	6,191	1,160	77	74
Dress Making	Government	1,369	777	1,088	608	79	78
	Nongovernment	12,106	8,677	8,573	6,216	71	72
	Total	13,475	9,454	9,661	6,824	72	72
Food Processing and Preservation	Government	83	48	72	40	87	83
	Nongovernment	3,810	2,818	2,648	1,973	70	70
	Total	3,893	2,866	2,720	2,013	70	70
General Electrical Works	Government	3,595	222	2,912	174	81	78
	Nongovernment	11,421	1,387	8,914	1,003	78	72
	Total	15,016	1,609	11,826	1,177	79	73
Refrigeration and Air-conditioning	Government	1,300	128	999	104	77	81
	Nongovernment	420	54	333	39	79	72
	Total	1,720	182	1,332	143	77	79
Architectural Drafting with AutoCAD	Government	272	161	239	145	88	90
	Nongovernment	55	55	43	43	78	78
	Total	327	216	282	188	86	87

Source: BTEB.

Table A3.4: National Skills Standard Pass Rate by Program, 2011

Program	Ownership	Appeared (no.)		Passed (no.)		Passed (%)	
		Total	Female	Total	Female	Total	Female
Auto Mechanics	Government	119	1	85	0	71	0
	Nongovernment	0	0	0	0	0	0
	Total	119	1	85	0	71	0
Refrigeration and Air-conditioning	Government	111	1	78	1	70	100
	Nongovernment	151	0	94	0	62	0
	Total	262	1	172	1	66	100
General Electrician	Government	76	0	65	0	86	0
	Nongovernment	25	0	18	0	72	0
	Total	101	0	83	0	82	0
Driving cum Auto Mechanics	Government	66	4	52	3	79	75
	Nongovernment	119	5	75	0	63	0
	Total	185	9	127	3	69	33
Computer Office Application	Government	274	79	247	71	90	90
	Nongovernment	27,276	9,435	20,160	7,503	74	80
	Total	27,550	9,514	20,407	7,574	74	80

Source: BTEB.

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**Innovative Strategies in Technical and Vocational Education and Training
for Accelerated Human Resource Development in South Asia**
Bangladesh

This publication is part of a series of six country reports on technical and vocational education and training (TVET) and higher education in Bangladesh, Nepal, and Sri Lanka. Each report presents current arrangements and initiatives in the respective country's skills development strategies. These are complemented by critical analyses to determine key issues, challenges, and opportunities for innovative strategies toward global competitiveness, increased productivity, and inclusive growth. The emphasis is to make skills training more relevant, efficient, and responsive to emerging domestic and international labor markets. The reports were finalized in 2013 under the Australian AID-supported Phase 1 of Subproject 11 (Innovative Strategies for Accelerated Human Resource Development) of Regional Technical Assistance 6337 (Development Partnership Program for South Asia).

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