

INNOVATIVE STRATEGIES IN

Technical and Vocational Education and Training

for Accelerated Human Resource
Development in South Asia



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January 2014



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Printed in the Philippines.

ISBN 978-92-9254-419-5 (Print), 978-92-9254-420-1 (PDF)

Publication Stock No. RPT136125

Cataloging-in-Publication Data

Asian Development Bank.

Innovative strategies in technical and vocational education and training for accelerated human resource development in South Asia.

Mandaluyong City, Philippines: Asian Development Bank, 2014.

1. Technical education. 2. Vocational education. 3. South Asia. I. Asian Development Bank.

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Foreword

Skilled human resources are one of the major binding constraints to sustain high economic growth in South Asia. It is therefore not surprising that the findings from the study show that South Asian countries need to invest significantly in human capital to reap the benefits arising from the limited window of demographic dividend available in the next 3–4 decades and to move up the value chain. The findings are a reminder that the countries' competitiveness and ability to move up the value chain in the longer term will come from innovation, knowledge, and skills, and not from cheap labor or natural resources, which tend to be short-lived. From the current low skills equilibrium linked to low global competitiveness index and human development index, the South Asian countries have a historical opportunity to leapfrog through strategic investment in human capital anchored on information and communication technology.

Asia 2050, published in 2011 by the Asian Development Bank, presents two scenarios: (i) the “Asian Century” with sustained high economic growth leading to doubling of Asia's share of global gross domestic product (GDP) from around 25% currently to just over 50% by 2050; and (ii) the “middle income trap” for several countries, leading to much lower growth and GDP. The initial heavy reliance of the East Asian tiger economies on export-led growth, anchored on early investment in basic education, yielded the necessary skills to take advantage of short-lived cheap labor to build the foundation at the beginning of their journey to prosperity. They were able to quickly expand their investment in secondary education, technical and vocational education and training (TVET), and subsequently in higher education to supply skilled workers to sustain high economic growth and gradual transition to a knowledge economy. The rest is history.

A 2012 McKinsey report, *The World at Work*, noted that South Asian countries, along with some developing economies in Africa, will contribute 60% of the labor force required by the global economy by 2030 due to demographic dividend arising from a growing young population in these developing economies and shrinking working-age populations in advanced economies due to aging. The same report also noted that developing economies, including in South Asia, will face a surplus of low-skilled workers, while there will be a shortage of medium and highly skilled workers.

This regional report, prepared with financial support from Australian Aid, is based on eight country-level reports on TVET and higher education. The report has sought to identify priorities in TVET and higher education on how to meet the emerging needs for skilling and/or upskilling a large number of young people to turn them into a productive and competitive force in both the domestic and global labor markets.

We will continue to learn more about emerging opportunities and seek viable options to support South Asian developing member countries in their efforts to improve the skills and knowledge of their populations to become more productive and competitive, leading to inclusive and sustainable growth.

Juan Miranda
Director General
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Preface

The report highlights a number of strategic areas for further dialogue and improvements. In technical and vocational education and training (TVET), it reconfirms that the system remains fragmented, with many ministries involved in each country in providing TVET services although there has been progress in developing and approving national skills development policies, setting up apex bodies to coordinate TVET, and moving toward a unified quality assurance framework. The report notes that the overall provision remains marginal against the actual labor market needs; private sector and employer involvement is limited, as are mechanisms to promote public–private partnerships; and funding remains only a fraction of the projected needs for TVET with an absence of sustainable financing mechanisms such as levies or tax incentives exercised by over 65 countries in the world.

The report emphasizes three major areas to elevate the importance of skills development to reap the benefits offered by the demographic dividend and to move up the value chain: establishing and/or restructuring existing institutions for effective coordination and institutional autonomy to flexibly respond to emerging labor market needs; establishing a single, unified, and sustainable funding window to expand performance-based quality skills training programs to meet the huge needs for training many more people for domestic and overseas labor; and enhancing quality assurance to meet national and international standards, including preparing training packages, training trainers, and building a robust monitoring system.

In higher education, the report highlights the global trends during the past 20 years: elite to mass higher education, emergence of private higher education, increased reliance on tuition, autonomy with accountability, and emergence of special types of higher education. It also highlights the need to establish new institutions for quality assurance, to conduct high-quality research, and to develop specialized institutions. As emerging new practices, the report notes strategic planning, income generation, budget allocations through funding formulas, a focus on applied research, and public–private partnerships. It also points out shortcomings, such as weak quality assurance systems, lack of importance given to applied research, weak autonomy and accountability, and existence of only a few specialized institutions.

Noting that cheap labor or abundant resources are no longer a comparative advantage, it recognizes productivity gains driven by innovation as the real advantage. Highlighting the trend toward global integration, creation of a global labor market, and move toward a knowledge economy and information society, the report calls for constant innovation to generate new knowledge and to apply such knowledge. It underscores the need for a flagship university in each country that would serve as the standard for its move toward having a world-class higher education system offering relevant and quality undergraduate and postgraduate programs. The report recommends depoliticizing higher education institutions, providing institutions more autonomy with increased accountability, diversifying and expanding resources for higher education, and defining a national higher education strategy.

This publication is one of the two-part regional report on TVET and higher education. It presents the findings of the regional technical assistance project Development Partnership Program for South Asia—Subproject 11: Innovative Strategies for Accelerated Human Resource Development in South Asia. Three country-level

workshops were held during the first week of December 2012 in Sri Lanka (1 December), Nepal (3 December), and Bangladesh (5 December) to validate the findings and to seek consensus among some of the key stakeholders around major recommendations and next steps.

The findings emanate from country-level analyses supported by national consultants in each of the three focus countries—Bangladesh (Md. Mohiuzzaman for TVET and M A Mannan for higher education), Nepal (Devi Dahal for TVET and Hridaya Bajracharya for higher education), and Sri Lanka (Sunil Chandrasiri for TVET and higher education with initial inputs from Dayantha Wijeyesekera on TVET)—as well as desk reviews of Bhutan and the Maldives by the national coordinator, Nicholas Tenazas, based in Manila. The regional reports were prepared by Richard Johanson (TVET) and William Saint (higher education). The reports also benefited from comments from David Ablett, Brian Chin, Sofia Shakil, Gi-Soon Song, and Karina Veal from the South Asia Human and Social Development Division (SAHS); Rudi Van Dael from the Bangladesh Resident Mission; Smita Gyawali from the Nepal Resident Mission; and Nelun Gunasekera and K.M. Tilakratne from the Sri Lanka Resident Mission. Brajesh Panth, lead education specialist in SAHS, managed and coordinated the studies with support from Rhona B. Caoli-Rodriguez. He also gave presentations at the country-level workshops held in Bangladesh, Nepal, and Sri Lanka in December 2012 and at the Asian Development Bank in January 2013. Criselda Rufino and Erwin Salaveria provided valuable administrative and logistical support.

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Abbreviations

ADB	Asian Development Bank
ATP	Apprentice Training Program (Bhutan)
ATPA	Accredited Training Providers' Association
BCR	Bangladesh Country Report
BDR	Bhutan Desk Report
BMET	Bureau of Manpower, Employment and Training (Bangladesh)
BTEB	Bangladesh Technical Education Board
CSDC	Chittagong Skills Development Center
CTEVT	Council for Technical Education and Vocational Training (Nepal)
DACUM	Development of a Curriculum (based on Ohio State University methodology)
DAM	Dhaka Ahsania Mission (Bangladesh)
DTE	Directorate of Technical Education (Bangladesh)
DTET	Department of Technical Education and Training (Sri Lanka)
FCAN	Federation of Contractors' Associations of Nepal
FNCCI	Federation of Nepalese Chambers of Commerce and Industry
GDP	gross domestic product
HRD	human resource development
HRDF	Human Resource Development Fund (Malaysia)
HSC (voc)	higher secondary certificate (vocational) (Bangladesh)
ICT	information and communication technology
ILO	International Labour Organization
ISC	industry sector council (Bangladesh)
MAWTS	Mirpur Agricultural Workshop and Training School (Bangladesh)
MHRYS	Ministry of Human Resources, Youth and Sports (Maldives)
MIS	management information system
MOE	Ministry of Education
MOLHR	Ministry of Labour and Human Resources (Bhutan)
MQA	Maldives Qualifications Authority
MYASD	Ministry of Youth Affairs and Skills Development (Sri Lanka)
NAITA	National Apprenticeship and Industrial Training Authority (Sri Lanka)
NCR	Nepal Country Report
NGO	nongovernment organization
NQF	national qualifications framework
NSDC	National Skill Development Corporation (India)
NSDC	National Skills Development Council (Bangladesh)
NSDP	National Skills Development Policy (Bangladesh)
NSTB	National Skills Testing Board (Nepal)
NVQ	national vocational qualifications
NVQF	national vocational qualifications framework
NYSC	National Youth Services Council (Sri Lanka)

PPP	purchasing power parity
SDF	Skills Development Fund (Singapore)
SLCR	Sri Lanka Country Report
SLITHM	Sri Lanka Institute of Tourism and Hotel Management
SSC (voc)	secondary school certificate (vocational) (Bangladesh)
T&E	private training and employment service provider (Nepal)
TITI	Training Institute for Technical Instruction (Nepal)
TSLC	technical school leaving certificate (Nepal)
TTC	technical training center (Bangladesh)
TTTC	Technical Teacher Training College (Bangladesh)
TVEC	Tertiary and Vocational Education Commission (Sri Lanka)
TVET	technical and vocational education and training
UCEP	Underprivileged Children's Educational Programs (Bangladesh and Nepal)
UNIVOTEC	University of Vocational Technology (Sri Lanka)
US	United States
VTA	Vocational Training Authority (Sri Lanka)
VTTI	Vocational Teachers Training Institute

Currency Equivalents

as of 24 September 2013

Bangladesh: \$1.00 = 78 taka
 Nepal: \$1.00 = 100 rupees
 Sri Lanka: \$1.00 = 132 rupees

Executive Summary

This publication synthesizes country reviews of technical and vocational education and training (TVET) in Bangladesh, Bhutan, the Maldives, Nepal, and Sri Lanka.¹

Background

Socioeconomic. One of the greatest challenges faced by South Asian countries is creating productive employment for the vast numbers of young entrants to the labor market. About 1.5 million enter the labor market annually in Bangladesh, 450,000 in Nepal, and 160,000 in Sri Lanka. The youth unemployment rate is 13.0% in Bangladesh, 9.4% in Bhutan, 22.2% in the Maldives, 8.8% in Nepal, and 21.0% in Sri Lanka. The informal sector accounts for 90% of the labor force in Nepal and 80% in Bangladesh, including two-thirds of nonfarm employment. In Sri Lanka, the informal economy makes up slightly more than 60% of employment, including half of nonagricultural employment. The challenge of job generation domestically is offset partly by employment abroad. Remittances from work abroad have grown steadily as a percentage of gross domestic product (GDP) in Bangladesh and Sri Lanka, averaging about 10% per year. They jumped much more dramatically in Nepal and now account for just under a quarter of GDP. Enterprise-based training is lowest in the South Asia region compared with the rest of the developing world, particularly in Bangladesh and Nepal.

Technical and vocational education and training systems. Total identified enrollments in TVET are about 380,000 in Bangladesh, 84,000 in Nepal, and 124,000 in Sri Lanka. Formal TVET tends to be lengthy (2–4 years per level) with relatively high educational entrance requirements, typically completion of 8–10 years of basic education. TVET enrollment is small in relation to general education at the secondary level: 3.3% in Bangladesh and less than 1% in Nepal. Access is restricted to those with basic general education, which acts as a barrier to early school dropouts who want access to skills development. Correspondingly, little is spent on TVET as a percentage of education ministry budgets or of total government spending: 2.6% of the Ministry of Education (MOE) budget in Bangladesh, 1.2% of the MOE budget and 0.2% of total government spending in Nepal, and 0.4% of total government spending in Sri Lanka. A high degree of centralization exists in the administration of TVET in all countries. A distinguishing characteristic is three apex organizations: the Ministry of Labour and Human Resources in Bhutan, the Council for Technical Education and Vocational Training (CTEVT) in Nepal, and the Tertiary and Vocational Education Commission (TVEC) in Sri Lanka. There is little devolution of authority to the boards or managers of public training institutions. Public TVET provision is also characterized by a high degree of fragmentation among ministries: 22 ministries and departments provide training in Bangladesh, 10 in Nepal, and 21 in Sri Lanka.

Private provision of training is growing in response to the limits of public provision: Private providers make up 95% of the training institutions in Bangladesh and 75% of enrollments, 50% of enrollments in Bhutan, and 62% of the training institutions and 29% of enrollments in Sri Lanka. In Nepal, the number of approved private training institutions grew from 3 in 1991 to 100 in 2000 and more than 450 in 2011. The TVET systems in

¹ The Bhutan report is based on a desk review, while the Maldives report is based largely on a desk review and a short visit by the national coordinator.

Bangladesh and Sri Lanka are also characterized by low output of trained teachers and instructors and high vacancy rates for instructor positions because of slow bureaucratic procedures for filling vacancies, weak supply, and unattractive salaries. Strong examination systems exist in two countries for formal TVET—the Bangladesh Technical Education Board and the National Skills Testing Board (NSTB) in Nepal. Sri Lanka has implemented a system of national vocational qualifications that stresses continuous assessment of competency-based skills. Other countries plan to do the same. Little information could be gleaned from the review, however, about training for the informal sector.

Technical and vocational education and training policies and plans. All five countries are in various stages of transition from a supply-led to a demand-led system of skills development. Bangladesh, Bhutan, and Nepal have prepared national skills development policies. Two of the major policy initiatives have taken a long time to be approved—3 years in Bangladesh and 5 years in Nepal. The plans in some cases tend to push expansion over quality. Except for Bhutan, the policies are weakened by lack of careful analysis of economic prospects and identification of their implications for skills. The policies and plans do not specify the cost implications of the measures proposed, so financial feasibility remains a question. Priorities were not selected among the myriad prescriptions to guide initial actions. Sri Lanka has gone more deeply into planning—by sector and by province. These sectoral and provincial plans could now be consolidated into a national plan of action.

Strengths of the TVET System

In Bangladesh, strengths include added flexibility in public training through allowance of short-term training in technical training centers (TTCs) on a cost-recovery basis, a strong examination system, the National Skills Development Policy, establishment of industrial sector committees, and expansion of short courses for underserved populations. Additional strengths are extensive private provision, outstanding industry initiatives in training, and excellent nongovernment organization (NGO) provision for disadvantaged groups. The TTCs in particular are beginning to exhibit devolution of authority and flexibility in raising revenues, but this requires more efforts along with a strong political will to reform.²

Bhutan has a well-organized apex ministry for skills development, a comprehensive national policy, systematic quality assurance procedures for registration and accreditation of private providers, occupational standards in four fields and the start of competency-based training, effective apprenticeship training, and a tested model for training villagers for income generation.

In Nepal, strengths include its comprehensive apex institution, strong skills testing through the NSTB, a superb staff-training organization in the Training Institute for Technical Instruction, competency-based curriculum development, growth of private training providers, expansion of short-term skills training for disadvantaged groups through externally funded projects, and piloting of performance-based contracts.

Sri Lanka has raised the educational level of its population; brought the disparate public providers under one administrative roof in the Ministry of Youth Affairs and Skills Development (MYASD) and TVEC; and provided strong policy support for TVET, including a strong apprenticeship system and extensive rural training facilities, adoption of a national vocational qualifications system and competency-based training, extensive industry sector and provincial TVET plans, an embryonic system of career guidance, registration of more than 1,000 private providers, an innovative association for private providers, and economic analysis that shows positive returns for TVET.

² This matches good practice elsewhere: The Republic of Korea allows vocational schools to earn and invest through training contracts with local employers; Indonesia does the same for nonformal training centers.

Economic Relevance

Symptoms of economic irrelevance of training include mismatches between supply and demand, employer complaints, and low employment rates for graduates. Causes include lack of information about demand, lack of employer involvement in the various phases of training from policy development to delivery, and rigid supply responses by public training providers.

Equity

Overall access to skills acquisition is low in relation to the potential clientele. High educational entry requirements exclude the majority of youths and young adults. In addition, the poor cannot afford the opportunity costs of the long courses (1–2 years). Female participation is relatively low in TVET and concentrated in female-dominated occupations. Several externally financed projects are seeking to rectify the lack of female access in Bangladesh and Nepal. Geographical imbalances also exist—with low enrollments in rural and low-income areas. Vertical mobility is also blocked in some types of TVET.

Quality of Training

Low performance of candidates on terminal examinations is symptomatic of low quality. The performance of many private institutions has been lower than that of public institutions in Bangladesh, which is also reported in Nepal. Diploma-level passes in Sri Lanka have numbered fewer than half of the candidates. Lack of qualified teachers is a major factor in low-quality training. This is caused by multiple factors, including insufficient supply, chronic vacancies, and low attractiveness of remuneration. Other factors are inadequate spending on material inputs, lack of monitoring and evaluation, and lack of incentives for good performance. Quality assurance processes leave something to be desired, particularly regarding resources and the authority to compel private providers to follow regulations. Strategies to improve quality include the establishment of national vocational qualification frameworks (NVQFs) and concentration of resources in centers of excellence, as in Sri Lanka.

Organizational and Management Effectiveness

Issues apply both in central administration and in management of training delivery. At the center, CTEVT in Nepal suffers from lack of authority and ability to coordinate the fragmented public provision across government departments. TVEC in Sri Lanka has not effectively integrated the four main government providers, leading to duplication at the provincial level. National coordination of skills development has started in Bangladesh, and further work is under way to develop action plans to implement the National Skills Policy approved in 2012. However, the National Skills Development Council (NSDC) and its secretariat have to be strengthened to evolve as an apex organization to sustain the required coordination. Quality assurance of private provision occurs more as an exception than the rule. At the level of public training institutions, none of the three focus countries delegate much authority to institutional boards or managers. All the countries fail to systematically collect information on TVET, public or private, nor do they conduct much research to identify issues except where externally instigated and financed.

Internal Efficiency and Sustainability

Public financing of TVET consumes little of total spending on education and training or of total government spending. In Bangladesh and Sri Lanka, training is virtually free. TVET is generally considered only a minor subset of the education system. Generation of additional income in Bangladesh and Sri Lanka is constrained by government policies that require such income to be returned to central authorities. Allocation of public funds to institutions is also problematic. Funds are transferred without regard to performance. Examples of inefficiencies

include overcentralization, which prevents institutional managers from economizing on resources; training programs that are longer than necessary for the skills taught; underuse of physical facilities; diseconomies of scale; duplication of programs in provinces; and high dropout rates, which lead to high total cost per employed graduate. In some cases, the trainees have no intention of entering the occupations for which they are being trained.

Strategies and Innovations

This publication presents ways and means to achieve key policy goals in TVET. Some of the proposed interventions contribute to more than one policy goal and therefore are mentioned more than once. The text provides examples of good practice and innovation.

To match TVET supply and economic demand, TVET should be linked to economic development strategies by analyzing the skill implications of economic investments. One of the most effective strategies to raise the relevance of training is to involve employers closely in directing and evaluating the training system. Salient examples are noted in Bangladesh and Sri Lanka. Deeper employer involvement requires recognizing employer time constraints, building employer participation in governance, and using enterprise associations to build public–private partnerships. More flexible training supply is also a key. Public TVET can be made more flexible through short-term programs; modular content; local accountability; and continuous, lifelong training. Guidance and counseling can also help mesh training supply with market demand. The responsiveness of TVET systems depends on having a diversity of providers motivated to meet the demand for skills. Support for private provision, including through associations, helps provide such diversity. Additional efforts to ensure relevance include providing skills for people in the informal sector—currently neglected throughout the region—and generating high technical skills for higher value-added production.

Another policy objective is to achieve higher skills standards and more effective skill acquisition; that is, quality. The principal means include higher educational requirements for entering trainees, competency-based training based on occupational standards, expanded supply of qualified instructors, better use of examination systems and regulations, concentration of resources, and use of competitive training funds.

The means to achieve greater access to skills acquisition include greater public funding, articulated pathways through NVQFs, diversification of types of training, and more private provision for those able to afford it. Equity can be strengthened through early interventions to prevent school dropout, financial aid to lower direct costs to the trainees, and allocation of support through vouchers. Gender equity requires preferential admissions, programs for nontraditional occupations, and preparation of female instructors.

TVET is arguably the most difficult education subsector to govern and manage because of complexities in the number and type of organizational sponsors, diversity of clients, varied types of delivery, and changing labor market demands. Reform of apex institutions requires greater authority and better integration of diverse providers based on institutional audits. Strategies to reform governance and management include changing the role of the central government in TVET from a direct provider to one of oversight, facilitation, and regulation. Other means include rationalizing service provision at the district and local levels, and devolving authority to public training institutions combined with accountability for results.

Further policy objectives are to use existing resources more efficiently and effectively through better targeting and to mobilize resources for sustainability. Public TVET tends to be underfunded, but existing resources could still be used to better effect. Better efficiency must start with systematic measurement of costs and elimination of duplication within public provision and overlap with private provision. However, minimizing costs does not suffice. A larger resource base is needed. Raising the required resources can be considered one of the biggest

challenges for TVET. One key finding of the review is that, despite potentially large gains in productivity, both governments and enterprises in South Asia underinvest in training. Additional resources are needed, but public funds are limited, cannot meet demands, and are not likely to increase. Additional, nonpublic sources of financing must be found. One way to mobilize resources and create demand-side financing is to collect levies from enterprises for training purposes. Levies are used by more than 60 countries in all regions of the world except South Asia. A training levy could mobilize substantial resources and seems particularly suitable for Sri Lanka. Another way to achieve demand-side financing would be to provide industrial sector councils with funding to implement their recommendations.

The way funds are transferred can be of greater importance than the amounts transferred. At present, most public funds are allocated and spent without regard to performance: Good performance reaps no reward, and poor performance suffers no penalty. One way to boost results is to attach performance conditions on payments, as has been demonstrated in Nepal.

Conclusions

This review has identified a wide range of good practices from which other countries could benefit. These include enterprise training initiatives, effective NGO training for the disadvantaged, experience of apex institutions, caution about NVQFs, and the use of performance-based funding. The countries under review, in turn, could benefit from studying massive government support for skills development in East Asia, employer-led training in Latin America, and the new skills development corporation in India.

Important positive factors are being put in place for the development of TVET. Among these are (i) indicated willingness, even eagerness, of enterprise associations to play a bigger role in skills development, such as by the Federation of Contractors Associations of Nepal and the chambers of commerce and industry in Sri Lanka; (ii) strong social demand to pay for training, as manifested by the response of private provision of TVET when government is unable to provide it; (iii) existence of apex institutions for TVET, which promise better coordination and efficiency; (iv) common intention to develop NVQFs and to implement them cautiously; and (v) existence of good practices, including NGO support, in training disadvantaged groups such as the Underprivileged Children's Educational Program in Bangladesh.

Major challenges remain in the area of financing TVET in the countries reviewed. Governments and enterprises alike are underinvesting in skills development. Lessons can be learned from East Asia, where governments provided massive support for building skills at different stages of development, and from Latin America, where employers led and financed much of the training. Enterprise financing through training levies has also contributed substantially to financing training in East Asia. India, for its part, is now promoting the engagement of the private sector through the National Skill Development Corporation, which will help it to achieve greater international competitiveness.

Opportunities exist for enhancing the effectiveness and efficiency of skills development in South Asia. First, there is a need to build private sector involvement and provision in skills development. This requires provision of incentives for employers to identify and fill training needs. Second, there is a need to support private training providers, for which funding arrangements will be crucial, including endowment for proven programs, and support to private training providers' associations for services and technical assistance to their members. Third, targeted capacity development is critical in planning and programming as well as in organizational development to streamline overall coordination and efficacy of skills training. Last, given the immense needs for skills development, sustainable financing arrangements will be essential.

1 Introduction and Background

This chapter explains the objectives of the review, its scope, and the limits of and criteria for analysis.

OBJECTIVES

This publication tackles the challenges facing technical and vocational skills, explores innovative ways of delivering technical and vocational education and training (TVET), and reviews the role of governments in TVET and new financing modalities such as public–private partnerships. It identifies the current setup of the education system and its subsectors; key constraints in TVET; and innovative policy options for improving inclusive access, quality, and financing of TVET to accelerate human resource development in the South Asian developing member countries of the Asian Development Bank (ADB). This includes proposing relevant strategies for the further development and financing of TVET in the selected member countries.

SCOPE OF WORK

“Skills development” in this publication refers to technical and/or vocational skills below the level of a first university degree. “TVET” means technical and vocational education and training.¹ “Formal TVET” means training provided as part of the school system at the secondary and postsecondary levels. “Nonformal TVET” is organized training outside the formal school system. “Informal training” means the acquisition of skills through unorganized means, such as learning on the job or from a parent.

This publication looks at training systems widely, not deeply. That is, it is more macro in focus and not micro (such as going into the content of training programs). In principle, it covers all types of skills training, including agriculture, health, commercial, and engineering professions, but it does not delve deeply into any subject.

The review covers five countries in ADB’s South Asia Department: Bangladesh, Nepal, and Sri Lanka, and, to a limited extent, Bhutan and the Maldives. The focus, however, centers on Bangladesh, Nepal, and Sri Lanka.² India was excluded to keep the review within a manageable size, but some examples of innovations in India are provided.

¹ Some countries use the acronym TEVT for “technical education and vocational training,” but this seems more restrictive.

² The Bhutan report is based on a desk review, while the Maldives report is based largely on a desk review and a short visit by the national coordinator.

LIMITATIONS

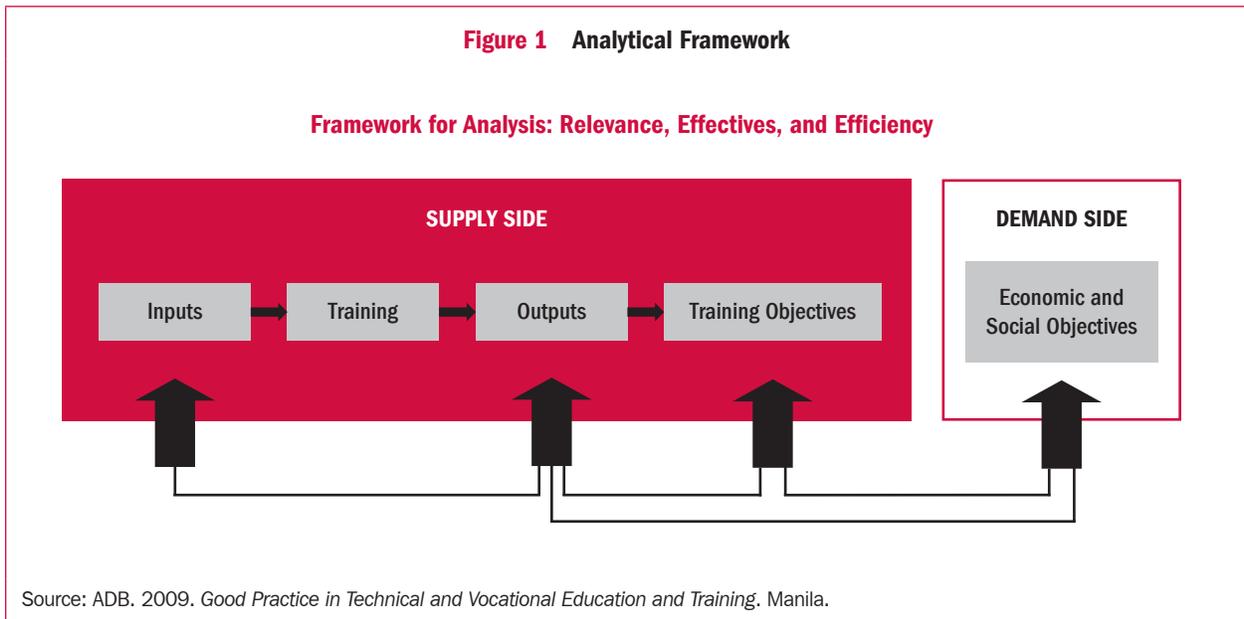
The review makes no claim on comprehensiveness. Some important topics, such as entrepreneurship training and agricultural training, could not be covered, and given the wide scope of the review, topics could not be analyzed in depth. The content of the review and the analysis were limited by weak statistics on TVET in all countries, especially on enrollment by programs, private provision, costs, and financing. The review is also subject to the risk of overgeneralization based on limited data. One specific limitation pertains to Bhutan, which involved only a desk study without field review to verify findings.

ANALYTICAL FRAMEWORK

A TVET system can be evaluated according to three main criteria:

1. Relevance, or external efficiency: To what extent does the system meet external requirements? This has two aspects:
 - (a) economic, and
 - (b) social or equity considerations.
2. Effectiveness: To what extent does the TVET system reach its objectives? This has two parts:
 - (a) quality of the training produced, and
 - (b) performance of its management and administration.
3. Internal efficiency: How well does the TVET system mobilize and use resources economically?

These criteria can be illustrated as in Figure 1.



SOCIOECONOMIC BACKGROUND

Appendixes 1 and 2 present the main socioeconomic indicators and trends. The following list summarizes the main features:

- Population growth and labor force growth in the main countries of the review are comparatively low—in the range of 1%–2% per year. However, one of the greatest challenges faced by South Asian countries is creating productive employment for the vast numbers of young entrants to the labor market. About 1.5 million enter the labor market in Bangladesh annually, 450,000 in Nepal, and 160,000 in Sri Lanka. The youth unemployment rate is 13.0% for Bangladesh, 9.4% in Bhutan, 22.2% in Maldives, 8.8% in Nepal, and 21.0% in Sri Lanka.
- Average per capita incomes have been growing, but poverty levels vary widely, from 29% of the population living on \$2 (purchasing power parity) or less daily in Sri Lanka to 78% in Nepal and 81% in Bangladesh.
- Educational levels of the labor force are low in Bangladesh and Nepal, although they are improving due to efforts aimed at universal primary education. In Bangladesh, two-thirds of the working-age population have had only basic or no education. In Nepal, an estimated one-third of entrants drop out of school before completing grade 5. Sri Lanka's labor force is becoming increasingly better educated; the proportion of those with a lower secondary background has reached nearly 50%.
- The rate of urbanization is low in the three largest countries: 14% in Sri Lanka, 19% in Nepal, and 28% in Bangladesh.
- Agricultural workers have been declining as a proportion of the labor force, but they still account for three-fourths in Nepal, half in Bangladesh, and one-third in Sri Lanka.
- The informal sector accounts for 90% of the labor force in Nepal and 80% in Bangladesh, including two-thirds of nonfarm employment. In Sri Lanka, the informal economy makes up slightly more than 60% of employment, including half of nonagricultural employment.
- The economies of Bangladesh and Nepal operate at a factor-driven stage, while Sri Lanka is transitioning from a factor-driven to an efficiency- or investment-driven stage of economic development. Competitiveness indicators are low for Bangladesh and Nepal (except for Nepal's macroeconomic environment). Except for the macroeconomic environment, Sri Lanka appears well positioned to make the transition.
- Enterprise-based training is lowest in the South Asia region, particularly in Bangladesh and Nepal, compared with the rest of the developing world.
- The challenge of job generation domestically is offset partly by employment abroad. Remittances from work abroad have grown steadily in Bangladesh and Sri Lanka, averaging about 10% of gross domestic product (GDP). They jumped much more dramatically in Nepal and now account for just under a quarter of GDP.

IMPLICATIONS FOR TECHNICAL AND VOCATIONAL SKILLS

Young entrants to the labor market—1.5 million to 2 million annually in Bangladesh and 450,000 in Nepal—pose major challenges for job creation. Most will be forced to work in agriculture and in the informal sector. They will need technical–vocational skills to raise their productivity and incomes. Fortunately, labor market entrants will have increasingly higher levels of educational attainment, which will facilitate their acquisition of technical–vocational skills. Emigration for work will continue to be a major source of employment and income. The challenge is to raise the skill content of emigrant labor and therefore the financial returns to the individual and the country. National vocational qualification frameworks (NVQFs) could potentially benchmark skills standards and facilitate the upgrading of emigrant labor.³

³ At present, only Singapore seems to require verification of qualifications for immigrant labor.

Another challenge will be to replace the skills lost through workers migrating abroad. According to the Federation of Contractors' Associations of Nepal (FCAN), the construction sector is functioning as a training center for the Middle East and other labor-importing countries. About 90% of emigrants work in the construction industry abroad. FCAN states that there is no shortage of people, but rather a shortage of skilled people. Members of the association recruit unskilled people from remote areas and train them on the job. Initially, the workers are unproductive, even negatively productive through damage caused in the learning process. However, when they become skilled after about 2 years, they ask for a certificate from the employer and emigrate. The steady work and wages abroad are simply too attractive (interview with FCAN, Kathmandu, October 2011).

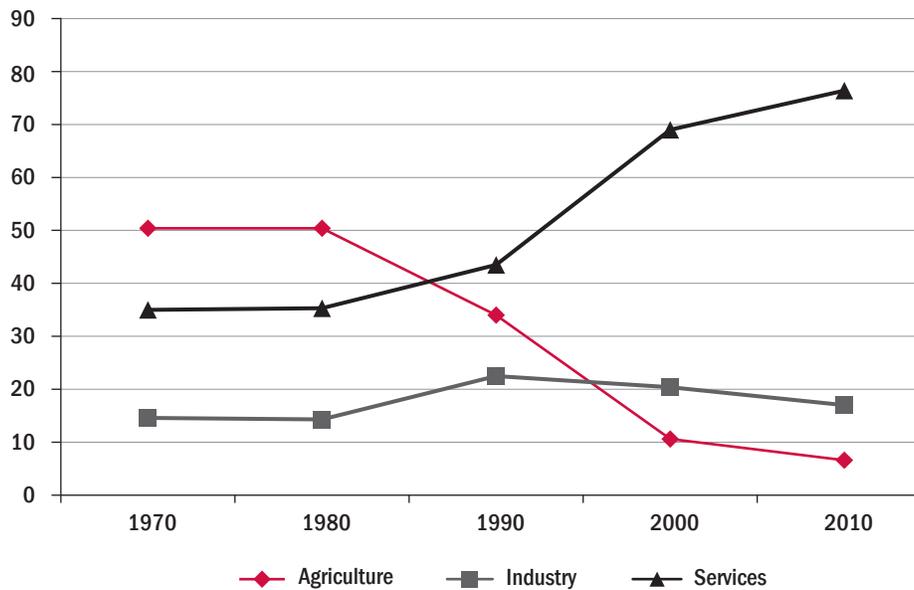
Experiences in East Asia show that careful government planning can be instrumental in linking education and TVET with economic strategies. The “development economies” of the People’s Republic of China, the Republic of Korea, Singapore, and Taipei, China used TVET as an integral instrument in their economic strategies at various stages of development. At the early stages (factor-driven growth and low-cost manufacturing), priorities were universal basic education and low-level vocational training to support low-cost manufacturing. Strong capacity was established for basic skills training. At the next stage (investment-driven growth), production concentrated more on high value-added goods and services. Priorities for education and training shifted to universal secondary education, extension of TVET—particularly at postsecondary junior colleges and polytechnics—and upgrading the workforce through adult and enterprise-based training. Training levies were established to stimulate enterprise training and fill skills gaps (ADB 2004a, 15–23; 2008a, 31–33).

TVET can also be harmonized with the economic policies in South Asia. Economic strategies in Bangladesh favor textiles and shipbuilding, for which training supplies need to be prepared. Nepal prioritizes tourism and agribusiness. In Sri Lanka, infrastructure and tourism are leading sectors along with growing information and communication technology (ICT) services. Analysis should start with a review of the skills implications of economic prospects, economic development policies, and plans, followed by policies to align skills supply and demand.

Sri Lanka faces a special challenge. The tight labor market and relatively high wages mean that Sri Lanka can no longer be competitive in certain industries, e.g., assembly-line work. This is already creating skills shortages; for example, garment factories face severe labor constraints—they cannot secure the additional workers they need even with ever-escalating wages. The country has no alternative but to seek increased productivity and higher value-added production. In view of the small, open economy of Sri Lanka, and the projected slow growth of the labor market, the country needs to improve its competitiveness in foreign markets to maintain its high growth momentum. It needs to transition from factor-driven stages of growth to an efficiency-driven stage in the global competitiveness framework. To do this, it must improve efficiency-enhancing factors significantly, including higher levels of education and training. There should be an increasing demand for higher technical skills if Sri Lanka hopes to achieve its development priorities. Skilled workers and technicians are required in increasing numbers to enhance the quality and efficiency of production and product development. Skills required in the labor market will likely become more complex, and therefore the potential exists for expansion and improvement of skills training (Sri Lanka Country Report [SLCR]).

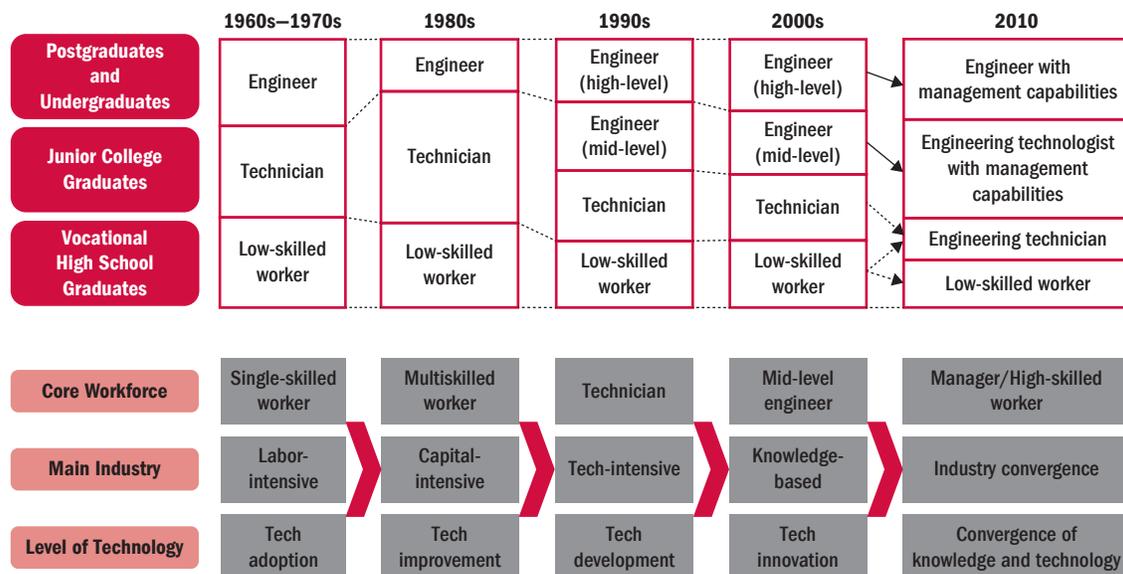
In many ways, Sri Lanka’s challenges are parallel to those in earlier decades of the Republic of Korea, which was forced to make the transition from export-led growth based on low-wage labor to higher value-added manufacturing and services. Figures 2 and 3 show the economic and labor market transition of the Republic of Korea.

Figure 2 Republic of Korea: Employment by Sector, 1970–2010 (% of total)



Source: Data from Dae-Bong Kwon. 2011. TVET in Korea: History of Challenges and Responses and the Future. Korean Research Institute for Vocational Education and Training. Presentation at the World Bank. 24 February.

Figure 3 Republic of Korea: Shift in Workforce Structure Caused by Technological Advances and Industrial Evolution



Source: Dae-Bong Kwon. 2011. TVET in Korea: History of Challenges and Responses and the Future. Korean Research Institute for Vocational Education and Training. Presentation at the World Bank. 24 February.

TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING SYSTEMS

Total identified enrollment in TVET is about 388,000 in Bangladesh, 84,000 in Nepal, and 124,000 in Sri Lanka (Appendix 3). Formal TVET tends to be lengthy (2–4 years per level) with relatively high educational entrance requirements, typically completion of 8–10 years of basic education. TVET enrollment is small in relation to general education: at the secondary level, 3.3% in Bangladesh and less than 1.0% in Nepal. Access is restricted to those with basic general education, which acts as a barrier for early school dropouts who want to access skills development. Correspondingly, little is spent on TVET as a percentage of education ministry budgets or of total government spending—1.2% of the Ministry of Education (MOE) budget and 0.2% of total government spending in Nepal, 2.6% of the MOE budget in Bangladesh, and 0.4% of total government spending in Sri Lanka. A high degree of centralization exists in the administration of TVET in all countries. A distinguishing characteristic is three apex organizations: the Ministry of Labour and Human Resources (MOLHR) in Bhutan, the Council for Technical Education and Vocational Training (CTEVT) in Nepal, and the Tertiary and Vocational Education Commission (TVEC) in Sri Lanka. There is little devolution of authority to the boards or managers of public training institutions. Public TVET provision is also characterized by a high degree of fragmentation among ministries: 22 ministries and departments provide training in Bangladesh, 10 in Nepal, and 21 in Sri Lanka. Private provision of training is growing in response to the limits of public provision. Private providers make up 95% of the training institutions in Bangladesh and contain 75% of enrollment; half the enrollment in Bhutan; and 62% of the training institutions and 29% of enrollment in Sri Lanka. In Nepal, the number of approved private training institutions grew from 3 in 1991 to 100 in 2000 and more than 450 in 2011. The TVET systems in Bangladesh and Sri Lanka are also characterized by low output of trained teachers and instructors and by high vacancy rates for instructors because of slow bureaucratic procedures for filling vacancies, weak supply, and unattractive salaries. Strong examination systems exist in two countries for formal TVET—the Bangladesh Technical Education Board (BTEB) and the National Skills Testing Board (NSTB) in Nepal. Sri Lanka has implemented a system of national vocational qualifications (NVQs) that stresses continuous assessment of competency-based skills. Other countries plan to do the same. Little information could be gleaned from the review about training for the informal sector.

TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING POLICIES AND PLANS

All these countries are in various stages of transition from a supply-led to a demand-led system of skills development (Appendix 4). Bangladesh, Bhutan, and Nepal have prepared national skills development policies. Two of the major policy initiatives have taken a long time to be approved—3 years in Bangladesh and 5 years in Nepal. The plans in some cases tend to push expansion over quality. Except for Bhutan, the policies are weakened by lack of a careful analysis of economic prospects and identification of their implications for skills. The policies and plans do not specify the cost implications of the measures proposed, so financial feasibility remains a question. Priorities were not selected among the myriad prescriptions to guide initial actions. Sri Lanka has gone more deeply into planning—by sector and by province. These sectoral and provincial plans could now be consolidated into a national plan of action.

2 Strengths and Innovations

Each of the three main countries in the review has extensive accomplishments and strengths in its system of technical and vocational education and training (TVET) (Appendix 5). These include expansion, organizational development, private training, strong examination systems, and key institutions for teacher training.

BANGLADESH

The TVET system in Bangladesh has many strengths: Some flexibility has been introduced into the public training system through nonregular short-term training on the basis of cost recovery. The Bangladesh Technical Education Board (BTEB) is a competent institution for skills testing. BTEB administers well-developed exit examinations that focus on the theoretical aspects of training. Some training providers have established linkages with industry. The polytechnic/monotechnic institutes provide industrial attachments during the seventh semester of the diploma course, and secondary school certificate - vocational programs (SSC [voc.]) supported by development partners have achieved several milestones, including drafting of the National Skills Development Policy (NSDP), establishment of eight industry sector councils (ISCs), and provision of access to 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 2011e, 1).

Excellent examples exist of industry initiatives in training—public-private partnerships in skills provision, including the Chittagong Skills Development Center; Bangladesh Garment Manufacturers and Exporters Association Institute of Fashion Technology; Bangladesh Knitwear Manufacturers and Exporters Association; and National Institute of Textile Training, Research and Design (Appendix 5, boxes A5.1 and A5.2).

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. The government recognizes the important role of private providers and awards salary subsidies to more than 1,000 private institutions. Several private providers of excellent quality exist, oriented mainly to disadvantaged youths and adults, such as the Underprivileged Children's Educational Programs and the Mirpur Agricultural Workshop and Training School (MAWTS) (Appendix 5, Box A5.3).

The technical training centers (TTCs) under the Bureau of Manpower Employment and Training (BMET) display several strong characteristics. TTCs are free to market their products and use the income generated.⁴ The second daily shift of attendance is based on cost recovery. TTCs to some extent are copying the workplace. For example, the centers do not follow the academic calendar, with its long breaks. No holidays are observed

⁴ In contrast, public vocational institutions under the Ministry of Education must return any income generated to the ministry.

except official government holidays (i.e., 20 days per year); institutions cannot afford time away from training for short programs. Posttraining counseling has been set up in all 38 TTCs. Records are now being kept of employment of graduates. Within 3 months of graduation, 50%–60% of the graduates have found employment. Managers of TTCs do not need to get headquarters approval for use of funds up to a certain level. The TTCs are also beginning to operate like businesses by selling products and services (Bangladesh Country Report [BCR]).

BHUTAN

On paper at least,⁵ the system of skills development in Bhutan has several strengths. The National Technical Training Authority was integrated into the Ministry of Labour and Human Resources (MOLHR) in 2003 as an apex organization. TVET functions are well organized, including standards and quality assurance, labor market information, and delivery. TVET also boasts a well-designed system of registration and accreditation of training providers. About 1,200 students are enrolled in private institutions, roughly the same as in public ones. The ministry has been providing instructor training programs for staff of private training institutes. Apprenticeship training is given to about 400 youths annually through 110 partner companies. A village skills development program has provided training to more than 1,200 villages in 19 districts. Technical advisory committees have also been established. A Bhutan Vocational Qualifications Framework has been developed through a consultative process with key stakeholders. Skills standards have been issued in four priority occupations (plumbing, masonry, auto mechanics, and construction carpentry), and competency-based curricula are being developed for the four trades. Vocational training institutes have been restructured to function as centers of excellence by focusing on sector-specific courses. Quality assurance is to be enhanced through international benchmarking of courses. The Human Resource Development Policy 2010 was approved with professional, technical, and vocational education as the highest priority within the education sector.

MALDIVES

One key strength of the Maldives is the widely recognized and respected Maldives Qualifications Authority (MQA). All training providers are subject to MQA accreditation. The National Certificate from the MQA is also required by employers before placing local applicants. The government is intensifying public–private partnerships by offering land and other investments to private companies to set up institutions in selected locations. One such partnership is under way in Lamu Atoll, where the Indian company Tata has agreed to set up a medical college as well as to develop a regional hospital. The government is also implementing a sizable skills training project: The Hunaru (local word meaning “skills”) Project is a 1-year initiative run jointly by the Ministry of Education and Ministry of Human Resources, Youth and Sport (MHRYS) that aims to use 70 training programs for 56 occupational areas to train 8,500 individuals. The government pays a fixed amount per student; both public and private institutions can apply to run these courses. In addition, students get a monthly stipend of 2,000 rufiyaa (around \$133) and the government is working to guarantee placement of these individuals after graduation. As expected, applications for some courses outstrip available slots, while less popular courses have few applicants. The interest of private institutions is strong to participate in this program, not only for profit purposes but also for altruistic reasons. Four months into operations, more than 2,200 students have been enrolled in 15 institutions. The program may be extended for another year.

⁵ No field investigation or local consultant was engaged in Bhutan. The findings are based on a desk study and have not been verified.

NEPAL

The following appear to be among the strong points in the Nepalese system of TVET:

- **Growing awareness of the importance of skills.** Awareness is growing among the population and policy makers about the importance of skills development—recognizing that general education alone does not provide the skills needed for employment. The employers’ federation is managing several trade schools, though without complete success (Appendix 5, Box A5.4).
- **The Council for Technical Education and Vocational Training.** The Council for Technical Education and Vocational Training (CTEVT) is both a strength and a weakness in the TVET system. In the positive sense, it has a staff of 936 dedicated to skills development through TVET. Created in 1989, it has expertise in the areas of teacher training (through the Training Institute for Technical Instruction [TITI]), TVET curriculum development, and skills testing (through the National Skills Testing Board [NSTB]). For example, it has developed 206 occupational profiles. The DACUM⁶ methodology is firmly entrenched and routinely used to develop curricula. A research and development department has been strengthened lately to carry out studies and evaluations.
- **Skills testing.** NSTB within CTEVT has grown tremendously in its capacity to provide skills testing for short-term vocational skills. From fewer than 100 certificates issued in 2000, the board tested and certified 25,000 people in 2010 (Nepal Country Report [NCR]). Within this context, Nepal has been providing recognition of prior learning (Appendix 5, Box A5.5).
- **The Training Institute for Technical Instruction.** TITI has a unique structure with an international reputation. It provides modular courses in management with special courses for private training providers, curriculum development specialists, and instructor training. It also provides long-term qualifications at the diploma level in technical instruction and a bachelor of technical education program affiliated with Kathmandu University. TITI received long-term support from the Swiss government from 1991 to 2007. Although some of its key staff have been lured away to work in local aid agencies and higher government positions, TITI remains a vital resource for capacity development in the country.
- **Private training providers.** Private training provision has grown substantially. Compared with 3 accredited private institutions in 1991, the number grew to 110 accredited institutions in 2000, and now more than 450 private institutions, which are termed “affiliated” institutions (NCR), have been approved by CTEVT.
- **Performance-based contracts.** Nepal may be unique in its experience with performance-based contracting, such as that used by the Employment Fund, and incentives for employment of graduates by other aid agencies including the Asian Development Bank (Appendix 5, Box A5.6).
- Four externally assisted projects have rebalanced training provision by concentrating on short-term skills development for disadvantaged groups (Skills for Employment Project, Employment Fund, United States Agency for International Development’s Education for Income Generation Program, and the new World Bank-supported Enhanced Vocational Education and Training Project).

SRI LANKA

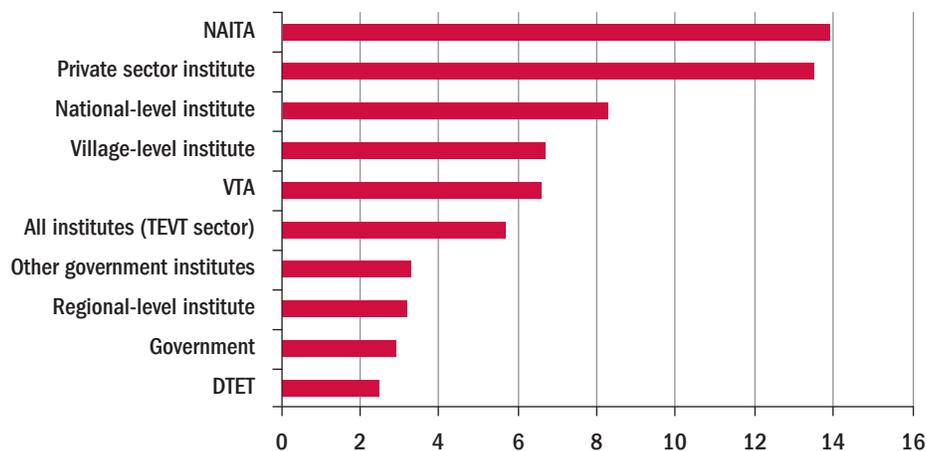
The TVET sector has made significant progress over the past 3 decades. The country has achieved universal adult literacy, and 80% of those employed have completed or gone beyond primary education. The disparate public providers of TVET—Department of Technical Education and Training (DTET), Vocational Training Authority (VTA), National Apprenticeship and Industrial Training Authority (NAITA), and National Youth Services Council (NYSC)—have all been brought under one administrative roof: the Ministry of Youth Affairs

⁶ DACUM stands for “Develop A Curriculum,” a methodology developed at Ohio State University on the sequence of steps from occupational analysis through validation of training content in which industry representatives are actively consulted.

and Skills Development (MYASD). Government policy is strongly supportive of TVET, as indicated by backing for TVET in the Mahinda Chinthana program (2006–2016). Coverage of public TVET is widespread at the certificate level, including more than 200 institutions located in rural areas. The apprenticeship system, in contrast with many other countries, functions well and extensively in Sri Lanka (Appendix 5, Box A5.7). Important foundation work has been laid to establish labor market information and management information. Competency-based training has been introduced at the certificate level. The government is making a major effort to shift training provision from a supply to a demand orientation. The main vehicle for doing this is the NVQ system, which has been introduced at both the certificate and diploma levels based on employer definition of occupational standards and curricula (Appendix 5, Box A5.8). TVET plans have been produced for 17 subsectors of the economy. TVET provincial plans have been completed for two provinces. A series of career guidance centers has also been established (Appendix 5, Box A5.9). In consonance with overall low unemployment, employment rates for TVET graduates appear to be relatively high. The University of Vocational Technology (UNIVOTEC), which allows GCE - O Level or General Certificate of Education Ordinary Level graduates to earn a bachelor of technology degree, has been created. More than 1,100 nongovernment training providers have been registered with the Tertiary and Vocational Education Commission (TVEC), and the regulatory framework does not appear to be overly restrictive. Some 735 training programs have been accredited for delivery by specific institutions. A model association has been established to support private trainers (Appendix 5, Box A5.10). As in Bangladesh, nongovernment organizations (NGOs) have achieved success in training disadvantaged groups (Appendix 5, Box A5.11). Several centers of excellence are making an impact beyond the numbers of people trained (Appendix 5, Box A5.12).

An economic analysis of TVET institutions by type showed highly positive returns in general, and in particular for NAITA and private training institutions. The benefit (defined as income following completion of training) divided by cost per trainee averaged 5.7, ranging from 2.5 for DTET institutions to 13.5 for private institutions and 13.9 for NAITA (Figure 4).

Figure 4 Sri Lanka: Benefit-Cost Ratios by Type of Institution, 2009



DTET = Department of Technical Education and Training, NAITA = National Apprenticeship and Industrial Training Authority, TVET = technical and vocational education and training, VTA = Vocational Training Authority.

Note: The order of the results is interesting, but the numbers should be treated with caution. The estimates are associated with several caveats: (i) methodological problems with total financial and economic cost estimates, (ii) incomplete economic benefits, and (iii) application of a zero discount rate.

Source: EML Consultants. 2009. Quantification of Economic and Social Benefits Contributed by the TVET Sector, as presented in the Sri Lanka Country Report.

3 Economic Relevance of Skills Training

Symptoms of economic irrelevance of training include mismatches in the labor market, low employment rates, and employer complaints about on-the-job performance of graduates from training institutions.

MISMATCHES

Mismatches between technical and vocational education and training (TVET) outputs and employer needs 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 acquired may not match industry requirements (e.g., in Bangladesh, ADB 2008c, 2).

EMPLOYMENT RATES

Graduate destination or tracer studies are an excellent tool to ascertain the rate of absorption of TVET graduates into the labor market. Tracer studies showed relatively low levels of employment for TVET graduates in all three principal countries.

Bangladesh

A World Bank tracer study involving 2,300 graduates of public and private TVET institutions in 2003 found employment rates to be low (World Bank 2007, 31). The proportion of those employed was highest among the higher secondary certificate (vocational) (HSC [voc]) graduates at 30%, followed by diploma graduates at 21% and basic trades graduates at 18%. These courses, however, account for only a small proportion of total enrollment. The lowest proportions of those employed were among the secondary school certificate (vocational) (SSC [voc]) graduates (4%) and HSC (business management) graduates (5%), who tended to pursue higher education. These courses appear to be catering to a clientele who can afford to pursue higher education and have strong aspirations for white-collar jobs. Across all the respondents, only 9% were employed, 45% were pursuing higher education, and 46% were unemployed. Of those who were employed, about 38% took less than 6 months to get a job, and another 16% took up to 1 year. The employment outcomes of graduates of the public and private institutions indicated little difference (Bangladesh Country Report). According to another source, the unemployment rate for technical–vocational graduates tends to be above that of general graduates (Dohmen 2009, 20).

Nepal

The performance of the current TVET system is not encouraging in several respects. The employment rate of graduates varies substantially by level and by occupational area. The available data from various sources at

MOE, CTEVT, and government literature reveal that employment of “skills training” graduates is between 30% and 50%. Employment of formal TVET graduates is 60% on average. Normally, sustained employment of TVET graduates should be at least 80% for a normal return on investment and considering the productivity of the nation (NCR).

However, low employment rates do not apply for all TVET programs. For those with a certificate in nursing, employment is almost 100% (CTEVT 2010a), considering both in-country and foreign employment. Similarly, for civil engineering subjects, the employment situation is much better (CTEVT 2010a) now than in the past: Average employment is 67% for trained graduates and more than 70% for civil engineering graduates. An overview of employment rates of graduates of different long-term TVET programs and courses, as illustrated in the *TVET Journal* (CTEVT 2010b) and other literature, reveals that in health trades an average of 62% employment has been recorded, in engineering trades an average of 55%, in agricultural trades an average of 46%, and in information technology trades an average of 54%. These figures are too low to justify investment in TVET. As far as short-term vocational skills training is concerned, an average of 80% of immediate employment has been reported in different projects’ literature (e.g., the Skill for Employment Project records 90%; the Employment Fund records 85%) (NCR).

Sri Lanka

Numerous tracer studies, somewhat dated, have been undertaken with different findings. Table 1 shows employability of TVET graduates across the major public TVET providers. The figures are outdated, as unemployment rates overall have been reduced dramatically, averaging only 4.9% of the labor force in 2011. However, the table shows the relative performance of three major providers at the time: (i) the Department of Technical Education and Training (DTET); (ii) the National Apprenticeship and Industrial Training Authority (NAITA), closely linked with employers, had the best employment rates; and (iii) the Vocational Training Authority (VTA), dealing with rural areas, had the greatest challenge in generating employed graduates.

Table 1 Sri Lanka: Principal Outcomes of Tracer Studies of TVET Graduates, 2002

Employment Status	DTET	NAITA	VTA
Wage employment	49.3	62.2	14.3
Self-employment	6.1	9.6	14.3
Employed, other categories of work	10.7	...	...
Unemployed	33.9	28.2	62.7
Not seeking a job	...	...	8.7
Total	100.0	100.0	100.0

... = no response, DTET = Department of Technical Education and Training, NAITA = National Apprenticeship and Industrial Training Authority, TVET = technical and vocational education and training, VTA = Vocational Training Authority.

Source: Sunil Chandrasiri. 2010. *Effect of Training on Labor Market Outcomes in The Challenge of Youth Employment in Sri Lanka*. Washington, DC: World Bank, as appears in the Sri Lanka Country Report.

A study by the National Youth Service Council (NYSC) in 2005 showed weak linkages between training and employment. About three-fourths of trainees were employed after training and one-fourth unemployed, with another 27% stating that training was not helpful in finding a job. About one-third of those employed were working in fields other than that of their training. A study by VTA (2009) on village-level training revealed that just 40% of trainee graduates were employed in 2004–2005, and only 22% were employed in the trained trade. A recent study (Bandara et al. 2010) followed the employment of technical graduates in electronics, as industrial electricians, as fitters/mechanics, and in welding under the Department of Technical Education and Training

(DTET), finding that 55% of graduates were employed full time and 11% part time, i.e., two-thirds had some form of employment. The remaining one-third of graduates were unemployed. Some NGOs seem to have had higher success rates even when training disadvantaged populations (Appendix 5, Box A5.11).

EMPLOYER VIEWS

Bangladesh

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 that have little market demand while not training for newer trades with substantial needs (World Bank 2007, 10). The Investment Climate Assessment of 2008 reported that one-fourth of employers in cities cited shortages of skills as problematic. Employers also complained of the low level of skills being produced by the TVET sector (World Bank 2010, 87; Bangladesh Country Report).

Maldives

Employers in the Maldives prefer migrant labor over local labor. The reasons for this include (i) lack of interest/unwillingness on the part of Maldivian urban youths to work in tourist resorts; (ii) the widespread preference for white-collar jobs, and reluctance to take on anything other than such a job, especially by Maldivians who have completed their general certificate of education, ordinary level; (iii) the inability of married females and females with children to work in tourist resorts or isolated uninhabited islands for religious and cultural reasons; (iv) a mismatch between the requirements and needs of employers and the training that is being provided; and (v) a need to improve the work ethics among Maldivian employees (Maldives Country Report).

Nepal

Employers asserted that the knowledge, competencies, and work ethic demonstrated by TVET graduates are much lower than they expected owing to the poor quality of training in most training institutions. This observation applied less in the public sector than the private sector due to constraints in infrastructure and investment. As a result, graduates are having difficulty finding jobs in the occupation for which they were trained (NCR).

A survey conducted in 2006–2007 among more than 25 employers found the following gaps: TVET programs are not based on industry and job market needs (72%); training providers do not implement job-oriented training (54%); training providers do not have industry-experienced instructors to provide good instruction (50%); training curricula do not specify nor require on-the-job training (35%) (CTEVT 2010b). Similarly, the employers also identified deficiencies in new graduates in teamwork, attitude, honesty, and work discipline (NCR).

Sri Lanka

A survey of 530 employers in 2009 found that 63% were satisfied with the skills acquired, ranging from 56% for DTET institutions to 66% for NAITA and private institutions to 72% for VTA institutions (EML Consultants 2009). The most frequent complaint by employers was insufficient practical training.

The principal causes of irrelevance in training include lack of information about labor market needs, weak employer involvement, and rigid supply responses. These factors are explained in the sections that follow.

LACK OF LABOR MARKET INFORMATION

A demand-responsive system of skills training must start with signals and information about market demands.

Bangladesh lacks mechanisms for labor market analysis. Labor market information is not collected systematically (World Bank 2000, 9; ILO n.d., 5). Insufficient feedback from the labor market exists to change and adapt course offerings (ADB 1995, 129). Courses tend to be offered in response to social demands, not based on labor market surveys and analysis. Mechanisms like labor market analysis and comprehensive tracer studies are used only rarely for improving the TVET system. There is no mechanism for assessing either domestic or global labor market needs and then aligning curricula. As a result, curricula do not reflect adequately up-to-date core technical skills, specific sector skills, and soft skills (World Bank 2010, 100–101; BCR).

Training needs assessment in Nepal is weak and often absent; the labor market information system is also weak and is unable to provide up-to-date labor market information to assist training program selection. The absence of a reliable labor market information system and its proper documentation have also constrained the relevancy of TVET (NCR).

Sri Lanka has done better than the other two principal countries in establishing labor market information, at least on the demand side. Information coverage is better on market demands, owing to continuous efforts made by the Labor Market Information Unit of TVEC, whose biannual publication compiles both primary and secondary data on employment and unemployment. The primary sources include analysis of job advertisements published in newspapers, while the secondary sources include information collected from several organizations—the Department of Census and Statistics, Board of Investment, and Foreign Employment Bureau. However, there appears to be no systematic comprehensive survey of firm-level training in Sri Lanka. Statistics and management information tend to be inadequate about training supply. The absence of an integrated management information system (MIS) encourages the government to continue with the existing regulatory-oriented system of management, rather than granting more autonomy to boards of management at training institutions (SLCR).

Sri Lanka has also established career guidance and counseling for potential trainees in the TVET system. This should help greatly in the transition from training to the world of work (Appendix 5, Box A5.9).

WEAK EMPLOYER INVOLVEMENT

Employers know best what skills are needed in enterprises, even though they may not be able to forecast job openings more than a few months ahead. The best systems of TVET therefore exhibit close employer involvement in policy making, planning, governance, standards, curriculum development, and assessment of trainee performance, as well as feedback on system performance. In short, relevance lies with the interaction between the industry and the TVET providers (NCR).

Bangladesh

The long-standing cause of TVET market irrelevance is insufficient linkages between supply and demand, i.e., between training institutions and employers (World Bank 1990, 44; 2000, 9). A major component is conspicuously missing: involvement of private sector representatives in existing institutional arrangements (ADB 2008c, 28–29). There are insufficient links between TVET institutions and employers, resulting in slow and inadequate responses to market developments.

At the central level, employers have no scope for participating in policy development, developing curricula, or providing trainers (World Bank 2007, 37). The Directorate of Technical Education (DTE) does not involve industry representatives in decisions on training. There is no involvement of the private enterprise sector in developing teachers. BTEB does not involve industry in setting standards, developing instructional materials, or testing and certification, except occasionally for comment and inputs. This increases gaps between demand and supply of skills. BTEB has 14 board members, but none are from industry or employers. Employers have virtually no scope for participating in policy development, curriculum development, or training of trainers. DTE and BTEB normally do not engage with employers in setting policy, developing curricula, or vetting accreditation procedures. Courses are not designed in consultation with employers and do not reflect the standards and needs of the labor market (World Bank 2010, 27, 100–101).

At the institutional level, insufficient links with employers result in slow and inadequate response to labor market developments. Training institutions do not carry out occupational analysis of skills in demand in their localities. At the diploma level, the private sector has almost no role to play in the management of polytechnics in either administrative or academic councils. No polytechnic has a position of training and placement officer, nor any industry liaison cell, to coordinate the training of students or job placement, organize job interviews, track alumni, or facilitate the training of teachers in industry or of industry personnel (World Bank 2010, 103; BCR).

The apprenticeship training system is moribund. Until recently, there were only 56 registered apprentices in the entire country (compared with 80 employees in BMET's apprenticeship wing).

However, some potential major improvements have been introduced recently. Four industry sector councils (ISCs) have been established for occupational standards and curricula (leather, transport, agro-food, and ICT) under the European Union/International Labour Organization (ILO) TVET Reform Project and four industry sector working committees formed and functioning under the ADB-financed Skills Development Project (light engineering, construction, ready-made garments, and the informal sector) (BCR).

Bhutan

The Ministry of Labour and Human Resources (MOLHR) has established technical advisory committees, but the extent of their activity is unclear. However, two successful programs involve enterprises in providing training to young school leavers: the Apprentice Training Program (ATP) and the Dual Training System. Both were implemented under the Basic Skills Development Project with ADB support. The ATP offers grade 10 graduates the opportunity for 1–2 years of training in 110 partner companies. Costs (e.g., remuneration) are shared equally between MOLHR and the enterprise. About 400 trainees graduate annually from the attachment program. Employers have expressed preference for ATP graduates. The Dual Training System provides opportunities for those who have completed only grade 8. It involves attendance for 1 year in a vocational training institution, followed by 1 year in an apprenticeship in a private enterprise. Again, costs of the apprenticeship are shared equally between the government and the enterprise (Bhutan Desk Report [BDR]).

Nepal

TVET is characterized by weak industry involvement. Admittedly, the industry sector is not highly developed in Nepal, accounting for just 16% of GDP and about the same proportion of the labor force. Still, employers tend to know best what skills are needed in the organized labor force and should be consulted regularly. Nepalese employers tend to be involved only peripherally in the governance of the TVET system. Employers and industry representatives have proportionately little influence in CTEVT governance, accounting for just 4 of 24 members of the CTEVT assembly and without any earmarked positions in the 9-member Executive Council (NCR). The only significant linkage was initiated by the Federation of Nepalese Chambers of Commerce and

Industry (FNCCI), which started the concept of trade schools that offer vocational training in close tandem with industry (Appendix 5, Box 5.4). Except for development of some curricula under the DACUM process in CTEVT, the involvement of industry in design and implementation of TVET is rare. Collaboration and partnership between training providers and employers (business and industries) is missing to initiate work-based learning opportunities for trainees (NCR).

Sri Lanka

Industry involvement appears to be greater in Sri Lanka than in the other two principal countries. NAITA has close involvement with enterprises through its apprenticeship programs (Appendix 5, Box A5.7). TVEC has significant enterprise participation in its board: 8 of 17 members. Generally, however, there is insufficient employer involvement in TVET planning and delivery, including internships. TVEC's efforts to ensure overall coordination of the sector have led to increased private sector participation in policy making and governance. For example, TVEC has established sector policy and training advisory councils for seven industry subsectors with a view to seeking guidance from employers on skills requirements (SLCR). Moreover, employers are involved in the definition of occupational standards as part of the development of competency-based training under the NVQF system, but the time required has tended to limit their participation.

Table 2 presents a summary of industry participation in the various aspects of skills development in the three main countries.

RIGID SUPPLY RESPONSE

A demand-responsive system of skills training requires training provision that is flexible and able to adjust rapidly to changes in market demand.

Bangladesh

TVET in Bangladesh tends to be unresponsive to market changes owing to structural and administrative rigidities. Lack of supply responsiveness is largely the result of lengthy, inflexible, formal training programs and excessive administrative centralization in the 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., 5).

Curriculum development, the introduction of new courses, and closing of obsolete courses are rigid and time-consuming. The government is unable to change curricula quickly (i.e., introduce new courses, expand those in demand, and reduce or close those for which demand has slackened) to keep up with technological changes in enterprises (World Bank 2000, 9). Trade programs in polytechnics, HSC (voc), and SSC (voc) tend to be outdated and are generally reviewed piecemeal once in 5–7 years (World Bank 2010, 101). For example, training in agriculture has been in high demand (horticulture, poultry, dairy, agro-based food, aquaculture), and training in leather making has been suggested and planned for more than 10 years, but has failed to materialize (World Bank 2007, 36).

The heads of training institutions must follow uniform training programs and cannot alter curricula to meet local circumstances—in short, there is little delegation of authority to heads of training centers (ADB 1995, 127, 132; World Bank 2000, 7). Due to existing administrative rules, such as centralized hiring, it is difficult for a public TVET institution to respond to emerging market needs for new programs (ADB 2011e, 2; BCR).

Table 2 Public-Private Partnerships: Level and Type of Enterprise Participation in Technical and Vocational Education and Training by Country

Function	Topic	Country		
		Bangladesh	Nepal	Sri Lanka
Governance, policy, analysis, and planning	Participation in governing bodies	Ten of 36 members of NSDC are from industry or private sector associations. No employers sit on the BTEB.	Minimal—only 4 of 24 members of CTEVT Assembly and none earmarked in Executive Council	Substantial—all 14 NAITA Board members from industry. Nearly half of TVEC board members are from the private sector. Minimal in other organizations
	Design of TVET policies	NSDC rarely meets, so few opportunities to influence policy. However, employers are consulted in the development of the National Skills Development Policy.	Employers consulted in development of TVET Policy 2007	Substantial in NAITA, moderate through 7 SPTACs, minimal in other agencies
	Assessment of labor market needs			Substantial in NAITA, minimal in others
Standards and curriculum development	Development of standards	Participation in eight industry sector councils or sector working committees	Moderate—through DACUM process	Substantial in NVQF and SPTACs
	Participation in curriculum development	Moderate—intended through industry sector committees	Moderate—through DACUM process	Substantial in NAITA's 24 industry advisory committees
Training delivery	Enterprise use of TVET providers	Preference for private providers	Minimal	Minimal
	Provision of internships in enterprises	Moderate, ad hoc basis	Moderate, ad hoc basis	Substantial, arranged by NAITA
Training finance and resources	Financial contributions to TVET system or institutions	Minimal, except for industry-created institutions (e.g., CSDC)	Minimal, except for FNCCI trade schools	Minimal
	Subsidizing training fees for individuals	Minimal	Minimal	Minimal
	Provision of part-time instructors	Minimal	Minimal	Minimal
	Provision of used equipment or training materials	Minimal	Minimal	Minimal
Trainee assessment	Participation in assessment of trainees	Minimal—done by BTEB	Minimal—done by NSTB	Substantial in NAITA, minimal in others
Employment of graduates	Assistance in guidance and counseling	No placement offices at training institutions	Minimal	Minimal—government responsibility
System assessment	Feedback on quality and competence of graduates	Ad hoc through surveys	Ad hoc through surveys	Only in NAITA

BTEB = Bangladesh Technical Education Board, CSDC = Chittagong Skills Development Center, CTEVT = Council for Technical Education and Vocational Training, DACUM = Development of a Curriculum, FNCCI = Federation of Nepalese Chambers of Commerce and Industry, NAITA = National Apprenticeship and Industrial Training Authority, NSDC = National Skills Development Council, NSTB = National Skills Testing Board, NVQF = national vocational qualifications framework, SPTAC = sector policy and training advisory council, TVEC = Tertiary and Vocational Education Commission, TVET = technical and vocational education and training.

Note: In Bhutan, employer involvement is focused on participation in technical advisory committees and provision of apprenticeship places for the Attachment Program under the Apprenticeship Training Program.

Sources: Estimated from country reports.

Nepal

Training provision tends to be largely supply driven, based on the allocated budgets of public training providers and available staff and equipment (NCR). Most of the training programs are designed based on the available trainers, equipment, and facilities within the training centers without considering the changing demand of skills and labor market needs. Most of the TVET programs, especially in the public sector, are target oriented with a typical bureaucratic top-down approach to training. Training curricula are rigid and are not regularly updated as per the changing needs of the labor market. Old and inflexible training curricula are not able to respond to the rapidly changing requirements of the labor market. The centralized decision making impedes an immediate response to the emerging local human resource needs. The centralized management system puts too many restrictions on introducing new programs or revising the old ones (NCR).

Sri Lanka

Supply responsiveness appears to be an issue, as TVET institutions have little capacity to make quick responses to labor market changes. Poor responsiveness to industry demands is demonstrated by the limited number of new courses developed over time (Government of Sri Lanka 2011a, 41).

4 Access and Equity in Skills Provision

As previously stated, overall access to technical and vocational education and training (TVET) is limited for the population as a whole as well as at the secondary and postsecondary levels. TVET enrollment amounts to less than 1% of total secondary school enrollments in Nepal and about 2.4% in Bangladesh. The proportion of upper secondary school children who receive vocational education is extremely low compared with countries in East and Southeast Asia. The rate in South Asia—1.2% overall—compares unfavorably with the rate of 43% in the Republic of Korea and 26% in Japan (NCR).

Entry barriers in Bangladesh tend to discriminate against disadvantaged groups who fail to complete basic general education. The disadvantaged generally lack access to skills acquisition. The system does not serve the underprivileged (rural poor, child laborers, women, informal workers, people with low levels of instruction) due to its rigidity and high entry barriers (ILO n.d., 5). The main clientele for formal TVET consists of young adolescent males who complete grade 8, can afford to stay more years in school, and have strong white-collar job aspirations. The lowest minimum entry requirement, grade 8, automatically excludes the large majority who do not achieve it (ADB 2008c, 3, 29). Underprivileged youths tend to be screened out of the educational system before qualifying for entry into vocational training (World Bank 2000, 10).

However, several world-class domestic nongovernment organizations (NGOs) are providing technical and vocational training for the underprivileged in Bangladesh (Appendix 5, Box A5.3).

In Nepal, until recent support through externally financed projects, access to skills training was essentially for males who had passed the school leaving certificate. This excluded the majority of people who dropped out of school before grade 10. The majority of youths who drop out of school education are from disadvantaged groups: underprivileged castes (Dalit), indigenous people (Janajati), females, and those from remote areas. There has been no major effort to provide skills development for people who are barely or not literate. TVET was almost exclusively delivered through long-term programs of 2–3 years. However, continued external support for the disadvantaged is not assured beyond current projects (NCR).

Similarly in Sri Lanka, available evidence points to the need to introduce TVET programs targeted at occupations that absorb individuals with low educational attainment (SLCR).

INCOME INEQUALITY

In Bangladesh, courses have remained inaccessible to the urban poor because (i) the entry requirements for grade 8 are too high and (ii) courses are too long (1–2 years) for the poor to stay away from remunerative work (ADB 1995, 138; BCR).

The same case applies to Nepal. Inadequate levels of general education among the poor and disadvantaged tend to deprive them of the opportunity to attend TVET programs, most of which are expensive and unaffordable for the poor and marginalized anyway. Fees, entry qualifications, age, delivery approach, geographical barriers, and inadequate support and encouragement tend to limit the access of low-income people to TVET. Potential loss of income (the opportunity cost) further discourages the poor and disadvantaged from undertaking further training and education (NCR).

In Sri Lanka, TVET enrollment by income group cannot be assessed due to the paucity of information. The influence of low household income over TVET completion rates can be seen though, especially in low-income districts such as Badulla and Hambantota. Some of the recent tracer studies have identified financial and family problems, inadequate allowance, and transport difficulties as major causes for high student dropout rates (SLCR).

GENDER INEQUALITY

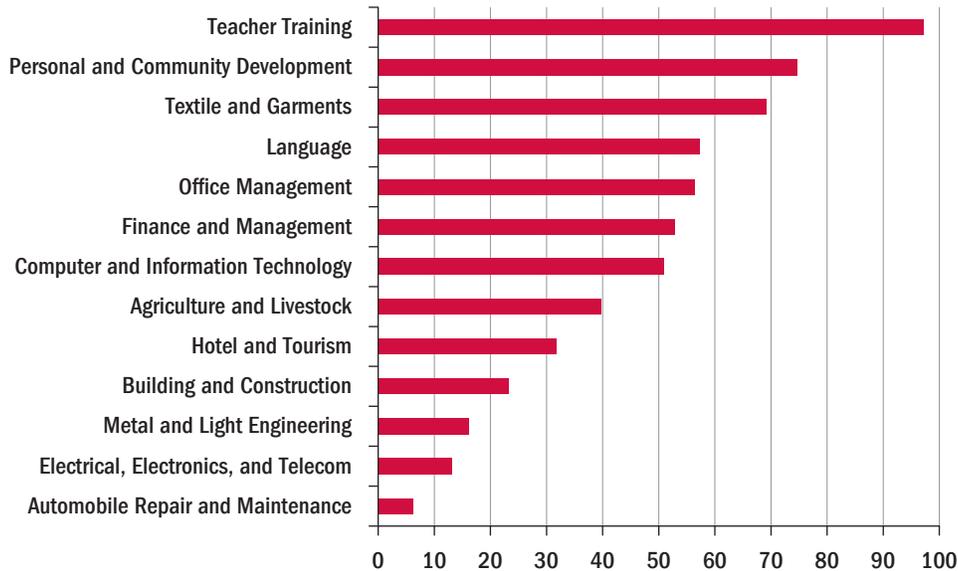
In Bangladesh, most training programs correspond to male-dominated trades. Only about one-quarter of total TVET enrollments are female. Few girls are being provided the opportunity to learn skills needed for formal sector employment. Reasons include lack of hostels and secure transport, as well as traditionally low demand by employers for female workers. Women in the labor market have few places where they can receive training for raising their incomes through productive activities (World Bank 2000, 10; ADB 2008c, 29; BCR).

Gender bias also exists in the placement of female students. More than 90% of female students are enrolled in private institutions, paying fees, while relatively more male students are enrolled in public institutions and pay little in fees. Thus, male TVET students receive a public subsidy far larger than that of female students. Only 7% of all females studying in formal TVET programs are enrolled at public institutions, while 93% are at private ones. The majority of students (57%) at private institutions are female, while only one in six students (17%) in public institutions is female. Moreover, the costs per student of almost all women's polytechnics are low in comparison with men's polytechnics. These limited funds for the women's polytechnics suggest that the share of funds spent for female students is even below the already limited share of female students (Dohmen 2009, 8, 35, 45, 63).

In Sri Lanka, female participation in TVET in 2009 was 41%. This proportion, however, varies from sector to sector within a range of 6%–100% (Figure 5). For example, female participation is 100% in teacher training; 6% in automobile repair; and 12% in electrical, electronics, and telecommunications. Personal and community development, garments, and office management are 73%, 69%, and 56% female, respectively. Officially, there is no gender bias in recruitment to TVET programs, but marked gender stereotyping still exists (SLCR).

Female students who wish to undergo vocational training are encouraged to register for “traditionally feminine” courses such as hairdressing, beauty culture, secretarial, etc., while male students are expected to register for courses in welding, automobile technology, machining, etc. It is only in the field of information and communication technology (ICT) that a reasonable gender balance (i.e., 51% females) exists. There is no need to “push” females into “traditional male occupations” against their will merely in order to achieve gender balance in TVET, but equal opportunity should be provided (SLCR).

Figure 5 Sri Lanka: Female Enrollment as Percentage of Total Enrollment by Program



Source: Calculated from Table 2.5 in ADB. 2011b. Innovative Strategies in Technical and Vocational Education and Training (TVET) for Accelerated Human Resource Development in South Asia: Sri Lanka Country Report. Draft. May. Consultant's report. Manila (TA 6337-REG).

GEOGRAPHICAL INEQUITIES

In Bangladesh, most training institutions are located in urban areas, which account for only about 20% of the total population. Moreover, strong regional imbalances exist. The share of students enrolled in private institutions is far higher in the poorer regions than in regions with higher average incomes. This is inequitable, because students must pay a high proportion of total costs in private institutions through tuition and fees, whereas public institutions are virtually free (Dohmen 2009, 10–11; BCR).

In Nepal, the majority of youths have difficulty accessing TVET programs owing to the heavy concentration of facilities in urban and semi-urban areas and the inequitable distribution of development initiatives by the government throughout the country. So far, only 50 of 75 districts have been covered by the technical schools of the Council for Technical Education and Vocational Training (CTEVT) and its affiliates (NCR).

Sri Lanka data reveal low TVET enrollment in provinces with relatively high poverty levels (Table 3). Sabaragamuwa had a 27% poverty rate but only 6% of the total TVET enrollment. The comparison in Uva was 24% versus 6%, and in Central Province 22% versus 10% (SLCR), respectively.

VERTICAL MOBILITY

One further aspect of equity pertains to horizontal and vertical mobility: the chance trainees have to progress up the ladder of skill qualifications compared with their counterparts in general education. Trainees often find it difficult to reenter the general education system, or to gain access to higher education institutions based on

Table 3 Sri Lanka: Public Technical and Vocational Education and Training Provision by Province, 2009

Province	TVET Enrollment (% total)		% GDP 2008	Poverty as % of Population (2006/07)
	Female	Total		
Western	22	31	45.4	8
Southern	20	15	10.6	14
Eastern	14	13	5.5	11
Central	11	10	9.9	22
Northern	7	7	2.9	...
Sabaragamuwa	6	6	6.4	27
North Western	8	6	10.0	15
Uva	7	6	4.6	24
North Central	7	5	4.7	14
Total	100	100	100	15.2

... = data not available, GDP = gross domestic product, TVET = technical and vocational education and training.

Source: Table 4.15 in ADB. 2011b. Innovative Strategies in Technical and Vocational Education and Training (TVET) for Accelerated Human Resource Development in South Asia: Sri Lanka Country Report. Draft. May. Consultant's report. Manila (TA 6337-REG).

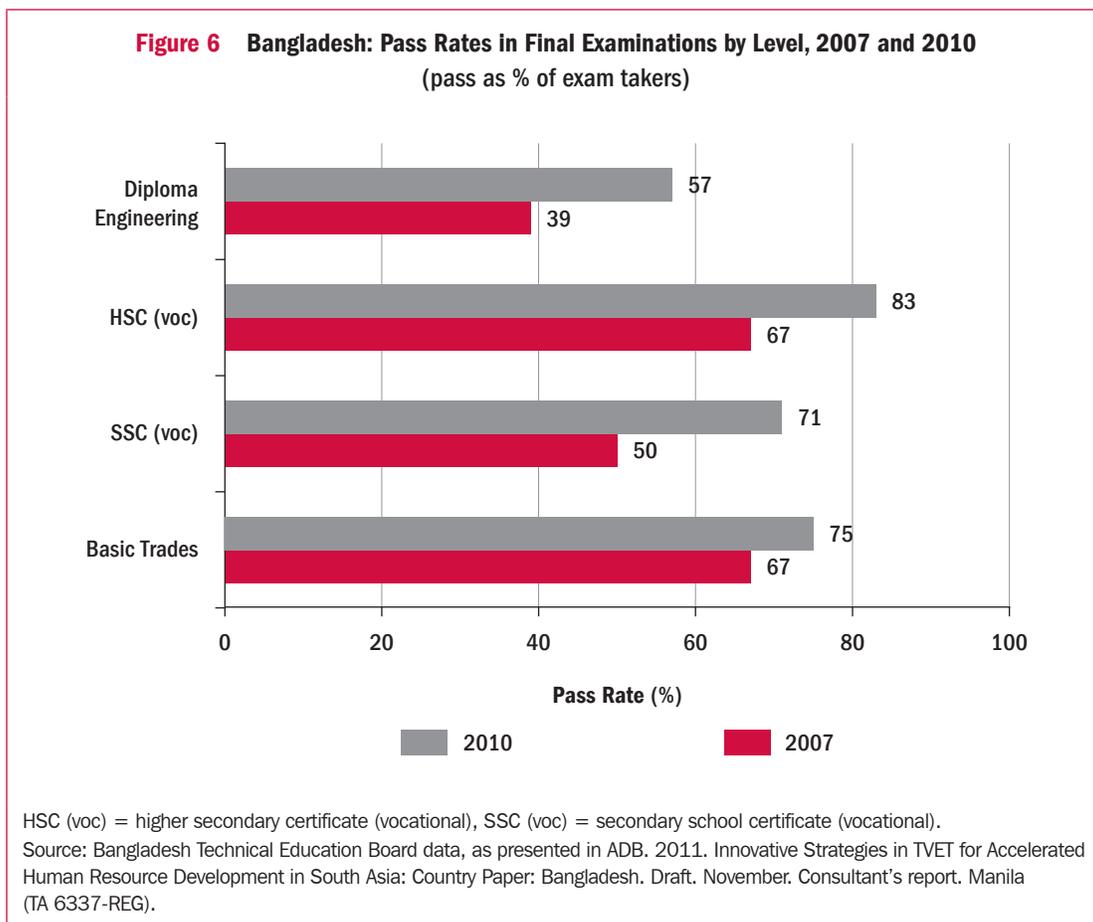
the technical–vocational training they have received. Diploma graduates are typically blocked from entrance to engineering faculties of universities. In Nepal, only restricted provision is available for deserving graduates with a technical school leaving certificate to access technician certificates and postsecondary diplomas. Access of diploma holders to bachelor degree programs at universities is strictly limited (NCR). Lack of vertical articulation was a major reason for the establishment of the University of Vocational Technology (UNIVOTEC) in Sri Lanka. One way to provide vertical mobility is through equivalencies, such as assessment of prior learning (Appendix 5, Box A5.5).

5 Quality of Training Provision

This chapter evaluates training quality according to outputs, inputs, and processes.

OUTPUTS

Low performance of candidates on terminal examinations is symptomatic of low quality.⁷ Among the three principal countries, Bangladesh has the most extensive information about pass rates, compiled by the Bangladesh Technical Education Board (BTEB). From these data, it is possible to compare performance by level, and within levels by gender and by institutional ownership (Figure 6).

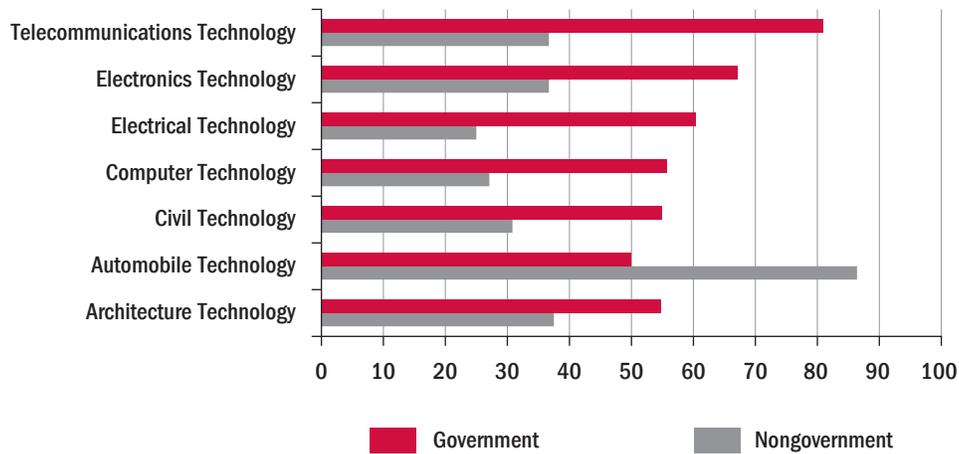


⁷ Except for basic trades, the examinations tend to cover mainly theory, with little emphasis on practical skills.

Improvements were registered at all levels between 2007 and 2010, but more than 4 of 10 candidates failed the diploma in engineering examination.

Except for automotive technology, the performance of trainees in private institutions was much poorer than in public institutions (Figure 7).

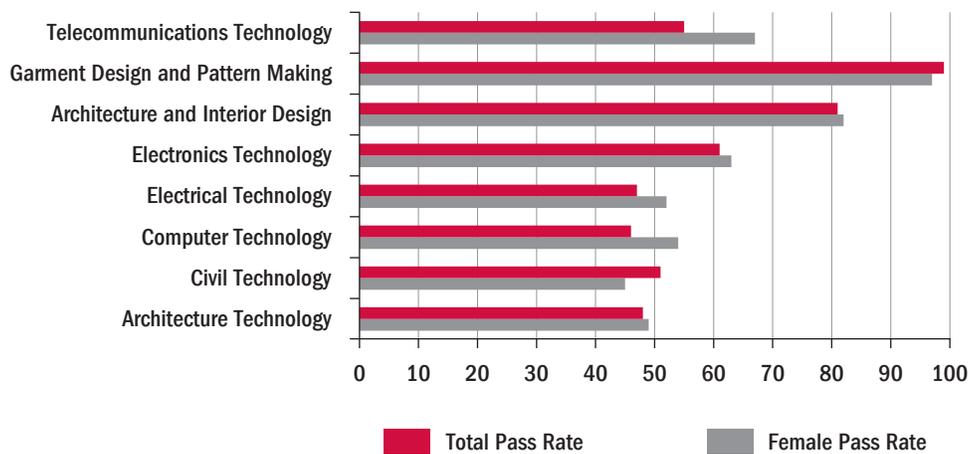
Figure 7 Bangladesh: Diploma Pass Rates by Institutional Ownership and Selected Program, 2010



Source: Bangladesh Technical Education Board data, as presented in ADB. 2011. Innovative Strategies in TVET for Accelerated Human Resource Development in South Asia: Country Paper: Bangladesh. Draft. November. Consultant's report. Manila (TA 6337-REG).

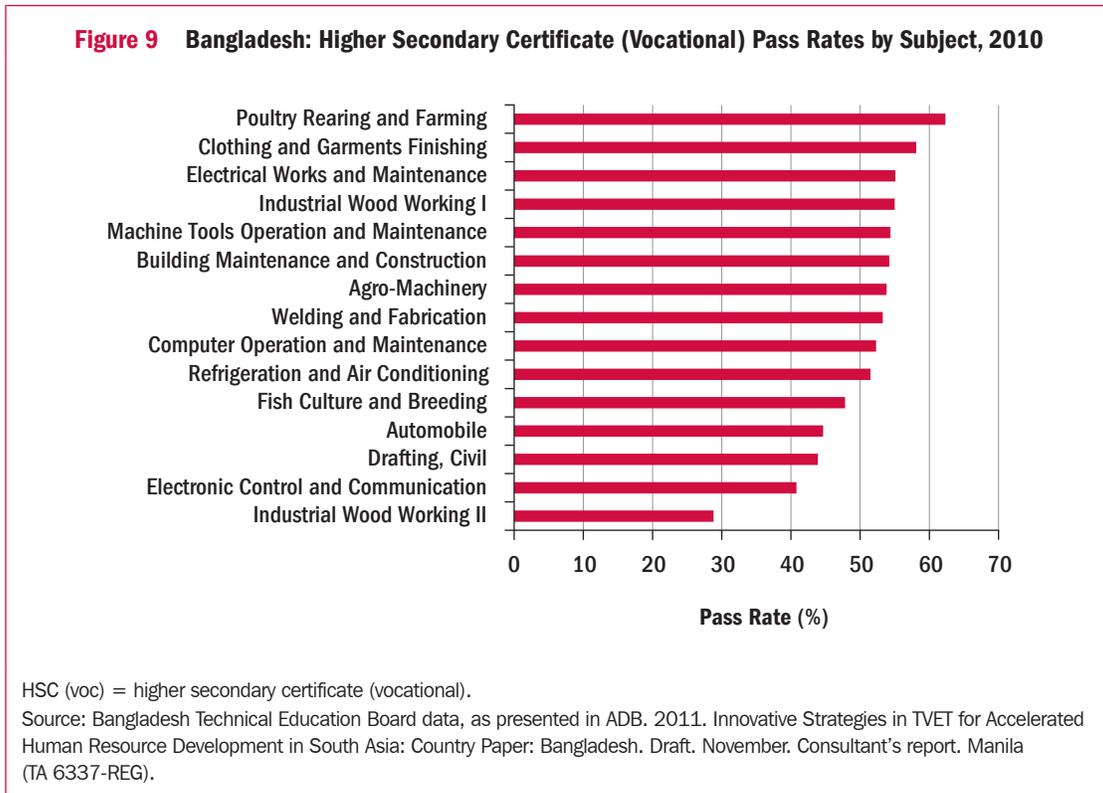
Female pass rates compared favorably to the total and exceeded the average in telecommunications and computer technology (Figure 8).

Figure 8 Bangladesh: Female and Total Pass Rates at the Diploma Level, 2010

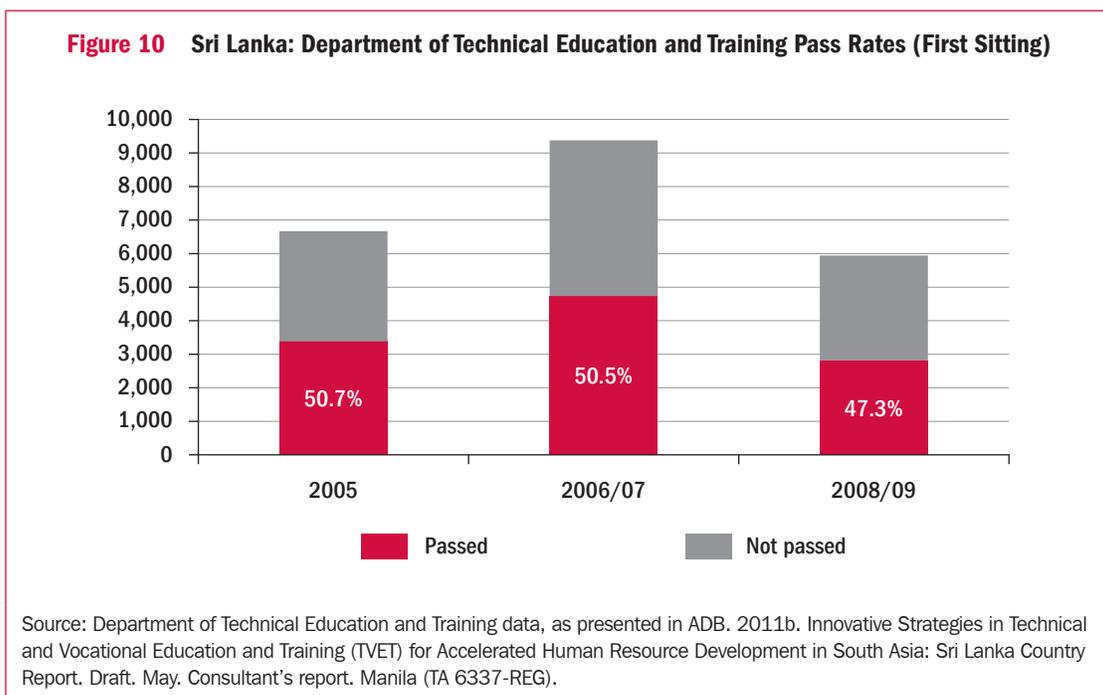


Source: Bangladesh Technical Education Board data, as presented in ADB. 2011. Innovative Strategies in TVET for Accelerated Human Resource Development in South Asia: Country Paper: Bangladesh. Draft. November. Consultant's report. Manila (TA 6337-REG).

Figure 9 shows pass rates by subject at the higher secondary certificate (vocational) (HSC [voc]) level. Pass rates ranged from 29% to 62%.



In Sri Lanka, pass rates in Department of Technical Education and Training (DTET) institutions at the diploma level ranged from 47% to 51% (Figure 10).



INPUTS

Quality can be analyzed in terms of inputs and processes. The main inputs for quality training include standards, curricular content, teachers/instructors, equipment and physical facilities, and consumable supplies, all of which require adequate levels of financing. Additionally, effective training requires trainees who can learn, usually defined as having had sufficient prior education.

Bangladesh

The causes of low quality have to do with lack of teachers, insufficient financing for needed material inputs, and lack of incentives:

Lack of qualified instructors. One of the main constraints to effective TVET delivery is the lack of trained teachers, which has two main causes: lack of capacity to train instructors, and bureaucratic red tape that makes it difficult to fill vacancies.

Most TVET teachers have received little pedagogical training, including competency-based training; have few practical skills; and possess little or no industry experience. BTEB estimates that 24,000 teachers in the private sector need training. Opportunities for teacher training are limited, even though training institutes are underused. The supply of teachers has not matched the sudden expansion in number of institutions, particularly private providers. Private providers tend to employ untrained instructors (World Bank 2007, 36; 2010,102; ADB 2008c, 3, 27).

Another cause is lack of routine in-service upgrading of instructors. Teachers' qualifications are not in line with the needs, and there is no teacher training after the acquisition of initial qualification. No continuing staff development is available to address deficiencies in teacher qualifications. The system offers very few opportunities for training and upgrading of skills of existing instructors. No policy or regulations exist requiring in-service training. There is neither a formal policy nor guidelines for continuous professional development of TVET teachers. This explains why the Vocational Teachers Training Institute (VTTI) and Technical Teacher Training College (TTTC) are largely empty. Because of vacancies, TVET institutions cannot release teachers for in-service training (ADB 2008c, 3, 27; ILO n.d., 5; World Bank 2010, 82, 101–103).

Bureaucratic red tape also results in prolonged teacher vacancies. This is a major issue. The Director General of the Directorate of Technical Education (DTE) estimated that a 50% vacancy rate exists at all levels, contributing to low TVET outputs. According to some estimates, nearly 60% of sanctioned teacher/trainer posts are vacant in public TVET institutions. The highly centralized hiring system makes it difficult for the institutions to fill vacant positions. The Public Service Commission takes a minimum of 2 years to fill vacancies. In addition, salaries are not competitive enough to attract good talent (World Bank 2010, 6, 38, 86).

Inadequate spending on material inputs. The TVET sector has historically been underfunded. As a result, institutions do not have adequate resources to provide quality training. Several analyses have pointed to low expenditure on nonpersonnel items (only 19% of per student costs). A more recent analysis of the structure of expenditures at technical training centers (TTCs) indicates that salaries and allowances absorb on average 88% of the allocation. This leaves only 12% for other recurrent expenditures, of which roughly two-thirds is spent on electricity. Such a budget structure leaves little for funding other costs of instruction. International data suggest that the ratio of nonstaff-oriented recurrent expenditures is crucial for student performance (ADB 1995, 94; Dohmen 2009, 53; World Bank 2010, 27).

As a result of inadequate spending, the quality of infrastructure is poor in secondary school certificate (vocational) (SSC [voc]) and HSC (voc). Institutions are short of modern equipment and instruments with which to conduct practical classes, especially electrical, electronics, and refrigeration. Enrollments in workshops 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 the typical institution has only two computers for 120 students in each shift. In addition, available facilities and equipment are often outmoded and in poor repair. No budgets are provided for maintenance of equipment and little for consumable supplies (ADB 1995, 98; World Bank 2000, 10, 102).

A widespread dearth of instructional materials exists. Instructional materials and packages are not developed systematically, scientifically, or continuously. No development center exists to design, develop, validate, and disseminate teaching-learning resources. Finally, the TVET system has a serious problem of spending the allocated resources (see explanation in the following section) (Dohmen 2009, 55; World Bank 2010, 100, 103).

Lack of incentives for good performance. The managers and instructors of training institutions lack incentives for good quality teaching. Examination results are not published by institution. Overcentralized control means that school directors take little initiative. Instructors lack accountability. The motivation of teachers is also a concern, owing to limited scope for promotion and low salaries (World Bank 2000, 10; BCR).

Nepal

The quality of training in Nepal suffers from many of the same problems as in Bangladesh. The quality of TVET graduates is not on par with the requirements of industry. This can be attributed to several factors. First, a majority of trainers and instructors are unqualified and untrained, without prior work or industry experience. The technical teacher training program is weak in developing trainers' occupational skills through hands-on industrial experience. Second, low quality can be attributed to the low level of resources allocated to the TVET system. As a result, institutions lack equipment and materials for proper instruction. Third, national standards to measure skills levels are largely absent. In the absence of a nationally accepted vocational qualifications framework, quality and effectiveness in TVET are lagging. Fourth, monitoring and evaluation mechanisms are inadequate or, in some cases, absent. Measurement of stakeholders' performance, accountability, and transparency in budget management are insufficient. Monitoring of the quality of training programs needs to be improved. The growing number of private training providers, a proportion of which are in the training business solely for financial benefits, poses a threat to training quality across the country (NCR).

Sri Lanka

Introduction of the national vocational qualifications framework (NVQF) and competency-based training has been an important innovation designed to raise the quality and relevance of training. The Sri Lanka NVQF was introduced to establish quality standards at the industry level and to develop an internationally competitive workforce. The introduction of national vocational qualifications (NVQs) has led to national skills standards set in consultation with industry, national quality standards for teaching and assessment using a competency-based approach, and national certification of learners and workers. Over the past 6 years, the Tertiary and Vocational Education Commission (TVEC) has set national competency standards for 40 trade sectors covering NVQ levels 1–4. However, several limitations have been identified in the NVQ system (SLCR) (Appendix 5, Box A5.8).

Skills of the instructional force determine to a great extent the skills acquired by trainees. Acute shortages of trained instructors and teachers are a binding constraint on TVET and limit quality and expansion at all levels. Nearly 70% of DTET teaching posts are vacant and have to be filled on a “visiting” or temporary basis.

An analysis of the staffing pattern for the last 5 years in the TVET system as a whole indicates that filled positions averaged 61%. Critical shortages exist owing to supply constraints (lack of qualified applicants because of meager output from teacher training institutions) and low demand (lack of interested applicants because of low wages in relation to market prices). Another major factor is difficulty in filling positions due to rigid government policies and procedures. Supply shortages are particularly acute at the technician level. The colleges of technology have not been able to recruit staff at the intended levels. For this reason, a lot of visiting or part-time staff are hired to augment the existing academic staff. This has become a common alternative, which adversely affects the quality of training delivery and learning outcomes. Reportedly many instructors and teachers have qualifications at the same level, or only marginally above, at which they teach. Few have industrial experience. Difficulties in retaining qualified staff result in high turnover. The teacher training system, now focused on the University of Vocational Technology (UNIVOTEC), is extremely limited. UNIVOTEC, established only in 2008, has little capacity to meet the staff development activities of the TVET sector (SLCR).

Changing technology presents a further challenge, with many institutions reporting that staff are not up to date with modern technology. Staff at newly equipped colleges of technology were unfamiliar with the operation of some of the equipment (Brady and Perera 2012, 59). Planning for the effective acquisition, use, and maintenance of equipment is poor. Some centers have modern equipment that is underused, while nearby centers have none. Some equipment lies idle because an associated plant is not available. One college of technology had a range of modern automotive equipment, but no vehicle on which to use it. Other equipment lies idle because it has ceased to operate (Brady and Perera 2012, 58–59).

One strategy to raise quality is to concentrate resources in centers of excellence and focus on one economic sector (Appendix 5, Box A5.12).

PROCESSES

Bangladesh

Serious concerns remain about the process of accrediting private providers. Though BTEB is a well-developed organization, there continues to be little capacity in the system to handle quality assurance. Procedures are time-consuming, complicated, and rigid. Often, they are not followed properly, in part because of political interference, and also due to inadequate resources to carry out inspections. BTEB has essentially become an office that offers affiliation or accreditation of private training providers for a fee, with little or no attention to quality assurance. There are more than 1,000 affiliated private institutions. These are supposed to be monitored annually, but BTEB in 2010 actually visited only 146 private institutions—of which 48 were sent letters admonishing them to raise their performance. With only one inspector and one deputy, BTEB could do no more (World Bank 2007, 34; 2010, 3; interviews with key BTEB staff in September 2011).

Nepal

Weak quality assurance of private providers results in variable and generally low quality of instruction. Many private providers lack the facilities, trained staff, and output standards required to produce good skills. This occurs despite the review process in the Council for Technical Education and Vocational Training (CTEVT) through which all providers must pass. Quality assurance by CTEVT is weak, partly because of lack of resources in the department responsible, but also because of political interference and favoritism. CTEVT is unable to follow through after initial approval to ensure that private providers maintain reasonable quality standards.

Sri Lanka

By the end of 2010, more than 1,100 private institutions had been registered by TVEC. This simply means that they are generally suitable to conduct training. Registration does not mean that an institution has been approved to conduct specific courses. The extent of registration and accreditation is limited, largely due to the lack of staff. The Standards and Accreditation Directorate of TVEC has only six staff members involved in judgments about registration and accreditation. They have to rely on contractors, usually from a different organization, for conducting appraisals in many areas. Use of contractors has had credibility problems (Brady and Perera 2012, 17, 43).

6 Effectiveness of Technical and Vocational Education and Training Organizations and Administration

This chapter evaluates the effectiveness of technical and vocational education and training (TVET) governance and management in each country.

BANGLADESH

TVET organizations and administration are analyzed at two levels: the central level and that of training institutions.

Central/National Organizations and Administrations

TVET policies and plans. Action on the National Skills Development Policy (NSDP) took 2 years, from 2009 to 2011. Some of the policies and plans are mutually inconsistent. Implementation may be hobbled because of the unwieldy structure of the National Skills Development Council (NSDC) and lack of resources for its secretariat. The policies did not start with a careful analysis of economic prospects and identification of implications for skills. The policies and plans did not specify the cost implications of the measures proposed, so financial feasibility remains questionable. No comprehensive development program has been formulated yet for skills development. Except for the NSDP, policies and plans seem largely quantitative, focused on expanding the current system for greater access. Much less emphasis is placed on improvements to current provision (World Bank 2010, 100; BCR).

Plans and policies are hobbled by lack of information about the supply and quality of TVET. Students also lack information on which occupations to choose. It is difficult to obtain an overview of the real size and growth of the present system, as the most recent statistical data are several years out of date. No single set of statistics covers the whole system—public and private, formal and nonformal. Adequate, systemwide data for policy making are not available. Little information is available, in particular, on the extent of short-term training, most of which is in the private sector. Aggregated and time-series data for planning and managing general education are not available for TVET. There is virtually no way to get consolidated and reliable information (World Bank 2007, 34; 2010, 28; ADB 2008c, 30; Dohmen 2009, 23).

Coordination is also needed among funding agencies. In particular, approaches need to be harmonized. Several funders are working on industrial skills committees (or “sector working groups”), development of competency-based curricula, and teacher training. Yet, terminology, terms of reference, composition of groups, and formats have not been standardized across projects.

Organizational structure for technical and vocational education and training. Several analyses have pointed out that the current institutional framework does not allow main actors to coordinate their work effectively. The TVET system is fragmented—multipolar and noncoherent. The national body responsible for coordination of skills development—NSDC, formed in 1979 and reconstituted in 1991—had not met for more than 20 years. It was reestablished in 2008. Until recently, weak linkages and lack of coordination existed among nodal agencies (Directorate of Technical Education [DTE], Bangladesh Technical Education Board [BTEB], and Bureau of Manpower, Employment and Training [BMET]). The lines of responsibility across the three main agencies are unclear. Activities are isolated from each other, resulting in overlap in some functions such as curriculum revision, teacher recruitment, and quality monitoring of institutions (ADB 1995; World Bank 2007, 34; 2010, 2, 26, 100). Action plans to implement the approved skill policy seek to reduce such duplication.

Specific Organizations

NSDC has not functioned as intended. It is supposed to provide macro-level policy direction but has been inactive. It did not even meet until August 2011. It is too big (36 members), with many high-level officials, including the Prime Minister as chair. Many members do not have interest or expertise in skills development. BMET as the secretariat lacks resources and autonomy to act. Only one-fourth of the NSDC members represent employers and industry, and only 5 of 18 do so on the Executive Committee (ADB 2008c, 29).

BTEB is a unique, self-supporting organization that generates income from institutional accreditation and student examination fees but has limited capacity. Shortages of professionals exist in curriculum development, examinations and certification, and instructional resources, causing a mismatch between workload and capacity. Curriculum revision is done by workshops on an ad hoc basis. BTEB lacks qualified and trained specialists, in particular, to carry out evaluation. Testing is traditional. The objective is to pass or fail a student based on examinations twice a year. There is only minimal use of information and communication technology, with no computerized question banks or online admission tests (World Bank 2010, 100).

The Technical Teacher Training College (TTTC) does not undertake research work on teacher training, curriculum development, examination reform, student assessment, or use of teaching-learning resources. Little or no networking occurs between the TTTC and industry, higher technological institutions, or technical training institutions within and outside the country for professional growth and development (World Bank 2010, 102).

Administration of Training Institutions

Lack of authority. The main problem is the way institutions are governed. The system is highly centralized, with most decisions taken at the center. Institutions are merely implementing agencies for decisions taken at the center. The overly centralized system of DTE does not allow its principals to manage. They do not have authority to hire teachers or discontinue programs with low demand (ADB 2008c, 29).

Institutions have few incentives to improve their performance. Principals of public and publicly subsidized institutions have little autonomy to replace training programs, ensure that students receive quality training, or involve the private sector. At the same time, institutions are not held accountable for performance. There is a lack of accountability for funds received. Supervisory control over TVET expenditures is relatively weak, with improper record keeping and serious scope for abuse. Financing of public institutions continues from year to year, regardless of performance. In practice, once private schools attain eligibility to receive the monthly payment order, subsidies flow regardless of performance. Fewer than 2% of schools had their monthly payment order subventions suspended between 1999 and 2003 (World Bank 2007, 35–36, 39; 2010, 27; ILO n.d., 5; BCR; interview with the DTE director general and director of planning and development in September 2011).

Constrained financial management. Training institutions cannot transfer funds from one line item to another. This inflexibility results in the return of funds to the ministry, although there may be an urgent need to buy

teaching materials, etc. In addition, some institutions are unable to spend the whole budget due to protracted procurement procedures. Limited funds as well as insufficient spending power of institutions are among the core problems of TVET in Bangladesh. Institutions in general cannot effectively disburse the funds allocated to them, since (i) operational funds are insufficient; (ii) budget flexibility is low, as transfers between budget lines are not permitted; (iii) institutions receive a limited share of their budgets to disburse at their discretion; and (iv) as a result, an average of 20% of budget funds are returned unspent (Dohmen 2009, 43–45).

Straight-jacketed institutions. One would expect that higher-level institutions, such as teacher training colleges and polytechnics, would have some freedom to make decisions. However, these polytechnics and the TTTC have no external governing board, only an internal academic council. Specifically, the TTTC has no autonomy in devolution of power for academic, administrative, managerial, or financing functions. The TTTC does not have authority to hire staff temporarily. It is not allowed to give short courses and charge full costs. It is not permitted to provide in-service training for private training providers (World Bank 2010, 102; interview with TTTC principal in September 2011).

Polytechnics. 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 approval of DTE. It can, however, deliver short courses (less than 360 hours). The management said, “We are just implementing decisions taken elsewhere.” This characterization was reinforced by a separate institutional review. The main areas of institutional autonomy are not under the control of polytechnics, e.g., staff appointments, student admissions, curricular changes, resource allocation, budget allocation, assessment and certification, and generation and use of revenue. The private sector has almost no role to play in the management of polytechnics in both the administrative and academic councils. None of the polytechnics has a position of training and placement officer, nor any industry liaison cell to coordinate training of students and job placement, organize job interviews, track alumni, nor facilitate training of teachers in industry or of industry personnel. No management information system (MIS) exists, either computerized or through regular collection in other formats (interviews with key staff of Dhaka Polytechnic in September 2011; World Bank 2010, 103; BCR).

BHUTAN

The small size and the relatively few training agencies in the country help make coordination theoretically easier compared to larger countries. The Ministry of Labour and Human Resources (MoLHR) is Bhutan’s apex agency for all training initiatives. However, its effectiveness becomes uncertain due to the shortage of personnel and changes in the ministry leadership—particularly in the period immediately after transitioning to democracy. Moreover, MoLHR officials and staff require further training and professional development. One major stumbling block of the ministry is in accreditation and quality assurance of private training institutions. Another is the ambivalent relationship between the government and the private sector representatives in the technical advisory committees. Finally, reform initiatives in the country, though well-meaning, are not yet adequately market-oriented. There is still a general assumption that the government is the super planner and the sectors would do well to cooperate. This may be attributed to the fact that government restructuring and reform have not yet substantially penetrated deeply rooted political and social traditions (ADB 2011a).

MALDIVES

While the Maldives Qualifications Authority (MQA) enjoys widespread respect from all stakeholders in TVET, other regulatory bodies do not command the same respect. The employment sector councils, convened to help steer TVET policies, stopped meeting after the closing of the ADB-funded Employment Skills Training (2003–2010) project. These multisector groups have been idle since then. A well-functioning secretariat for the council is essential for support within the Ministry of Education. Also, a government-wide redundancy

scheme had unintended consequences: It left offices understaffed, particularly regarding technical personnel, and overloaded the staff who remained. A good example is the TVET Authority, which has only three people, including the head. Unfortunately, hiring people even on a temporary or contractual basis to fill the resource gaps is not allowed (MCR).

NEPAL

Despite the existence of a central apex organization, CTEVT, several issues exist.

Lack of sufficient mandate and authority. The mandate and authority of CTEVT are insufficient to compel coordination among all public and private training providers. It reports to the permanent secretary of the Ministry of Education (MOE) and must exercise authority over other ministerial training through MOE. There is inadequate effective representation of key stakeholders and providers in the national coordinating body. In particular, employers fill only 4 of 24 positions in the CTEVT Assembly. CTEVT has been given a legal mandate for TVET at the national level, but its quality assurance performance has been limited to its own institutions (NCR).

Conflict of interest. CTEVT spans all functions including policy development, quality assurance, and delivery. This can be interpreted as a conflict of interest. As a result of administering public training institutions, CTEVT tends to be too burdened with implementation tasks.

Fragmentation in public provision and lack of coordination. Scattered responsibilities for TVET in government result in duplication of resources. About 10 ministries or line government agencies currently provide skills training, including industry (cottage and small industries), labor, health, and agriculture. This is typical of most countries. What is lacking is a common policy framework and a uniform set of national qualifications standards. This means that each ministry or department provides training according to differing standards, without consistency in competencies. In addition, each public provider tends to produce its own curriculum, resulting in duplication of effort. Moreover, other ministries do not recognize the authority of CTEVT to coordinate training activities, as was intended as an “apex body” on skills development (NCR).

Policy uncertainty. The cabinet approved the TVET policy in June 2012, which was 5 years after its initial submission. In 2009, the government had formed a TVET Recommendation Committee, comprising nine ministries and three employer federations (FNCCI, Cottage and Small Industries Federation, and Confederation of Nepali Industries), to elaborate on the policies. It identified issues and actions required in seven areas, including adoption of an NVQF and establishment of a national skills development fund. However, the recommendations tended to be difficult to follow and unwieldy in organization. Reportedly, there is too much political interference in organizations for them to carry out their activities, e.g., abrupt transfer of personnel. The political situation has indefinitely delayed parliamentary approval for policies and plans. The proposed national qualifications framework highlighted in the TVET Skills Development Policy of 2012 is also on hold (NCR).

Lack of effective quality assurance over private providers. Many private providers lack the facilities, trained staff, and output standards required to produce good-quality skills. This occurs despite the review process in CTEVT through which all providers must pass. Quality assurance by CTEVT is weak, in part because of lack of resources in the CTEVT department responsible, but also because of political interference and favoritism. CTEVT is unable to follow through after initial approval to ensure that private providers maintain reasonable quality standards.

Lack of devolution of authority. Devolution with accountability to the regional and institutional levels is not practiced by the central authority for fear of losing control. Centralized management puts too many restrictions on introducing new programs or revising the old ones, as well as making decisions on financial and personnel

matters, and it interferes with overall local institution management. Centralized decision making impedes responsiveness to local skills requirements. Training providers are not held accountable for delivering poor-quality and ineffective training programs. Incentives and rewards are lacking for well-performing institutions, as well as sanctions for nonperforming ones. There is a tendency to shovel responsibility upward from the institutional level. Accountability is perceived to exist only at the central level. Public training institutions and their management committees are not serious about their overall efficiency because of limited authority vested in them. Local participatory planning and monitoring are lacking to ensure efficient operation of TVET institutions (NCR).

Lack of information and research. An effective MIS is lacking, as indicated by the incomplete information available. Moreover, there is no system of labor market information. The government and financing agencies do not give priority to research and development. Thus, there is little or no provision of financing for conducting action research on which to base improvements in the system (NCR).

SRI LANKA

Lack of integration at the center and provinces. Perhaps TVET's greatest limitation is imposed by the current organizational structure. The TVET system of training provision has been unified under one ministry, but the different providers—created at different times and under different legal provisions—have not been integrated. It is more like a grouping of “silos” under one roof. This results in considerable duplication of functions at the center and inadequate provisioning for priority tasks (e.g., labor market information). Fragmentation persists in provision at the district and provincial levels, where four provider organizations coexist. Control of training provision rests firmly in the Ministry of Youth Affairs and Skills Development (MYASD); little authority is exercised at the level of public training provider. This stifles initiative and innovation. Moreover, most government providers are not able to charge fees to supplement their meager income from the state budget. This constrains their ability to raise quality and respond flexibly to changing market requirements. Despite progress, a fully functional TVET MIS is lacking. Little information exists on costs, teachers, and student flows (Government of Sri Lanka 2011a, 46).

Lack of autonomy at the institutional level. In operational terms, however, planning is not a major concern of institutional-level directors due to the lack of autonomy and accountability. The governing boards of TVET institutions, dominated by civil servants, tend to be more regulatory-oriented rather than market-driven. There is no direction at the institutional level other than to become a semigovernment institution responding to the micromanagement of the supervising ministry and the government in power. Moreover, public TVET directors are not given clear-cut policy directives and authority to work directly with industry even if the opportunity were to arise (SLCR).

Lack of coordination. No formal administrative body exists with the assignment of overall coordination of TVET sector activities in line with national policy guidelines. Earlier efforts to establish an “Interministerial TVET Committee” did not reach the stage of implementation. The recommendations of the National Employment Policy (2006) for overall coordination of training were not implemented for political reasons (SLCR).

Lack of a management information system. The relative magnitude of training provided by other public, private, and nongovernment organization (NGO) sector institutions cannot be assessed due to the paucity of information. One of the biggest weaknesses of the present TVET system is inadequate management information systems (MIS). On supply, information coverage is limited to public sector TVET providers with barely any information on the operational activities of private and NGO sector providers. At the institutional level, however, a wide range of information on operational activities is being collected, but the format and coverage vary from institution to institution. These database systems are not easily accessible, and no proper MIS operates between the supervising ministry and its line agencies. A detailed analysis of TVET programs covering the cost efficiency aspects cannot be carried out due to serious data limitations. Attempts have been made to develop better MIS. However, an MIS installed in six colleges of technology has proved to be cost-ineffective (SLCR).

7 Resource Generation and Use: Internal Efficiency and Sustainability

This chapter examines technical and vocational education and training (TVET) financing from two perspectives: mobilization of resources and efficiency of use.

MOBILIZATION OF RESOURCES

Bangladesh

Little is known about total costs per trainee or public expenditure per trainee for different levels and types of institutions. However, it is clear that the government contributes relatively little of its total education spending for TVET, averaging only around 1.5%–2.5%.

Training is virtually free in public institutions. About two in three students receive stipends, and many receive free hostel accommodation. Institutions are not encouraged to engage in cost-recovery activities: Government rules do not permit training institutions to retain and reinvest the resources generated at the institute level. Institutions thus have little incentive to generate income from services or production, because profits are returned to the Ministry of Finance. The only exception is the delivery of short courses (<360 hours), income from which can remain at the institution (World Bank 2007 , 60; 2010, 3, 38, 102; BCR).

Nepal

TVET is not treated as a priority for financing by the state and receives a nominal amount of about 1.2% of the education budget and about 0.2% of the total government budget. TVET is considered as only a minor subset of the government system of education in Nepal. In addition, government allocations for training to each public agency are based on the needs of the given department rather than the priorities within the training market. Too much dependence exists on government financing, and there is too little exploration of contributions from individuals and the private sector. The private sector has had little incentive to contribute; rather, it has been penalized by taxes and restrictions (NCR).

Sri Lanka

TVET financing is also a constraint. The long-standing government policy on free education through the first university degree prevents cost recovery from beneficiaries. Any income raised by public TVET institutions must go to the consolidated fund, thus discouraging any incentive for income generation. Other countries have gotten

around such policies by offering fee-paying courses outside the regular training program (evenings, weekends), or by selling goods and services. Creation of an entrepreneurial attitude among training managers is important (SLCR).

INTERNAL EFFICIENCY IN USE OF TVET RESOURCES

Bangladesh

Even though the system is underfunded, substantial resources are wasted in TVET.

Overcentralization of administration makes it difficult to economize on resources. Lengthy courses are one example of wasted resources. Training focuses on certification and lasts longer than strictly necessary for occupational purposes. Course offerings are too long for the objectives and skills being taught. One-year programs could presumably be taught in 6 months (ADB 1995, 129; World Bank 1990, xviii; 2000, 11).

Student–teacher ratios are low. Student–teacher ratios average only about 10:1 to 12:1, and are low in government TTCs at 9:1 and in nongovernment technical schools and colleges (10:1), polytechnics (12:1), and secondary school certificate (vocational) (SSC [voc]) (10:1).

Physical facilities are often underused. Capacity utilization is low, especially for nongovernment diploma institutions (46% in 2006–2007) and SSCs (voc) (69% in 2006–2007). Capacity utilization was found to be low on a survey of 300 public and private institutions, including 53% utilization for secondary vocational and 41% for diploma-level training. Higher secondary certificate (vocational) (HSC [voc]) enrollments were only 46% of seating capacity in January 2008. In contrast, enrollments reached 95% of capacity in public diploma-level institutions (ADB 1995, 102; World Bank 2007, 24; 2010, 85–86).

Diseconomies of scale exist. The average enrollment size of public HSC (voc) institutions is small—about 110 students—and 115 in private ones. There is no indication of economies of scale at the polytechnics. This suggests diseconomies of scale. At the technical schools and colleges, however, the cost per student decreases with the size of the institution; thus, economies of scale can be identified (Dohmen 2009, 52–53).

Dropout rates are often high. They were about 30% for first and second semester diplomas (public and private), and 32% for SSC (voc) in 2006. Graduation rates are sometimes below 70% (ADB 1995, 91, 94; World Bank 2010, 85–86).

True costs per employed graduate are high. High dropout rate, plus low employment rate of graduates, means that the TVET system in Bangladesh is costly, even if the expenditures per student may seem reasonable. The low fee structure implies that there are few private costs to students of not finishing the program. This contributes to the low internal efficiency. Moreover, the majority of successful SSC (voc) and HSC (voc) graduates pursue further study—an expensive route to acquiring further education (ADB 2008c, 28; Dohmen 2009, 63–64; World Bank 2010, 3; BCR).

Often, the wrong people are trained. Training is wasted on the wrong target groups. Ironically, those who want TVET qualifications typically cannot enter training because they lack the completed grade 8 admission requirement. Those who do enter, particularly those with SSC (voc), have little intention to enter manual occupations. In other words, those who can attend TVET do not wish to and those who wish to are not allowed. Thus, the clientele of formal vocational training tends to be inappropriate. Those with grade 8 qualifications often aspire to further education and white-collar occupations. Many have little or no intention of entering the job

market and practicing the trade skills acquired. Half the students in a survey of entrants to vocational training institutes had no intention to seek employment in the area in which they were being trained. This was confirmed in an interview (September 2011) with the director general of the Directorate of Technical Education (DTE), who said that a high proportion of vocational graduates do not want manual jobs, such as in air conditioning and refrigeration. The problem is one of attitude (ADB 1995, 138; World Bank 1990, 17; 2000, 9; BCR).

Bhutan

Low student–teacher ratios constitute a particular problem in Bhutan. In public vocational institutions, each teacher instructs only an average of eight trainees. Vocational training institutes are underutilized and unpopular. Causes include low social esteem resulting from negative public attitudes toward blue-collar work. Low enrollment leads to high cost per trainee. Enrollment ranges from 45 to 195 trainees in the six main government vocational training institutes, with recurrent costs per student ranging from 66,000 ngultrum (Nu) (\$1,259) to Nu123,000 (\$2,347).

Nepal

Although data are lacking for substantiation, despite the financial and human resources employed, relatively few graduates emerge from the training institutions. The causes are high ratios of staff to trainees, dropouts, low pass rates (65%–75%), and relatively high unit costs. Duplication of training efforts and underuse of public training resources contribute to the inefficiencies. As in Bangladesh, centralized management reduces the incentives at the institutional level to make the best use of available resources (NCR).

An important innovation in Nepal uses output-based financing as a means to raise the effectiveness of training (Appendix 5, Box A5.6).

Sri Lanka

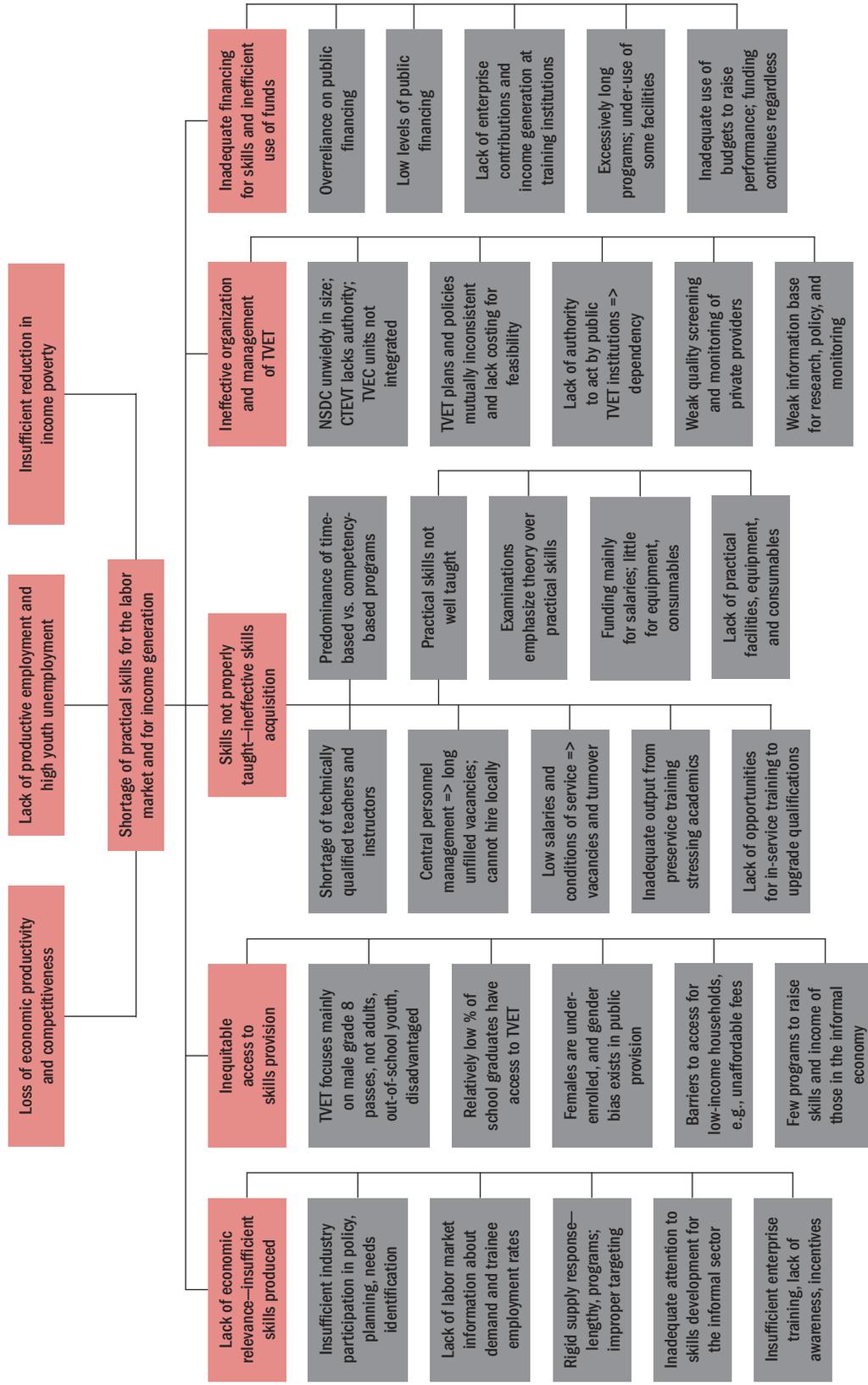
Inefficient deployment of training equipment appears to be an issue. As noted previously, planning for the effective acquisition, use, and maintenance of equipment is poor. Some centers have modern equipment that is underused, while nearby centers have none. Some equipment lies idle because the associated plant is not available. One college of technology had a range of modern automotive equipment, but no vehicle on which to use the equipment. Other equipment lies idle because it has ceased to operate (Brady and Perera 2012, 58–59).

The Department of Technical Education and Training (DTET), the National Apprenticeship and Industrial Training Authority (NAITA), the National Youth Services Council (NYSC), and the Vocational Training Authority (VTA) have courses for the same occupational areas that differ only in duration and mode of training. This leads to duplication. The current organizational structure is inefficient, because it diminishes responsiveness and accountability in service delivery due to centralized decision making and reduces cost-effectiveness due to an inability to fully use the human and physical resources of MYASD. The current structure means that human and physical resources are locked up within given institutions, reducing the flexibility that is required for efficient resource use (Brady and Perera 2012, 60).

SUMMARY

At the risk of oversimplification, Figure 11 provides a composite summary of the issues in TVET in the three South Asian focus countries. However, many of these points also apply to Bhutan and the Maldives.

Figure 11 Composite Summary of Technical and Vocational Education and Training Issues in South Asia



CTEVT = Council for Technical Education and Vocational Training, NSDC = National Skills Development Council/Corporation, TVEC = Tertiary and Vocational Education Commission, TVET = technical and vocational education and training.

8 Strategies and Innovations

This chapter sets out some ways and means to achieve key policy goals in technical and vocational education and training (TVET) (see Appendixes 5 and 6). Complementary actions are necessary within the systems of skills development. Just as there is no single cause of low relevance, quality, and access, there is no single solution. No single intervention can meet the needs of all. Improvement requires complementary, interrelated measures. In general, successful reforming institutions have moved simultaneously on several fronts, mainly to improve their finances while boosting relevance and quality. Some of the interventions contribute to more than one policy goal and therefore are mentioned more than once. Noteworthy innovations are mentioned where appropriate.

Four sets of strategies are presented below concerning (i) relevance and quality, (ii) equity and access, (iii) governance and management, and (iv) internal efficiency and financing.

STRATEGIES TO RAISE RELEVANCE AND QUALITY

Strengthening Economic Relevance (External Efficiency)

The objective is to match TVET supply and economic demand, i.e., increase the congruence between the composition of graduates from the TVET system and labor market demands.

Make TVET an instrument for economic development. A first step is to explicitly link subsector and institutional development plans to economic development strategies. This can be done by analyzing the skill implications of economic trends and investments.

High priority should be accorded to building closer relationships between training supply and market demands. Demand-responsiveness, besides better information about demands, requires greater employer participation in directing and evaluating the training system, as well as more flexible and responsive training supply.

Deepen employer involvement. One of the most effective strategies to raise the relevance and quality of training is to involve employers closely in directing and evaluating the training system. Employers know best what skills are needed in the labor market, even if they cannot forecast the creation of specific positions more than a few months in advance. As seen in Table 2, employers can be involved in seven distinct functions of training systems. The regional review showed that enterprise participation was generally low, concentrated mainly on development of standards and curricula and provision of internships.

Two significant findings of the review highlighted strong employer involvement: In Bangladesh, employers have stepped in to fill the vacuum in public provision (Appendix 5, boxes A5.1 and A5.2). In Sri Lanka, the National Apprenticeship and Industrial Training Authority (NAITA) maintains strong relationships with industry for its highly effective apprenticeship training (Appendix 5, Box A5.7). These could be models for other countries to follow.

The review also indicated that employers are playing an increasing role at some stages of training, particularly in standards and curricula, albeit starting from a very low level. The question is how to encourage further employer involvement in skills development. There are several possibilities:

First, *recognize employer time constraints*. Time is money. Time is perhaps the most scarce of resources. Therefore, demands on the time of industry representatives must be kept strategic and to a minimum.

Second, *achieve more private participation in systems of governance*. Except for Sri Lanka, all governance structures covered in this review were skewed toward public representatives. The Council for Technical Education and Vocational Training (CTEVT) in Nepal has only 4 of 24 members from the private sector. Bangladesh has 11 of 36 members of the NSDC representing the private sector. (Sri Lanka does better with 10 of 17 members of TVEC, including its chair, representing employers and the private sector.) The international Labour Organization (ILO) model of one-third membership each for government, employers, and trade unions is balanced. However, given their prime role in hiring and driving employment, more weight should be given to employers. Several advanced countries skew the governance structure toward employers, including Brazil (Appendix 6, Box A6.1), Singapore, and the United Kingdom.

Third, *work through enterprise associations to establish public–private partnerships*. The review identified several enterprise associations keen to establish linkages with the training system. As stated, in Bangladesh, employers have established and financed their own training institutions (Appendix 5, boxes A5.1 and A5.2). The Nepal Contractors' Association wants to address the serious shortages of skilled labor in construction. The National Chamber of Commerce and the Federation of Chambers of Commerce and Industry of Sri Lanka are both keen to serve as intermediaries to stimulate cooperation between training institutions and enterprises. The introduction of a tax deduction for enterprise training in Sri Lanka opens the opportunity for an employer association to serve as a broker in arranging training programs and venues for staff training, as has been done in Chile. (See Appendix 7 for some suggestions on investments.)

An ADB project in Indonesia is helping to establish public–private partnerships as a key strategy to strengthen the relevance of vocational education and training (Appendix 6, Box A6.2). India has established a National Skill Development Corporation with majority private sector ownership and membership. A major objective of this development corporation is to promote partnerships with the private sector (Appendix 6, Box A6.3).

Make training supply more flexible and responsive. Training supply can be made more flexible in at least two ways: by restructuring public provision and by increasing private training supply.

First, *build flexibility in public provision* through short-term programs; modular content; local accountability; and continuous, lifelong training. Lengthy training courses, as identified in this regional review, tend to be rigid and impervious to change, particularly those within the formal school system. School-based vocational training at the secondary level may be so ineffective as to question its value. This seems to be the case with the secondary school certificate (vocational) (SSC [voc]) in Bangladesh, with direct employment rates for graduates of around 5% (World Bank 2007, 31). It appears to be providing inferior secondary education and mainly for those who are going on to further education, not for employment. Consideration should be given to converting SSC (voc) programs into general secondary education. In contrast, a key innovation in the two ADB-financed Skills for Employment projects in Bangladesh and Nepal seeks to provide short-term nonformal skills training for disadvantaged groups. These programs can be readily changed to adapt to different market conditions. In addition, adoption of modular training markedly increases program flexibility. The Government of India launched a national program in 2010 for Modules of Employable Skills⁸ that sets standards for skills acquisition

⁸ See <http://dget.nic.in/mes/sectors.htm> and Government of India (2009, 5).

and certification in 60 broad occupational groups, many in the informal sector. The modules are based on work initiated by the ILO and outline short competency-based programs. Each module provides a building block for acquisition of wider qualifications. An important question is to whom the managers of training institutions are accountable. If it is to central authorities, then there is little incentive to respond to local demands. If, however, training managers are responsible to local communities, then the chances for responsiveness are greater. The community colleges in the United States exemplify responsiveness to local requirements. Mature TVET systems, such as in the Republic of Korea, recognize that training is not a once-in-a-lifetime event. As technologies change and new occupations emerge, provision must be made for continuing, lifelong training. Finally, guidance and counseling can help mesh training supply with market demand. Such systems seek to overcome market failures of information about employment possibilities and to channel trainees into fields in high demand. Sri Lanka has begun to establish an extensive system of guidance and counseling (Appendix 5, Box A5.9).

Second, *support private training provision*. Because demand is impossible to predict with precision and is typically localized, the responsiveness of TVET systems depends not on top-down planning, but on having a diversity of providers that are motivated to meet the demand for skills (Booth and Snower 1996 in Tan et al. 2011, 29). Private training providers tend to be more agile than their public counterparts in responding to clients and changing conditions in the labor market. After all, their financial survival depends on it. However, there is a tendency among some profit-seeking private providers to cut corners and foist low quality on unsuspecting clients. The challenge is to expand private service provision at satisfactory levels of quality. How can this be achieved? First, strike the right balance between regulation and permissiveness. Overregulation of private providers prevents the entry of legitimate providers or constrains their expansion. Laissez-faire approaches allow the proliferation of unscrupulous providers that take advantage of clients and provide little value for money. The regulations on paper in South Asia do not seem overly restrictive at present, except perhaps Nepal's bias against for-profit providers. The question rather is how to enforce existing standards, given insufficient staff and budgets. Second, an innovation in Sri Lanka is helping to promote quality private provision: the Accredited Training Providers' Association (ATPA) (Appendix 5, Box A5.10) is limited to institutions that have qualified to deliver programs under the National Vocational Qualifications System. ATPA exists to promote the interests of its members to government and to help build member capacities. Provision of financing to such an association could enable it to provide a variety of services such as in-service staff development, dissemination of training programs, and development of management information systems (MIS). Third, efforts should be made to support nongovernment organizations (NGOs) that provide excellent training to disadvantaged groups, perhaps through a competitive fund or endowments (Appendix 5, boxes A5.3 and A5.11).

Introduce training for the informal sector. Current training systems in South Asia tend to neglect the informal economy, even though the informal sector accounts for the majority of the labor force, even outside agriculture. Just as enterprises in the formal sector employ skills to produce goods and services, so do enterprises in the informal sector. This constitutes a huge target group for skills upgrading.

One area that has apparently not been studied or supported is traditional apprenticeship, through which a sizable majority of youths learn skills for employment. A master craftsman takes on young workers and slowly, through a series of increasingly more difficult tasks, teaches them the skills needed for the enterprise. Bangladesh, for example, has a rich tradition of *shikhanabish* (master craftspeople training young apprentices). This system of skills acquisition is widespread. Arguably, it 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, the quality of training is likely to be low, haphazard, and based on outdated technologies. Experiences elsewhere, e.g., in South Africa, have demonstrated that improving skills in the informal sector can raise incomes and help lift people out of poverty.

The objective should be to raise the productivity and incomes of informal sector workers and enterprises in key nonfarm economic sectors. In particular, investments could finance upgrading of skills of master craftspeople through various means. Substantial experience exists elsewhere on best practices in upgrading skills in the informal sector. For example, such training must be close to the workplace, short, and flexible to avoid high opportunity costs. The skills upgrading is best provided by master craftspeople themselves, rather than by formal training institutions. This proposal is consistent with prescriptions in the National Skills Development Policy (NSDP) of Bangladesh, i.e., “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 so that participating in the apprenticeship system improves the skill level of their staff” (Government of India 2009).⁹

An essential first step would be a study of the existing scope and practices of traditional apprenticeships in various economic sectors, such as manufacturing. Surprisingly, this review could find no evidence of such studies. A second step would be to develop strategies to address the informal economy. Then, new investments could pilot initiatives to test and implement the strategies.

Build high-level technical skills needed for higher value-added production. As stated, Sri Lanka, given its labor force constraints, needs to move up the value chain to sustain its development in the medium to long term. It is well poised to do so, given the strong levels of general education in the population. In TVET, it should focus on raising the quality of its diploma programs in technical fields in the colleges of technology at levels 5 and 6 of the NVQF. This, in turn, will require special attention to updating and raising the qualifications of teaching staff. Several officials felt that the government could look after lower-level skills, but external assistance would be needed for technological skills. Technical skills at the diploma level have also been identified as a priority in Bangladesh.

The evolution of priorities from lower to higher level skills is evident in TVET development in the Republic of Korea (Figure 12 and Table 4). The initial emphasis was on simple vocational training of low-skilled labor corresponding to labor-intensive industries and an unlimited labor supply. However, with higher wages and an emerging worker shortage, emphasis shifted to the quality and productivity of the labor force. The core of vocational education shifted from secondary level vocational institutions to postsecondary junior technical colleges. Correspondingly, enrollment in vocational education dropped from 811,000 in 1990 to 466,000 in 2010. In enterprise-based training, the focus shifted from initial in-plant training to worker upgrading and then to continuous lifelong development of vocational competencies.

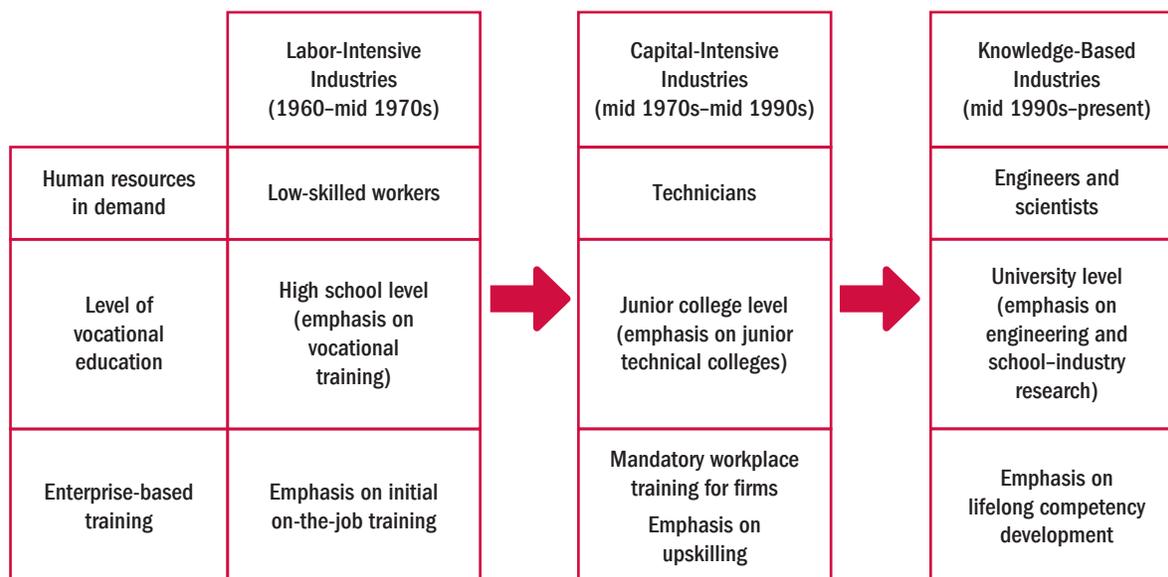
Raising Quality

The policy objective is to achieve higher skills standards and more effective skills acquisition. The principal means include higher educational attainment for entering trainees, competency-based training based on occupational standards, expanded supply of qualified instructors, better use of examination systems and regulations, concentration of resources, and use of competitive funds.

Ensure that greater proportions of the age group complete basic education. This is the most obvious way to raise the quality of TVET. More literate and better-educated entrants to training enable faster, more effective learning. Higher levels of prior education can also eliminate the need for compensatory activities such as literacy training combined with skills training.

⁹ This is a quote under section 12 - Strengthening Apprenticeships, item 12.9 page 36 of Bangladesh NSDP 2011 by Ministry of Education, Government of the People's Republic of Bangladesh, Dhaka, Bangladesh.

Figure 12 Key Changes in Technical and Vocational Education and Training in the Republic of Korea



Source: Department of Technical Education and Training data, as presented in ADB. 2011b. Innovative Strategies in Technical and Vocational Education and Training (TVET) for Accelerated Human Resource Development in South Asia: Sri Lanka Country Report. Draft. May. Consultant's report. Manila (TA 6337-REG).

Table 4 Republic of Korea: Alignment of Technical and Vocational Education with Economic Development

	Up to Mid-1970s	Up to Mid-1990s	Up to Mid-2000s	Recent
Main Industry	Labor-Intensive	Capital-Intensive	Tech-Intensive	Knowledge-Based
Economic growth	Early stage	Rapid expansion	Recession due to financial crisis	Slow recovery from the recession
Economic development paradigm	Establishment of solid basis	Quantitative expansion	Transition from the expansion to qualitative development	Deepening the qualitative development
Level of technology	Adoption	Development	Innovation	Technology convergence
Core workforce	Low-skilled workers	Technicians	Engineers	Engineers and scientists
Technical and vocational education supplying the core workforce	Technical and vocational high school level	Junior college level	University level	Cooperation between industry and university
Related technical and vocational education policies	Expansion of technical and vocational high school education	Expansion of junior colleges	Expansion of colleges and university	Strengthening school-industry research collaboration

Source: Heeseon Choi and Minwoong Ji. 2012. Case Study on [the Republic of] Korea's Experience with Technical and Vocational Education and Its Implications for Developing Countries. Korea Institute for Industrial Economics and Trade. Seoul.

Introduce competency-based training based on occupational standards. Competency-based training focuses on the skills needed to perform in an occupation. NVQFs typically include standards developed in collaboration with industry.

Break the tight bottleneck in the supply of qualified instructors. Little actual formal teacher training is provided in South Asia before or during service. The University of Vocational Technology (UNIVOTEC), the only teacher training institution now in Sri Lanka, enrolls just 30 students in pedagogical degree programs. The two main institutions for teacher/instructor preparation in Bangladesh (TTTC and VTTI) have been starved of funds; little training takes place at either institution. Nepal has a premier institution in TITI, but it organizes little in-service upgrading of staff, particularly when it comes to technical content. Also, the vacancy rate for qualified teachers and instructors is high in Bangladesh and Sri Lanka. Reasons include high attrition owing to lucrative opportunities for technical personnel in the labor market, bureaucratic sluggishness in filling vacancies, low output of fresh instructors, and unattractiveness of teacher remuneration.

The lack of enough sufficiently trained teachers in established posts constrains further development of TVET. Efforts should be made to substantially expand output from preservice training and to introduce systematic in-service upgrading, including exposure to industrial experience. This challenge cannot be addressed, however, without also analyzing the current terms and conditions for TVET teachers and introducing new incentives.

Make better use of examination systems. Examination systems can not only measure learning achievement but also provide incentives for improvement. Strong examination traditions and systems exist in each of the three main countries reviewed. The examinations overwhelmingly measure theoretical competencies rather than practical skills. The results could provide an incentive for better performance. However, the results tend not to be used to identify well-performing or poorly performing institutions.

Improve quality control regulations. Regulatory efforts can be instrumental in ensuring or raising quality. A strong system of quality assurance forms the basis of quality control in any TVET system. It may take the form of licensing of training providers, accreditation of both private and public institutions and programs, and/or ranking of institutions. The issue, in South Asia at least, appears to be one of applying existing regulations rather than making them less burdensome. At the institutional level, it can take the form of quality management systems based on self-assessment and audits to supplement traditional quality assurance. Accountability mechanisms also play a role in quality improvement. Criteria for success include effectiveness incentives to encourage compliance, and links between quality results and funding allocations. Autonomy, accountability, and competition within TVET can foster quality.

Develop centers of excellence. Minimum critical mass is necessary for quality. This includes adequate supplies of teaching and physical inputs: qualified staff, workshops, equipment, and consumable supplies. Often, TVET systems have expanded beyond the financial capabilities of the government sponsoring agencies. Resources are spread too thinly for effective skills acquisition. One solution may be to concentrate resources in centers of excellence (Appendix 5, Box A5.12).

Use competitive funds to stimulate innovation and quality improvement. Competitive funds may be one of the best mechanisms for achieving quality improvement and innovation. These funds have been used widely in secondary and tertiary education, but can be equally effective in TVET. They usually require institutional managers and staff to identify through self-assessment the requirements for improving quality at the institutions and specify key interventions in institution development plans.

STRATEGIES TO INCREASE ACCESS AND EQUITY

Expanding Access

The policy objective is to increase opportunities for, and participation in, skills development. The principal means include greater public funding, articulated pathways, diversification of types of training, more private provision, and enhanced allocation mechanisms.

Increased public funding of TVET is an obvious way to increase access. Greater government financing can directly increase the supply of places or slots for training, and relatively low fees can stimulate demand. However, many countries face severe constraints in increasing funding for public TVET.

Greater flexibility in the system, through articulation within and between levels, facilitates access to skills. Barriers commonly exist, particularly between International Standard Classification of Education levels 4 and 5 institutions. *Articulated pathways* among the different levels can allow students to transfer and progress according to interests and performance. *National qualifications frameworks* (NQFs) can define pathways for lifelong learning and skills acquisition. They can provide equivalencies and the possibility to move laterally or vertically from one level to another. NQFs can encourage lifelong learning by providing clear pathways for progression. NQFs can integrate qualifications issued by different providers; support flexible pathways between sectors; and, in theory, encourage parity of esteem between academic and vocational qualifications. One of the features of NQFs is their focus on skills acquired, not avenues or length of training. However, success requires time, human capacities, and financial resources, which are usually scarce in developing countries (Young 2005; Allais 2010; Appendix 5, Box A5.8). This allows the recognition of prior learning, as has been started in Sri Lanka and Nepal (Appendix 5, Box A5.5).

Diversification of types of technical and vocational education and training provision can expand access. This applies particularly to the introduction of short, modular courses. This facilitates enrollment of more trainees, because programs can be completed in fewer years. Moreover, open distance education has the potential to enroll more trainees in some fields and to lower the cost per trainee. India provides TVET skills development through distance teaching: The programs of the National Institute of Open Schooling reach 20,000 entrants annually.

Mobile training can also expand access to rural and remote populations. Though mobile training has proved difficult to sustain, Mirpur Agricultural Workshop and Training School (MAWTS) in Bangladesh has had considerable success through its regional networks (Appendix 5, Box A5.3).

Private provision is a powerful way to increase access among those able to afford it. Private provision reduces pressure on public funding to pay for expansion of enrollments. A rationale for public support of private providers asserts that it can be less expensive and more efficient to pay a share of the costs of student enrollment in private institutions than to pay highly subsidized costs for new places in public institutions. Few countries provide direct public financing for private TVET, but some do, particularly at the postsecondary level: Chile, Republic of Korea, New Zealand, and the Philippines. Financial support need not be direct. Indirect—or demand-side financing—can help, where funding follows the trainees through loans and grants. Governments can also support private education through nonfinancial means by reducing barriers to entry or expansion. Such barriers may include onerous requirements for registration and certification, or bureaucratic red tape in changing or expanding programs. Tax incentives can also provide an incentive for the growth of private TVET.

Allocation mechanisms can provide powerful incentives to increase enrollment. Many governments have changed from negotiated budgets to some kind of formula as the main way to allocate funds to institutions. The most common formula uses inputs (trainees) as the basis for the allocations. Per trainee or per student financing is a relatively simple way to link allocations with effects. Uncapped enrollment-based funding formulas, as practiced in New Zealand, provide a strong incentive for institutions to find ways to enroll more trainees.

Promoting Equity

An important policy objective is to reduce disparities in the participation and completion rates of students by income, gender, ethnic group, and place of residence (urban, rural). Ensuring equitable access and completion remains a major struggle for many countries. Expanding formal TVET in its present form may simply concentrate further opportunities among the privileged.

Overall equity can be strengthened through early interventions to prevent school dropout, direct financial aid to lower direct costs, and allocation of support through vouchers. Gender equity requires preferential admissions, new programs for new occupations, and preparation of female instructors.

Intervene to promote equity at earlier stages. Most of the disadvantaged youths drop out before entry into formal TVET. Affirmative actions in TVET may come too late to assist disadvantaged students. Therefore, a strategic intervention would be to strengthen throughput and learning of disadvantaged students at lower levels in the education system—primary and secondary—to ensure that they attain the qualifications needed for entry into TVET.

Financial aid is an effective form of equity intervention. Needs-based grants can help close equity gaps. The key, of course, is targeting the grants properly.

Allocate funds directly to students rather than institutions. Financial transfer mechanisms that allocate resources to institutions are less effective in closing equity gaps. Negotiated budgets and funding formulas based on inputs (capitation, or per trainee grants) tend not to help disadvantaged students. This is because the institutions rather than the individuals receive the funds. In contrast, programs that support students and their families directly are more likely to be effective in increasing participation for this target group and closing equity gaps. One example is vouchers delivered to disadvantaged individuals, who then pay for their expenses in the training institution of choice. Alternatively, governments could pay institutions premiums for enrolling and graduating disadvantaged students. This would be a type of performance-based funding. The Nepal Employment Fund (Appendix 5, Box A5.6) provides premiums for priority target groups and pays based on results achieved.

Gender equity can be raised through a variety of initiatives. Affirmative action (i.e., preferential treatment) can help. An example is preferential admissions. Other interventions could be provision of gender-appropriate facilities (sanitary facilities, dormitories), gender sensitization courses, and training of female teachers and instructors. The most effective way may be to develop training programs in new, lucrative occupations that appeal to females. Systematic collection and analysis of data on gender indicators would be an essential first step.

STRATEGIES TO REFORM TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING GOVERNANCE AND MANAGEMENT

The objective is a proper distribution of roles, responsibilities, and authority among the various levels (macro, meso, micro) for achieving effective and efficient results in TVET.

TVET is arguably the most difficult education subsector to govern and manage because of the complexity in number and type of organizational sponsors, diversity of clients, varied types of delivery, and changing labor market demands. At the central level, unclear or inappropriate roles affect the sector. Mandates for the various supervisory organizations tend to be ill-defined in several countries. Fragmented and uncoordinated provision of training limits effective use of resources. Several key TVET organizations, particularly national training councils, lack the resources to carry out their functions. Lack of data and research on TVET is an almost universal handicap to progress. Managers of training institutions lack authority and incentives to improve their performance. Resources are not linked to outputs (ADB 2008c, 30).

Change the Role of the Central Government in Technical and Vocational Education and Training

Few would deny that governments should support skills development. Public intervention in training is justified by information failures (lack of knowledge about who should be trained in what), training externalities (labor

turnover and poaching mean that employers cannot recoup training investments), underdeveloped capital markets (inability of individuals to invest in developing their skills), income and other inequalities, and weak private provision in critical fields (ADB 2009).

However, governments may be attempting to carry out too many functions in promoting skills development. Regulation should be separated from training delivery to avoid conflicts of interest. Government may be justified in financing training, but that does not mean it should automatically also provide the training. Nongovernment training providers may be more effective and efficient in delivering the needed skills. Thus, training finance should be separated from training delivery.

Instead of being the direct provider of training, better results may be achieved by focusing on the government's role in functions that cannot be done, easily or at all, by other parties. These include oversight functions of training regulation, standards setting, examinations, development and dissemination of information on supply and market demands, and monitoring and evaluation of outcomes. Governments need to become more strategic instead of attempting to do all things. The role of governments could be to focus on four priorities:

- Foster partnerships with nongovernment providers and facilitate their growth and development.
- Promote social equity in training markets.
- Fill training gaps where nongovernment providers fail to respond, e.g., reaching the informal sector or promoting strategic technological skills.
- Perform functions not done ordinarily by nongovernment bodies, e.g., policy development, standards setting and examinations, regulation, instructor training, information, and evaluation (Johanson and Van Adams 2004, 186).

Reform Apex Institutions through Greater Authority and Better Integration of Diverse Providers

This review has identified two apex organizations for TVET. These important organizations have achieved much, but they have not yet eliminated duplication or coordinated fragmented training provision. TVEC in Sri Lanka has not integrated the four main delivery agencies, but rather combined them in one organization. This leads to duplication at the provincial levels, where four separate training agencies exist side by side. CTEVT in Nepal appears to lack sufficient authority vis-à-vis other ministries to carry out effective coordination. The subservience of CTEVT to MOE dilutes its authority. It has relatively low productivity for its level of staffing. Bangladesh lacks an apex organization, but the NSDC is an attempt at high-level coordination. It has relatively few members from enterprises or enterprise associations. The level of membership, chaired by the Prime Minister, suggests that it will not be able to meet regularly, so coordination is not assured. Moreover, the TVET organizations produce little information in any of the countries on the supply and demand of skills. Little research is carried out on performance of the training systems.

Further organizational development is needed. What should be done is better integration of “silos” in Sri Lanka’s TVEC, more authority given to CTEVT in Nepal, and generally more employer participation in governance. Development should start with an organizational audit of the apex organizations. Consideration should be given to the formation of a permanent apex authority in Bangladesh with strong employer representation and a full-time secretariat.

Devolve Authority to Public Training Institutions Combined with Accountability for Results

At the level of training delivery, none of the three main countries has devolved much authority to managers of public training institutions. Decisions on programs, teachers, and spending are still made at the center.

Centralized systems suffer from lengthy decision-making processes, remoteness from clients, and rigidity to change. Autonomy can stimulate resourcefulness and innovations, but it needs to be accompanied by greater accountability. Devolution of authority to training institutions can help make training responsive to demand. It may be possible to raise resources better at the local level. Links to employment can be much closer (ADB 2009, 20). Autonomy includes the authority to recruit trainees, hire and dismiss staff, establish wage and salary levels, reallocate budget among categories, carry forward unspent funds, and contract with outside agencies. Full devolution of authority to public training providers may not be practicable in all countries. Partial devolution—including decisions on program offerings, retention of self-generated revenue, and ability to hire instructors—may be more feasible. The TTCs in Bangladesh may be a model to follow, as they appear to have the freedom to offer new programs in response to demand and to generate, retain, and use income.

STRATEGIES TO MOBILIZE RESOURCES FOR SKILLS DEVELOPMENT AND USE THEM EFFICIENTLY

The policy objectives are to improve resource allocation to make the system more efficient, and to mobilize resources to achieve sustainability.

Financial obstacles can be surmounted in two ways: (i) making better use of existing resources or (ii) raising more resources. Better use of existing resources can be achieved either by increasing output for the same costs, or achieving the same output for less cost. The following section looks at ways to make better use of existing resources and to mobilize more resources for TVET.

Use Resources More Efficiently

As stated, public TVET tends to be underfunded, but existing resources could still be used to better effect. The first step toward greater efficiency—and one often neglected—is to establish a baseline and measure costs; then, to build financial management capacity for TVET institutions to achieve businesslike management of resources. Public funds can be saved by avoiding duplication within public provision as well as overlap with private provision. Public institutions should be concentrated in the fields important for national development that the private sector cannot or will not provide. Since private institutions tend to provide training in low-cost fields, such as information technology and commerce, government may not need to provide training in these fields. Additional measures for efficiency include the following: merge and consolidate institutions to realize economies of scale, increase class sizes where they are below regional or international averages, increase teaching loads where they are low through workload norms and standards, use part-time instructors, and drop training in specializations with low popular or economic demand.

Mobilize Resources to Achieve Sustainability

Cost-side solutions and more efficient use of resources are unlikely to suffice. A larger resource base is needed. In many cases, raising the needed resources can be considered the foremost challenge for TVET. One key finding of the review is that, despite potentially large gains in productivity, both governments and enterprises underinvest in training in South Asia. Public funds are limited, cannot meet demands, and are not likely to increase. Additional, nonpublic sources of financing must be found.

Build demand-side financing. One way to mobilize resources is to collect levies from enterprises for training purposes. The rationale of enterprise training funds, or enterprise incentive schemes, is to increase the productivity and competitiveness of firms by raising the skills of workers. The objective is to increase the incidence of training within firms. The source of financing is enterprise levies, usually on payroll. The modus operandi varies according

to the type of scheme: (i) cost reimbursement, (ii) levy-grant, and (iii) levy exemption (train or pay). Depending on type, the levies can reward companies that train and can penalize those that do not. Training levies can be viewed as demand-side financing, since the beneficiaries of training—the enterprises—pay the levy (Johanson 2009).

The advantages and limitations of levy systems are well known and are summarized in Table 5.

Table 5 Advantages and Limitations of Levy Systems

Advantages	Limitations
<ul style="list-style-type: none"> ■ Earmarked payroll levies can be viewed as “benefit taxation,” i.e., those who benefit (employers and workers) pay for the training. 	<ul style="list-style-type: none"> ■ Earmarked taxation does not conform well with the principles of sound public finance and weakens attempts to unify the national tax system.
<ul style="list-style-type: none"> ■ Levy systems can substantially augment the resource base for training. 	<ul style="list-style-type: none"> ■ Payroll levies raise the cost of labor to the employer, possibly discouraging employment.
<ul style="list-style-type: none"> ■ Increased training resources, in turn, can substantially increase the incidence of training. 	<ul style="list-style-type: none"> ■ Employers may shift the incidence of the levy onto workers in the form of lowered wages; in this case, workers and not the employers bear the burden of the tax.
<ul style="list-style-type: none"> ■ Levies can provide a steady and protected source of funding for training, particularly in the context of unstable public budgets. 	<ul style="list-style-type: none"> ■ Insecurity of income: Under fiscal pressure, government may divert levy proceeds into general public tax revenues for nontraining uses.
<ul style="list-style-type: none"> ■ Levy-grant systems can encourage firms to intensify their training efforts, increase training capacity, and raise training quality. 	<ul style="list-style-type: none"> ■ Unequal access: Many firms, particularly small ones, may not benefit from the scheme; this may breed resentment and opposition, and compromise the status of training levies as “benefit taxation.”
<ul style="list-style-type: none"> ■ Training levies collected from formal sector employers can serve as a vehicle for cross-subsidization, e.g., for smaller employers and especially for firms in the informal sector. 	<ul style="list-style-type: none"> ■ Inefficiency: Payroll levies may constitute an oversheltered source of funding, leading to unspent surpluses, inefficiencies, and top-heavy bureaucracies.
<ul style="list-style-type: none"> ■ Funds with tripartite management can forge cooperation among the social partners and facilitate formulation of appropriate training policies. 	<ul style="list-style-type: none"> ■ Red tape may erect high barriers for firms to access funds.
<ul style="list-style-type: none"> ■ Funds can influence the quality of training through accreditation procedures and help stimulate a competitive training market. 	
<ul style="list-style-type: none"> ■ Levy-financed funds can also help correct imbalances in training access by pooling funds, e.g., for training disadvantaged segments of society, the unemployed, and those in the informal sector. This redistribution can be termed “cross-subsidization.” 	
<ul style="list-style-type: none"> ■ Establishment of a separate training fund account can facilitate transparency and minimize distrust between employers and the public sector. 	

Sources: Ziderman (2003) and CEDEFOP (2008), as summarized in Table 3 of Richard Johanson. 2009. A Review of National Training Funds. SP Discussion Paper 922. Washington, DC: World Bank.

More than 60 economies in the world have used or are using training levies. Countries in South Asia have little or no tradition of using such levies, in contrast to East Asia, Europe, and Latin America. The Republic of Korea and Taipei, China had training levies at earlier stages of their economic development. Fiji, Malaysia, and Singapore have training levies at present. Chile uses a different approach—tax incentives—to stimulate worker training. Appendix 6, boxes A6.5–A6.8 discuss enterprise training incentives.

Sri Lanka is entering a stage of development—transition from factor-driven to efficiency-driven growth—in which it must increase value added per worker. In particular, Sri Lanka needs to improve its competitiveness in foreign markets to maintain its high growth momentum (SLCR). Greater investment in enterprise training could be instrumental to achieve greater productivity. In turn, a training levy could provide incentives for higher

enterprise training. In short, Sri Lanka should explore the introduction of a training levy, similar to that in Malaysia (Appendix 6, Box A6.5). Enterprises may initially resist, viewing the levy as another form of taxation to be spent by inefficient government bureaucracy. Therefore, how the levy is organized and who controls the money are of supreme importance. The best levy systems are those controlled by employers, as in Brazil and Singapore (Appendix 6, boxes A6.1 and A6.6). Training levies may be less appropriate in countries with less well-developed industries, e.g., where assembly-line work predominates and little staff training is necessary.

Provide financing to implement the recommendations of industry sector councils. Efforts have been successful in both Bangladesh and Sri Lanka to establish sector-specific industry advisory councils. These include eight industry sector councils (ISCs) in Bangladesh and seven sector policy and training advisory councils in Sri Lanka. The councils or committees typically advise on development of standards and training content, and sometimes more broadly on policies. However, interest to participate in these sectoral committees declines over time; they tend to become ineffective. This appears to be happening in Sri Lanka. To maintain engagement, sector committees should have funds at their disposal for implementing their recommendations, e.g., contracting training for the skills they deem in demand. Since the private sector would benefit and reap greater profits from this assistance, a reasonable level of cofinancing could be sought. Having funds at their disposal would give the councils more authority and sustain employer interest.

Attach performance conditions to financial transfers. As stated, the way funds are transferred is often of greater importance for results than the amounts transferred. At present, most public funds are transferred and spent without regard for performance. Good performance reaps no reward, and poor performance suffers no penalty. One way to boost performance is to attach conditions to financial transfers. This is termed performance- or output-based financing. Output-based financing requires, first, clear and measurable indicators of output and, second, valid and reliable information about the indicators. These conditions may have to be developed in the South Asian countries. Per student or per capita financing is a simple form of performance financing. It gives incentives to increase the number of students enrolled. More sophisticated systems pay training providers on the basis of results, such as trainees completing the program, passing standardized examinations, or obtaining employment—or even their level of income. The Employment Fund in Nepal (Appendix 5, Box A5.6) demonstrates that performance-based financing can work in a low-income country with external assistance and administration.

REGIONAL COOPERATION

It is important that South Asian countries learn from each other and from other regions. Many of the challenges they are facing have been experienced, addressed, and overcome by other countries. It would make sense to have a regional TVET center where good practices and innovations could be shared, and where regional experts, policy makers, and implementers could exchange experiences. However, this need not be a physical location. It would be better as a network for electronic exchange of information, along with occasional seminars and conferences. Such networks already exist, like the Network for Policy Research, Review and Advice on Education and Training and the International Vocational Education and Training Association,¹⁰ devoted to sharing TVET experiences worldwide. A subregional network could be created within these existing institutions.

INVESTMENTS

Appendix 7 provides a list of some possible investments for external support of TVET in the main countries of this review.

¹⁰ www.norrag.org; www.iveta.org

9 Conclusions

In the final analysis, what does this review tell us?

1. What can others learn from the experiences of the South Asian countries in this review?

- In all countries, enterprise associations indicated willingness, even eagerness, to play a bigger role in skills development (e.g., the Federation of Contractors Associations of Nepal [FCAN] and chambers of commerce and industry in Sri Lanka). Some enterprise groups have established training institutions to serve their skill needs, including several notable institutions in Bangladesh (boxes A5.1 and A5.2). However, in one case, enterprise management of trade training ran into the same problems as often experienced by governments (Appendix 5, Box A5.4).
- Widespread private provision indicates a strong social demand to pay for training when government is not willing or able to provide it. However, quality assurance fluctuates. Sri Lanka has made a salient effort at organizing and supporting private provision through the establishment of a private trainers association, the Accredited Training Providers' Association (ATPA) (Appendix 5, Box A5.10).
- The existence of four consolidated (apex) institutions for technical and vocational education and training (TVET) may be unique—Council for Technical Education and Vocational Training (CTEVT) in Nepal, Ministry of Youth Affairs and Skills Development (MYASD)/Tertiary and Vocational Education Commission (TVEC) in Sri Lanka, Ministry of Labour and Human Resources (MOLHR) in Bhutan, and the TVET Authority in the Maldives. The establishment of these apex institutions promises better coordination and efficiency, but the institutions have not capitalized fully on the advantages yet. TVEC in the Sri Lankan ministry needs further integration to avoid duplication, and CTEVT in Nepal needs independent authority outside the education ministry to act effectively, as well as separation of the regulatory function and service delivery.
- All countries intend to develop national vocational qualifications frameworks (NVQFs). These could be important to facilitate emigrant labor. Sri Lanka is furthest along in implementation of its NVQF, but its experience points to the difficulty in implementing national vocational qualifications (NVQ) systems (Appendix 5, Box A5.8).
- Several world-class domestic nongovernment organizations (NGOs) stand out for their successes in training disadvantaged groups, particularly the Underprivileged Children's Educational Program in Bangladesh. The challenge is how to expand these programs and enhance their sustainability.
- The South Asia experience also underscores the extensive impact of key institutions or centers of excellence (Appendix 5, Box A5.12 on Sri Lanka). Perhaps the most notable institution identified in this review is Training Institute for Technical Instruction (TITI) in Nepal, which, after 2 decades of external support, now provides training support to eight other countries.
- Contrary to trends elsewhere, apprenticeships are alive and well in Sri Lanka. The close relationship of the National Apprenticeship and Industrial Training Authority (NAITA) with enterprises provides a model from which other countries could learn (Appendix 5, Box A5.7).

- The review also identified the tangible application of performance conditions to training finance. The Employment Fund in Nepal has demonstrated the feasibility of using performance criteria for payments to private providers that train disadvantaged people (Appendix 5, Box A5.6).

2. What could the South Asian countries in this review learn from elsewhere?

- Governments and enterprises alike are underinvesting in skills development in the reviewed countries. East Asia and Latin America have taken different approaches.
 - In East Asia, governments provided massive support for skills development at different stages of development (the “development economies”: Republic of Korea; Singapore; and Taipei, China). TVET has been linked closely with economic development strategies (Figure 3 and Table 4).
 - Much of training in Latin America is employer led and financed (e.g., Brazil—Appendix 6, Box A6.1).
- Experiences in East Asia also underscore the usefulness of enterprise financing through training levies (e.g., Republic of Korea, Malaysia, Singapore—Appendix 6, boxes A6.5–A6.7).
- Finally, for those countries seeking greater international competitiveness, India exemplifies bold measures for public–private partnership (e.g., India: National Skill Development Corporation—Appendix 6, Box A6.3).

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APPENDIX 1

Socioeconomic Background

Population

The five countries in the “region” as defined in this review include two very small ones (Maldives with 300,000 people and Bhutan with 700,000), two countries of medium size (Sri Lanka with 21 million people and Nepal with 28 million), and one large country (Bangladesh with 146 million). Population growth rates are relatively low, ranging from 1.0% per year in Sri Lanka and 1.3% in Bangladesh to 2.2% in Nepal. The rate of urbanization is low in the three largest countries: 14% in Sri Lanka, 19% in Nepal, and 28% in Bangladesh. Age dependency ratios have dropped substantially, from 87% to 57% in Bangladesh between 1990 and 2010, from 85% to 68% in Nepal, and from 61% to 52% in Sri Lanka (see Appendix 2).

The poverty level varies widely, from 12% of the population living on \$2 (purchasing power parity) or less daily in the Maldives and 29% in Sri Lanka to 78% in Nepal and 81% in Bangladesh. Critical social indicators are given in Table A1.1.

Table A1.1 Socioeconomic Indicators

Indicator	Bangladesh	Bhutan	Maldives	Nepal	Sri Lanka
Poverty level (myr, % <\$2PPP/day)	81.3	49.5	12.2	77.6	29.1
Gini coefficient (myr)	0.332	0.468	0.374	0.473	0.403
Human development index (2010)	0.469	...	0.602	0.428	0.658
HDI rank (2010, of 169 countries)	129	...	107	138	91
Life expectancy at birth (2009, M+F)	66.6	66.5	72	67.1	74.3
Primary education completion (2009, M+F)	60.5	88.5	119.4	70.0	97.5
Adult literacy rate (M+F, 2009)	55.9	52.8	98.4	59.1	90.6

... = not available, HDI = human development index, myr = most recent year, PPP = purchasing power parity.

Source: ADB. 2011. *Key Indicators for Asia and the Pacific 2011*. Manila.

Labor Force

The labor force participation rate also varies widely according to per capita income among the three principal countries—from 49% in Sri Lanka and 59% in Bangladesh to 72% in Nepal. Most employment is in the informal sector—90% in Nepal and 80% in Bangladesh.

The total labor force in Sri Lanka grew from 6 million in 1990 to 8 million in 2010, an annual growth of 2%. The working age population (15–59 years) is expected to grow slowly, from an estimated 13.3 million in 2011 to 13.9 million in 2026, and decline slowly thereafter. The small projected growth of labor market entrants suggests a tightening of the job market and the need to increase the skill level of the labor force to continue and accelerate economic growth.

Bangladesh's total labor force stood at 57 million in 2008, with an annual average increase of more than 1.5 million new entrants, or an additional 3.7% per year. New entrants are expected to increase to about 2 million per year within 5 years. In Nepal, about 450,000 youths enter the labor market annually. These levels pose a major challenge for labor market absorption.

The educational level of the labor force is low in Bangladesh and Nepal. About half of the working-age population in Bangladesh had no schooling as of 2003. Another 17% had only grades 1–5 education. Thus, two-thirds had only basic or no education. In Nepal, most youths enter the labor market with limited education and few employable skills. An estimated one-third of entrants have dropped out of school before completing grade 5, and 85%–90% of original enrollees do not complete grade 10. Sri Lanka's labor force, by contrast, is becoming increasingly better educated. Between 1998 and 2008, the share of total employed with primary education or less declined from 33% to 20%. Conversely, the share with lower secondary education rose from 39% to 48%.

In Bangladesh, the share of the population with formal technical and vocational education and training (TVET) qualifications is miniscule. For every person in the labor force with a TVET qualification, there were 104 with secondary education and 34 with a university degree (World Bank 2010, 24).

Unemployment is relatively low, as would be expected of low-income, subsistence economies, but underemployment is substantial. In Nepal, unemployment averages 7.5% in urban areas and 1.2% in the countryside (about 2.2% overall). Underemployment represents about 31% of the total Nepalese labor force. In Bangladesh, unemployment is low at about 4%, but underemployment reaches 17% and is especially prevalent among females (53%) and in agriculture (20%).

Gross Domestic Product per Capita

Each country in the region experienced growth in gross domestic product (GDP) per capita over the past 2 decades, but rates of growth differed (Figure A1.1). GDP per capita more than doubled in Nepal from \$210 to \$490, and grew from \$270 to \$640 in Bangladesh. It almost quintupled in Sri Lanka from \$470 to \$2,290, mostly in the last decade.

GDP per capita remains low in Nepal at \$490—the lowest in the entire Asian region—and is \$640 in Bangladesh.

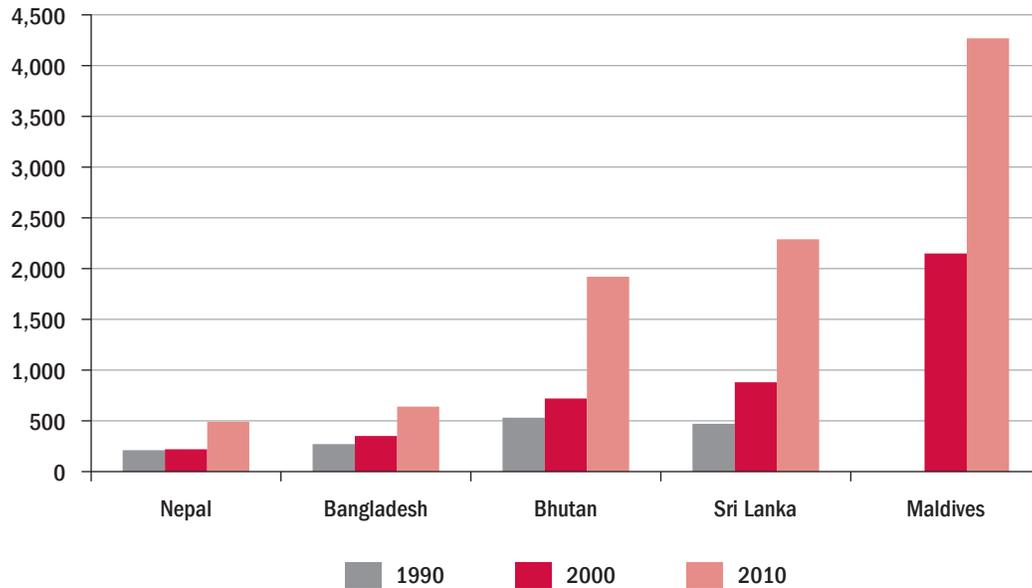
The Economy

Each of the main economies in the region underwent significant changes in composition of GDP and employment (Figure A1.2). Generally, the three main economies have shifted away from agriculture into higher value-added manufacturing and service-oriented activities. The share of agriculture in both employment and output declined in all three main economies.

Except for Sri Lanka, which was steady, the share of industry increased in value added, particularly in Bangladesh (from 22% to 29%) (Figure A1.3). Employment in industry increased from 3% to 10% in Nepal, and from 19% to 25% in Sri Lanka.

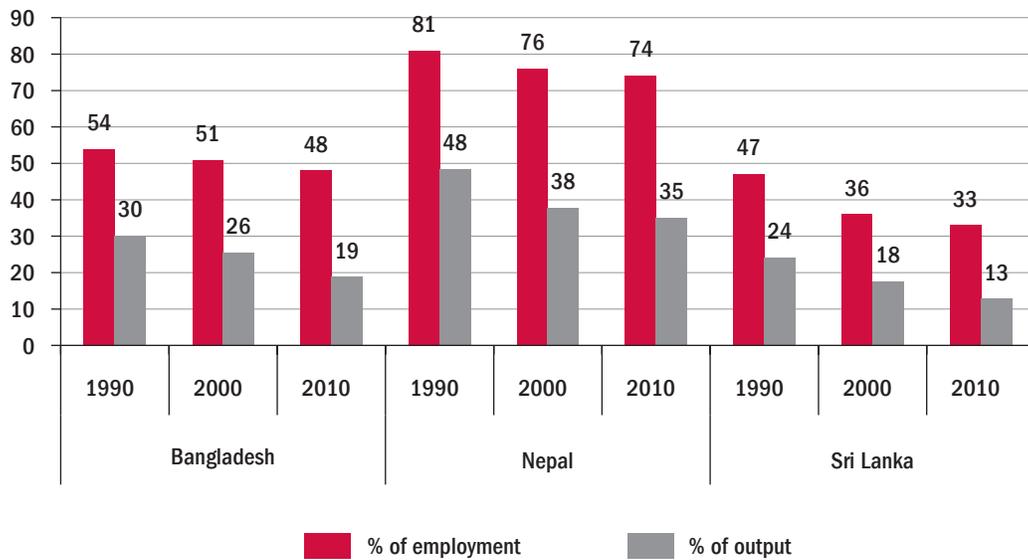
Value added from services increased in all three countries to account for more than half of output in each country (Figure A1.4). The share of employment in services remained the same in Nepal and increased by eight percentage points in Bangladesh and nine points in Sri Lanka. The emergence of the industry and services sectors as the main sources of employment in the three economies indicates potential demand for TVET services over the next 10 years. With the emergence of knowledge-based economic activities, production systems in the industry and services sectors involve application of new technology and, hence, provision of high-quality technical and vocational skills is a prerequisite for growth and development.

Figure A1.1 Gross Domestic Product per Capita, 1990, 2000, and 2010 (\$)



Source: Table 2.2 in ADB. 2011. *Key Indicators for Asia and the Pacific 2011*. Manila.

Figure A1.2 Agriculture's Share in Employment and Output, 1990, 2000, and 2010 (% of total)



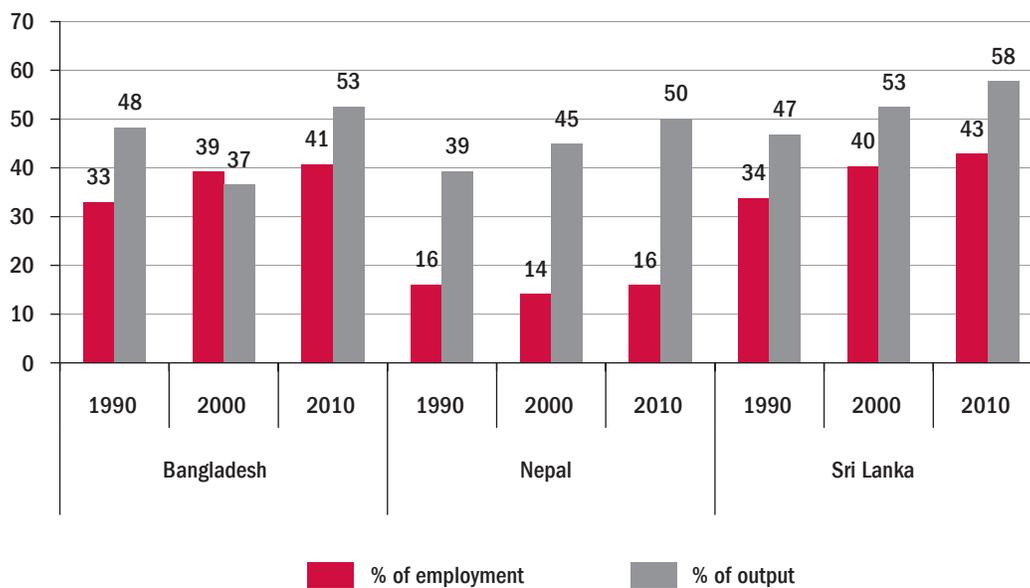
Source: Tables 1.1 and 2.4 in ADB. 2011. *Key Indicators for Asia and the Pacific 2011*. Manila.

Figure A1.3 Industry's Share in Total Employment and Output, 1990, 2000, and 2010 (% of total)



Source: Tables 1.1 and 2.4 in ADB, 2011. *Key Indicators for Asia and the Pacific 2011*. Manila.

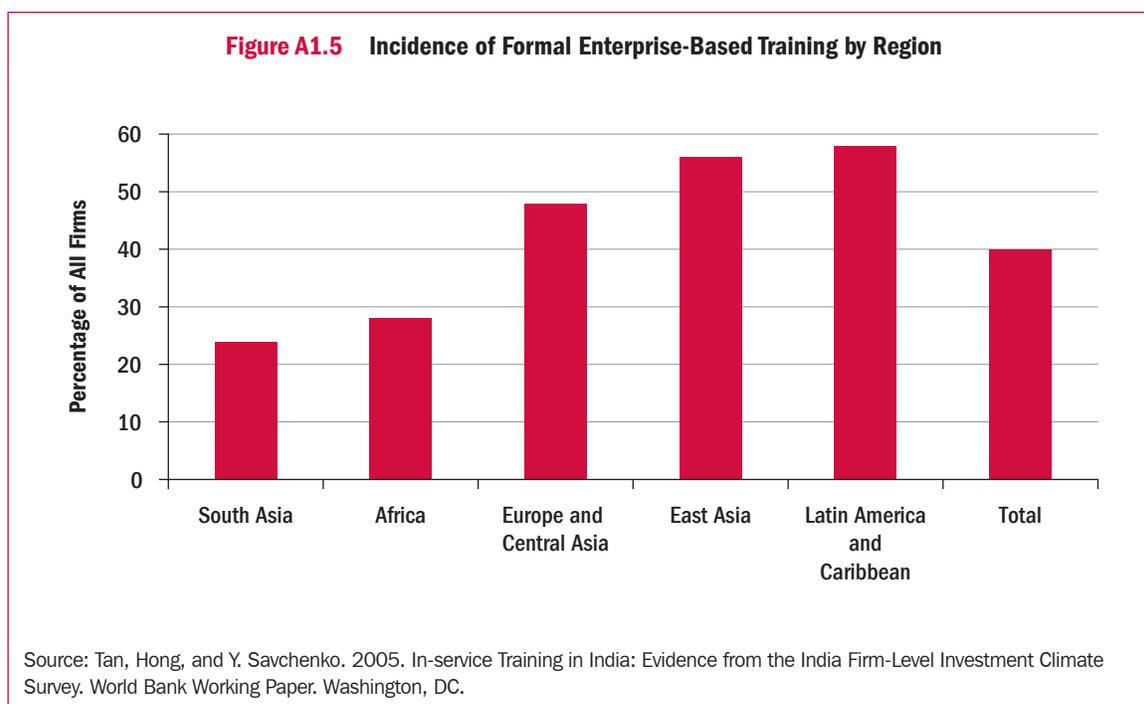
Figure A1.4 Services' Share in Total Employment and Output, 1990, 2000, and 2010 (% of total)



Source: Tables 1.3 and 2.6 in ADB, 2011. *Key Indicators for Asia and the Pacific 2011*. Manila.

Competitiveness Indicators

Enterprises in South Asia tend to provide less formal training for their workers than in other regions, particularly in comparison with East Asia (Figure A1.5).



Sri Lanka compares favorably with the rest of South Asia in its ranking on global competitiveness, but less well in comparison with Southeast Asia (tables A1.2 and A1.3). Both Bangladesh and Nepal score well on macroeconomic environment but poorly on infrastructure and technological readiness (Figure A1.6).

Table A1.2 Global Competitiveness—Selected Asian Countries, 2010 (rank out of 139 countries)

Country	Overall	Institutional	Infrastructure	Macroeconomic Environment	Technological Readiness	Efficiency Enhancers
Malaysia	26	42	30	41	40	24
China, People's Republic of	27	49	50	4	78	29
Thailand	38	64	35	46	68	39
Indonesia	44	61	82	34	91	51
India	51	58	86	73	86	38
Viet Nam	59	74	83	85	65	57
Sri Lanka	62	55	70	124	84	69
Bangladesh	107	115	133	80	126	97
Nepal	130	130	139	86	134	131

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

Table A1.3 Competitiveness of Higher Education and Training (rank out of 139 countries)

Country	Secondary Enrollment	Tertiary Enrollment	Quality of Education System	Quality of Math and Science Education	Quality of Management Schools	Internet Access in Schools	Local Availability of Specialized Research and Training Services	Extent of Staff Training
Sri Lanka	73	96	44	47	37	82	46	37
Malaysia	99	73	23	31	35	36	25	13
China, People's Republic of	92	88	53	33	63	22	50	57
Thailand	96	54	66	57	58	43	69	62
Indonesia	95	89	40	46	55	50	52	36
Viet Nam	102	109	61	51	107	49	104	58
India	108	101	39	38	23	70	51	59
Bangladesh	116	116	94	105	86	133	127	129
Nepal	117	119	116	109	125	112	132	137

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

In the human development index, Bangladesh, Nepal, and Sri Lanka ranked 129, 138, and 91, respectively, out of 161 countries in 2010. In the global competitiveness index, Bangladesh, Nepal, and Sri Lanka ranked 108, 125, and 52, respectively, out of 142 countries in 2011–2012. In terms of stage of development, Bangladesh and Nepal are operating at the factor-driven stage, while Sri Lanka is transiting from the factor-driven to the efficiency-driven stage (Figure A1.6). At this point, economies operating at the factor-driven stage need to concentrate more on skills development and enhancing productivity in order to reach the next stage of development. Similarly, countries transiting from the factor-driven to the efficiency-driven stage need to concentrate more on efficient production processes and product quality. High-quality human capital, particularly in TVET, is one of the key productivity enhancers. Hence, strategic investments in the TVET sector by these three economies would lead to long-term economic benefits to their national economies. Given the highly globalized nature of economic activities and competitive pressures in both the product and factor markets, these three economies need to invest in skills development to exploit their full development potential. In particular, such skills are needed to adapt rapidly to changing competitive environments and evolving needs of the production system.

Remittances

Migrant workers' remittances consist of earnings of persons who work abroad for only a few months in a year, transfers of capital when people change their country of residence, and money sent back to the home country by migrants working abroad for several years at a time. The last of these is by far the largest component and, for simplicity, all three kinds of transfers are referred to here as migrants' remittances (ADB 2011d, 210).

Migrants' remittances have increased in the three principal countries in this review and are a vital source of income. Bangladesh earned \$11 billion in 2010 from worker remittances, Nepal \$3.5 billion, and Sri Lanka \$4.1 billion (Figure A1.7).

Workers' remittances account for almost one-quarter of GDP in Nepal (22%), 12% in Bangladesh, and 8% in Sri Lanka (Figure A1.8). Work abroad is also an important source of employment in these three economies. The vast bulk of migrants work as housemaids or unskilled workers. In spite of high remittances and a high proportion of migrant workers in total employment, none of the three economies provides TVET services for migrant workers to upgrade their qualifications as skilled workers.

Figure A1.6 Stage of Economic Development

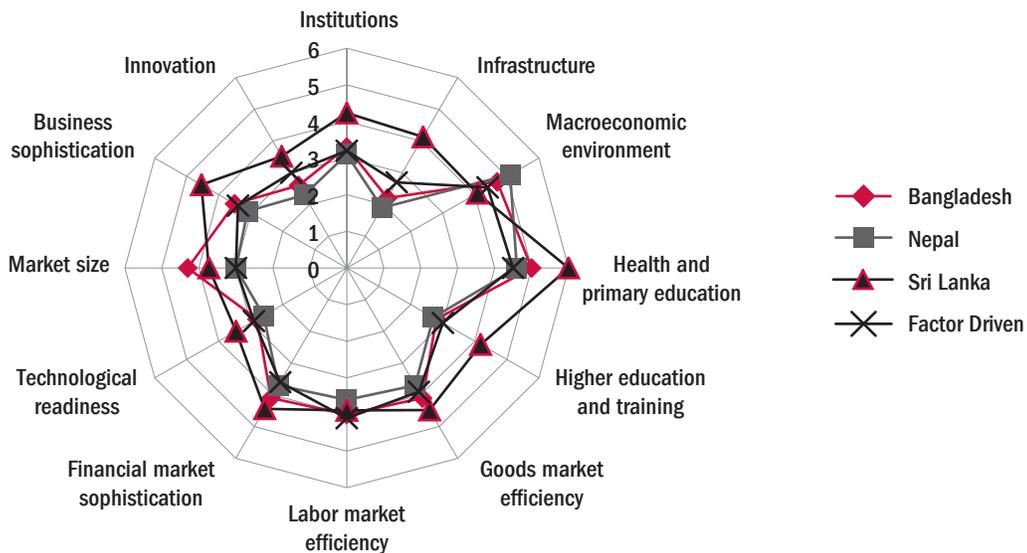
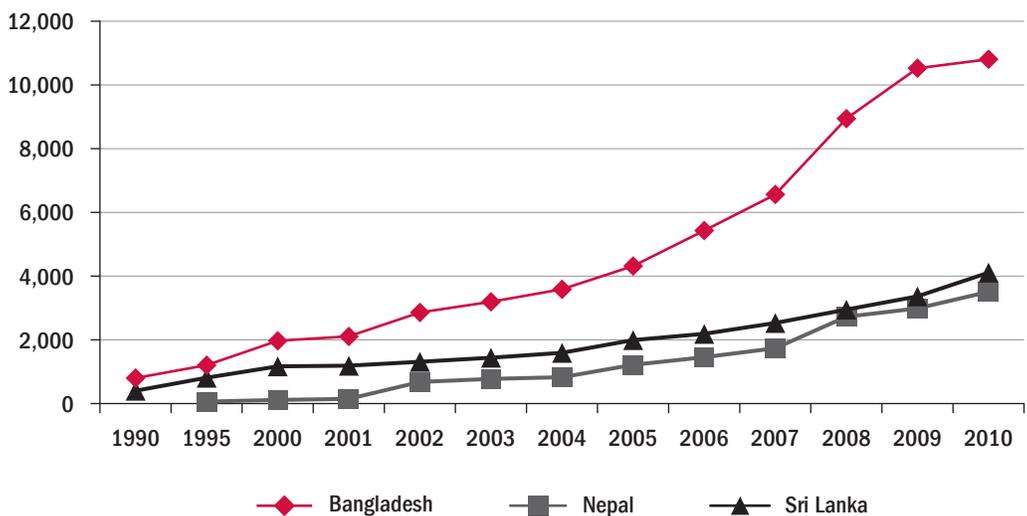
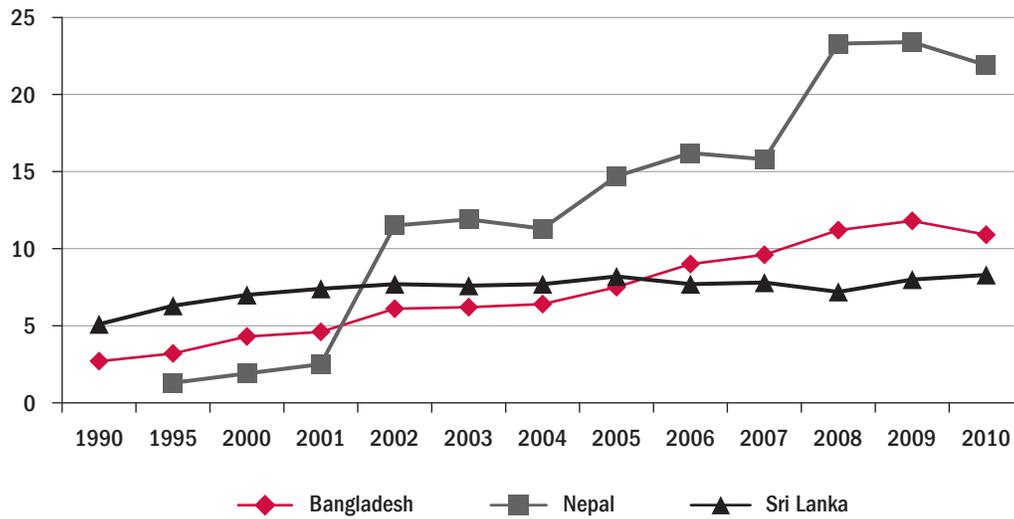


Figure A1.7 Migrant Workers' Remittances, 1990–2010 (\$ million)



Source: Calculated from Table 4.5 in ADB. 2011. *Key Indicators for Asia and the Pacific 2011*. Manila.

Figure A1.8 Migrant Workers' Remittances as Percentage of GDP, 1990-2010

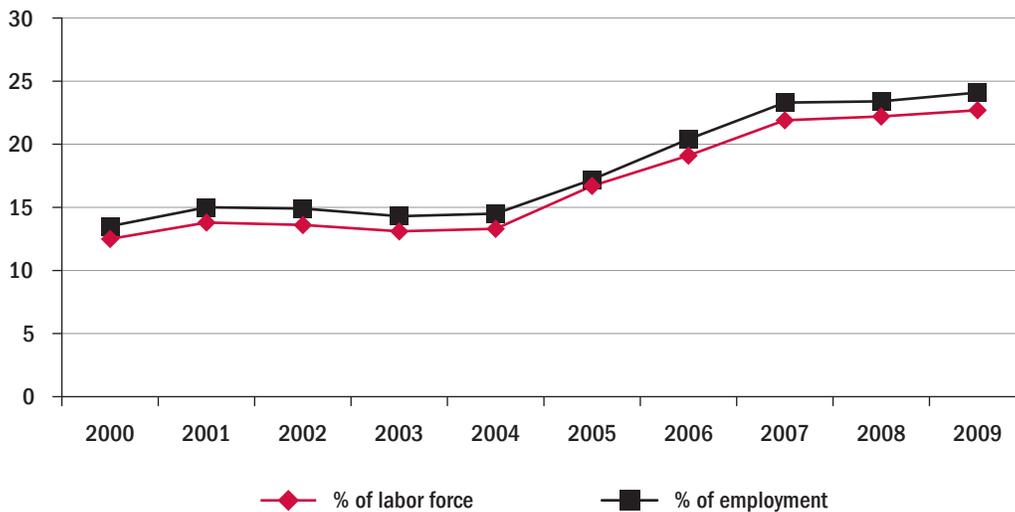


Source: Calculated from Table 4.4 in ADB. 2011. *Key Indicators for Asia and the Pacific 2011*. Manila.

The relative importance of remittances increased dramatically in Nepal from 2% in 2000 to 11% in 2004 and a high of more than 23% in 2009 (Figure A1.8).

Work abroad can also have a dramatic impact on employment. In Sri Lanka, almost one-fourth of the labor force is employed outside the country (Figure A1.9).

Figure A1.9 Sri Lanka: Foreign Employment as Percentage of the Labor Force and of Employment, 2000-2009



Source: Central Bank annual reports as presented in ADB. 2011b. *Innovative Strategies in Technical and Vocational Education and Training (TVET) for Accelerated Human Resource Development in South Asia: Sri Lanka Country Report*. Draft. May. Consultant's report. Manila (TA 6337-REG).

About 400,000 Bangladeshis left for employment abroad in 2010, the vast majority as unskilled workers. In Nepal, an estimated 3 million Nepalese workers are resident abroad, and 354,000 Nepalese were granted approval for foreign employment by the government in 2010. About 90% of migrant workers are employed in construction and 90% as unskilled labor. Some 30% of Nepali households received remittance income in 2010 (NCR).

Employment abroad helps raise hard currency, but it also has drawbacks. These include social problems, abuse of workers living abroad, absence from families, and shortages of workers in-country.

Informal Economy

The informal economy accounts for a significant share of employment in all three countries.¹ In Bangladesh, almost 80% of the labor force work in the informal sector and about two-thirds of those employed outside the agriculture sector (Table A1.4). Only about 14% of those employed in the country are in wage employment.

Table A1.4 Bangladesh: Approximate Share of Labor Force in the Informal and Formal Sectors, Agriculture and Nonfarm

	Formal		Informal		Total	
	No. ('000)	% of Total	No. ('000)	% of Total	No. ('000)	% of Total
Agricultural	998	3	15,994	46	16,992	49
Nonfarm	6,257	18	11,228	33	17,485	51
Total	7,255	21	27,222	79	34,477	100

Source: Bangladesh Country Report, calculated from data in World Bank. 2007. *Learning for Working Opportunities: An Assessment of the Vocational Education and Training in Bangladesh*. Washington, DC. p. 4.

In Nepal, more than 90% of the 12 million workers are estimated to be employed in the informal sector, including 70% of nonagricultural employment.

In Sri Lanka, the informal economy is estimated to account for 60%–70% of total employment, including about 85% in agriculture and 50% in nonagriculture (Table A1.5). Within the nonagriculture sector, the share of the informal sector was about 80% in construction, about 50% in hotels and restaurants and manufacturing. Females account for about two-thirds of informal sector employment. The growth of the informal sector has been due to the limited absorptive capacity of the formal sector.

Table A1.5 Sri Lanka: Approximate Share of Employment by Formal and Informal Sectors, 2009

Employment	Formal		Informal		Total	
	No. ('000)	%	No. ('000)	%	No. ('000)	%
Agriculture	355	14.4	2,120	85.6	2,476	100
Nonagriculture	2,539	49.5	2,586	50.5	5,126	100
Total	2,894	38.1	4,708	61.9	7,602	100

Source: ADB. 2011b. *Innovative Strategies in Technical and Vocational Education and Training (TVET) for Accelerated Human Resource Development in South Asia: Sri Lanka Country Report*. Draft. May. Consultant's report. Manila (TA 6337-REG).

¹ "The informal sector represents an important part of the economy, and certainly of the labor market, in many countries and plays a major role in employment creation, production and income generation. In countries with high rates of population growth or urbanization, the informal sector tends to absorb most of the expanding labor force in the urban areas. Informal employment offers a necessary survival strategy in countries that lack social safety nets, such as unemployment insurance, or where wages and pensions are low, especially in the public sector" (ILO. 2011. *Key Indicators of the Labour Market (KILM)*, 7th Edition. Geneva: International Labour Organization. http://www.ilo.org/empelm/pubs/WCMS_114060/lang--en/index.htm).

The India National Skills Development Policy states: "Approximately 93 per cent of the country's work force is in the unorganized sector. The sector cuts across all economic activities and includes rural and urban areas. It contributes to about 60 per cent of the country's GDP" (p. 28).

APPENDIX 2

Socioeconomic Indicators

Social Indicators	Year	Study Countries					Reference		Remarks
		Bangladesh	Bhutan	Maldives	Nepal	Sri Lanka	India	Pakistan	
Population (million)	2010	146.2	0.7	0.3	28.3	20.7	1182.1	166.5	
Population growth rate (%)	2010	1.3	1.8	1.7	2.2	1.0	1.4	2.1	
	2000	1.4	1.3	1.5	2.1	1.4	1.8	2.3	
	1990	2.2	1.3	2.5	2.1	-3.3	2.1	2.7	
Urban population (% of total)	2010	28.1	34.7	40.1	18.6	14.3	30.0	35.9	
	2000	23.6	25.4	27.7	13.4	15.8	27.7	33.1	
	1990	19.8	16.4	25.8	8.9	18.6	25.5	30.6	
Age dependency ratio	2010	57.1	53.0	47.6	68.5	51.5	56.1	66.7	
	2000	71.4	80.0	79.7	81.2	50.5	64.6	83.8	
	1990	86.8	85.8	100.0	84.5	61.4	72.4	91.5	
Labor force participation rate (%)	mry	58.5	68.6	67.1	71.5	48.6	39.2	45.9	
Unemployment rate (%)	mry	4.2	3.3	14.4	8.8	4.9	3.1	5.6	
Employment in agriculture (% of total)	2010		59.4	11.5		32.5		45.1	
	2000	50.8		13.7	76.1	36.0	59.9	48.4	
	1990			25.2	81.2	46.8		51.1	
Employment in industry (% of total)	2010	11.2	6.6	24.3		24.6		13.4	
	2000	10.0		19.0	9.8	23.6	16.3	11.6	
	1990	13.0		22.4	2.7	19.4		12.8	
Employment in services (% of total)	2010	40.7	34.0	64.2		42.9		41.5	
	2000	39.2		67.3	14.1	40.3	23.7	40.0	
	1990			52.4	16.1	33.8		36.1	
Poverty level	mry	81.3	49.5	12.2	77.6	29.1	75.6	60.9	Proportion of population living below \$2 PPP per day
Gini coefficient	mry	0.332	0.468	0.374	0.473	0.403	0.368	0.327	
Human development index	2010	0.469		0.602	0.428	0.658	0.519	0.490	
Rank	2010	129		107	138	91	119	125	Of 169 countries in the UNDP Human Development Report 2010

continued on next page

Continued from previous page

Social Indicators	Year	Study Countries					Reference		Remarks
		Bangladesh	Bhutan	Maldives	Nepal	Sri Lanka	India	Pakistan	
Life expectancy at birth	2009	66.6	66.5	72.0	67.1	74.3	64.1	66.9	Both genders
Primary education completion rate	2009	60.5	88.5	119.4	70.0	97.5	94.8	61.1	Both genders
Adult literacy rate	2009	55.9	52.8	98.4	59.1	90.6	62.8	55.5	Both genders
GDP/capita at PPP	2010	1,677	5,167	8,016	1,255	5,098	3,535	2,791	
	2000	967	2,905	4,345	917	2,848	1,720	1,780	
	1990	870	1358	3100	943	2,820	1,568	1,691	
GDP/capita - atlas method	2010	640	1920	4270	490	2,290	1,340	1,050	
	2000	350	720	2150	220	880	450	490	
	1990	270	530		210	470	390	420	
Agriculture value added (% of total)	2010	18.8	18.7	5.3	35	12.8	19.0	21.2	
	2000	25.5	27.4	6.9	37.8	17.6	23.4	25.9	
	1990	30.2	34.9		48.4	24.2	29.3	26.0	
Industry value added (% of total)	2010	28.5	42.0	12.4	15.0	29.4	26.3	25.4	
	2000	25.3	36.0	13.6	17.3	29.9	26.2	23.3	
	1990	21.5	24.6		12.3	28.9	26.9	25.2	
Services value added (% of total)	2010	52.6	38.1	82.8	50.1	57.8	54.7	53.4	
	2000	36.6	36.6	79.9	44.9	52.5	50.5	50.7	
	1990	48.3	40.5		39.3	46.9	43.8	48.8	
Export of goods and services (% value added)	2010	18.5	64.7		9.8	21.7	21.5	13.6	
Real growth rates of GDP (%)	2010	5.8	6.7	9.9	4.6	8.0	8.5	3.8	
	2000	6.0	6.9	4.8	6.0	6.0	4.4	3.9	
	1990	5.9	2.4	16.9	4.7	6.2	5.3	4.6	
Per capita GDP growth rates (%)	2010	4.5	4.8	8.1	2.3	6.7	7.1	2.4	
	2000	4.5	5.6	3.2	3.8	4.5	2.6	1.6	
	1990	3.7	1.1	14.1	2.6	9.9	3.1	1.9	
Migrant workers' remittances (% of GDP)	2010	10.9		0.2	21.9	8.3	3.3	5.9	
	2000	4.3		0.4	1.9	7.0	3.0	1.6	
	1990	2.7				5.1	0.8	5.7	
% GDP spent on education	mry	1.9	5.9	7.0	4.0	1.9	3.0		

GDP = gross domestic product, mry = most recent year, PPP = purchasing power parity, UNDP = United Nations Development Programme. Source: ADB. 2011. *Key Indicators for Asia and the Pacific 2011*. Manila.

APPENDIX 3

Description of Technical and Vocational Education and Training Systems in South Asia

Structure of Delivery

The structure of technical and vocational education and training (TVET) differs in each of the three main countries in this review. Bangladesh and Nepal feature mostly lengthy, formal, school-based TVET. The TVET system in Bangladesh has three levels: (i) basic course <360 hours; (ii) secondary divided into two stages—secondary school certificate (SSC [voc]) and higher secondary certificate (HSC [voc]) of 2 years' duration each; and (iii) 4-year diplomas at polytechnics and monotechnic institutions.

The system in Nepal also has three levels: (i) short-term vocational programs of less than 1 year; (ii) upper secondary technical certificate programs (TSLC for about 2 years after grade 10) provided in technical schools; and (iii) postsecondary certificate and diploma programs of 3 years in polytechnics and institutes. One interesting feature of the Nepalese system is the use of “annex schools” to deliver technical and vocational skills more widely than could be accomplished with only stand-alone institutions. Annex schools are public (government) secondary schools equipped with additional physical facilities (equipment, machines, and tools), but not the building and land, to offer TVET programs during off-school hours (mornings and evenings). They use the same school administration, accounting, and support services. Technical instructors are hired or deputed to annex schools to implement the courses and programs. In 2010, there were 16 annex schools under supervision of the Council for Technical Education and Vocational Training (CTEVT), with an additional 12 planned.

The system in Sri Lanka is somewhat different. No vocational courses are provided within the formal secondary system. Postsecondary technical colleges and colleges of technology provide certificates and diplomas under the Department of Technical Education and Training (DTET). Three other agencies provide nonformal¹ training: The Vocational Training Authority has an extensive network of rural training centers. The National Youth Services Council operates 32 training centers. The National Apprenticeship and Industrial Training Authority (NAITA) supports various forms of apprenticeship and dual training; it is closely aligned with employers.

Institutions and Enrollments

Tables A3.1–A3.3 provide an overview of the dimensions of the TVET systems by level and country. Total identified enrollment in TVET is 387,554 in Bangladesh, 83,770 in Nepal, and 123,869 in Sri Lanka.²

Bhutan enrolls about 800 students in eight public vocational training and other institutes, of whom about one-third are female. The entry level is grade 10 completion. In addition, the Royal University of Bhutan enrolls about 420 students in technical diploma programs. Private provision focuses mainly on information technology and has a total capacity of 1,200 students, about equal to total public provision. In higher secondary schools, the commercial stream accounts for 45% of enrollments.

¹ Meaning outside the formal system of education and training.

² These data are only rough estimates, particularly for private/nongovernment provision, on which documentation is incomplete.

Table A3.1 Bangladesh: Technical and Vocational Education and Training Institutions and Enrollment by Level and Type, 2011

Level and Type	Institutions				Enrollment				
	Total	Public	Private	% Private	Total	Public	Private	% Private	
Postsecondary	385	76	309	80	159,086	101,766	57,320	36	
Secondary	HSC (voc)	65	65	0	0	15,189	15,189	0	0
	SSC (voc)	2,048	164	1,884	92	162,429	34,110	128,319	79
Basic (NSS)	750	53	697	93	50,850	4,068	46,782	92	
Total	3,248	358	2,890		387,554	155,133	232,421		

HSC (voc) = higher secondary certificate (vocational), NSS = National Skill Standards, SSC (voc) = secondary school certificate (vocational).

Source: Bangladesh Country Report based on Bangladesh Technical Education Board data. See ADB. 2011c. Innovative Strategies in TVET for Accelerated Human Resource Development in South Asia: Country Paper: Bangladesh. Draft. November. Consultant's report. Manila (TA 6337-REG).

Data for Nepal are shown in Table A3.2.

Table A3.2 Nepal: Technical and Vocational Education and Training Institutions and Enrollment by Level and Type, 2009

Level	Private		Public/NGO and Endowed Trust		Total	
	Institutions	Enrollment	Institutions	Enrollment	Institutions	Enrollment
Postsecondary (Diploma) ^a	278	11,040	38	1,604	316	12,640
Secondary (TSLC) ^b	...	...	...	...	278	11,030
Skill Certificates ^c	...	...	...	...	387	60,100
Total	...	...	...	...	981	83,770

... = not available, CTEVT = Council for Technical Education and Vocational Training, NGO = nongovernment organization, TSLC = technical school leaving certificate.

^a Provided at polytechnics, technical colleges, and institutes.

^b Provided at technical schools, polytechnics, and annex schools.

^c Provided at vocational skills training centers, trade schools, and skills development training centers.

Source: Nepal Country Report based on CTEVT data. See ADB. 2010. Innovative Strategies in TVET for Accelerated Human Resource Development in South Asia. Country Paper: Nepal. Draft. December. Consultant's report. Manila (TA 6337-REG).

Data for Sri Lanka do not distinguish among levels and types, but show the relative shares of public and private ownership and enrollments (Table A3.3).

Table A3.3 Sri Lanka: Registered Technical and Vocational Education and Training Institutions, 2009

Sector	Number of Accredited Institutes		Student Enrollment		No. of Courses Accredited	
	Institutes	%	Enrollment	%	Accredited	%
Public sector	257	38.2	87,774	70.9	356	64.1
Private sector	336	50.0	23,535 ^a	19.0	199 ^b	35.9
NGO sector	79	11.8	12,560 ^a	10.1		
Total	672	100.0	123,869	100.0	555	100.0

NGO = nongovernment organization.

Note: There are many more registered private and nongovernment providers than accredited providers.

^a Subjective estimates.

^b Covers both private and NGO-owned institutions.

Source: Sri Lanka Country Report, based on technical and vocational education and training data. See ADB. 2011b. Innovative Strategies in Technical and Vocational Education and Training (TVET) for Accelerated Human Resource Development in South Asia: Sri Lanka Country Report. Draft. May. Consultant's report. Manila (TA 6337-REG).

Enrollments by main government agency in Sri Lanka are shown in Table A3.4.

Table A3.4 Sri Lanka: Enrollment in Public Technical and Vocational Education and Training by Agency

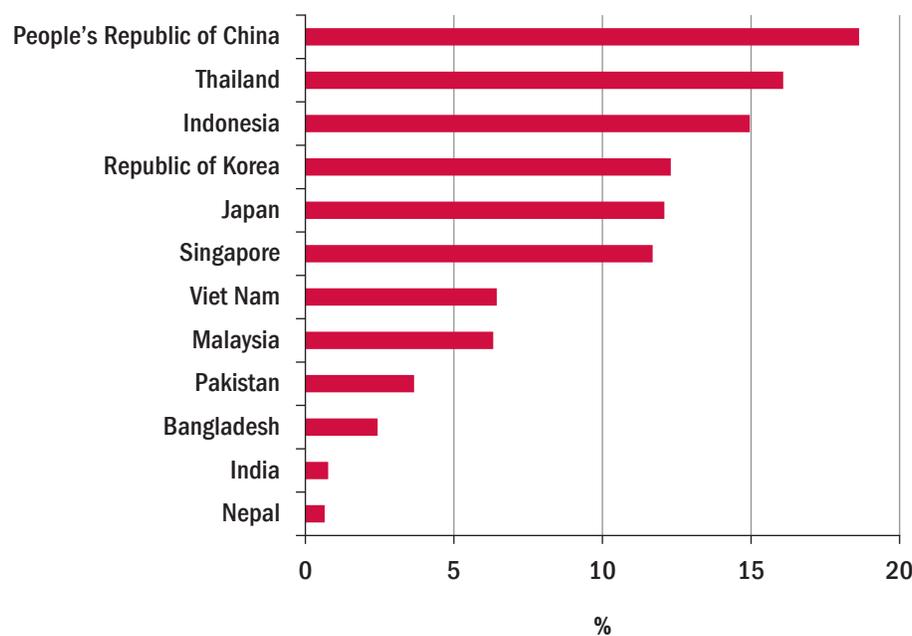
Agency	NVQF Levels	No. of Institutions	Enrollment	
			2010	2011 (est.)
DTET	3–6	37	13,500	23,100
VTA	1–4	270	26,300	33,900
NYSC	1–4	32	10,200	13,700
NAITA	2–4	53	25,200	33,600

DTET = Department of Technical Education and Training, NAITA = National Apprenticeship and Industrial Training Authority, NVQF = National Vocational Qualifications Framework, NYSC = National Youth Service Council, VTA = Vocational Training Authority.

Source: ADB. 2011b. Innovative Strategies in Technical and Vocational Education and Training (TVET) for Accelerated Human Resource Development in South Asia: Sri Lanka Country Report. Draft. May. Consultant’s report. Manila (TA 6337-REG). (Also referred to as “Sri Lanka Country Report” or “SLCR”).

Compared with general education, enrollments in formal TVET in South Asia are relatively small (Figure A3.1).

Figure A3.1 Enrollment in Secondary Technical and Vocational Education as Percentage of Total Secondary Enrollment, Selected Asian Countries, 2008

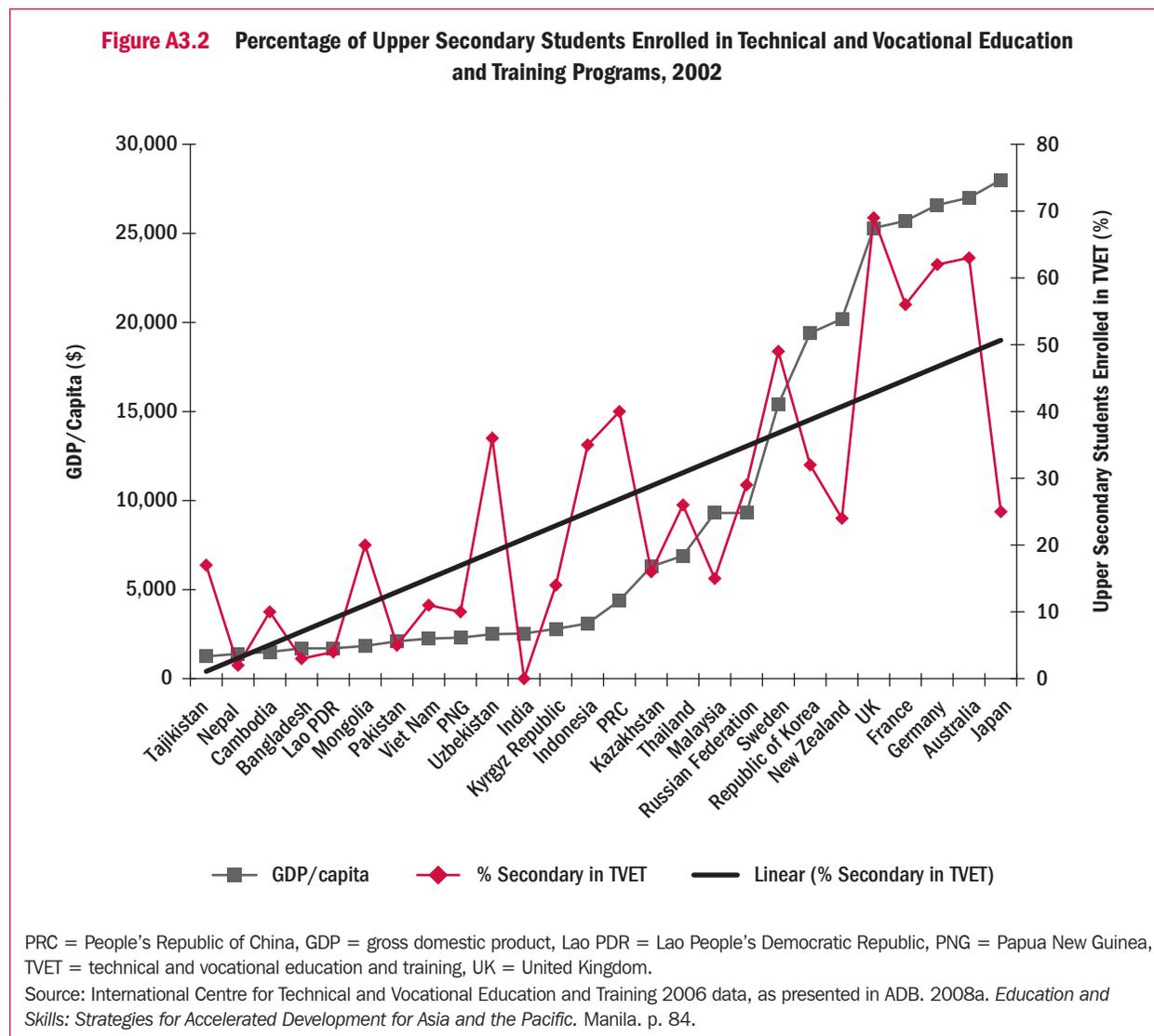


Note: Sri Lanka does not provide technical and vocational education as part of secondary education.
Source: Annex Table 7 in UNESCO. 2011. *Education for All Global Monitoring Report 2011*. Paris.

Enrollment in secondary technical–vocational programs was just 0.7% of total secondary enrollment in Nepal and 2.4% in Bangladesh. No data are shown for Sri Lanka, because technical–vocational is not a separate stream in secondary education. More advanced countries in the region tend to have higher proportions of secondary

students enrolled in technical–vocational courses, ranging from Malaysia and Viet Nam with about 6% to Thailand with 16% and the People’s Republic of China with 19%. The proportions would be even higher if just upper secondary were compared with TVET, which is largely at that level.

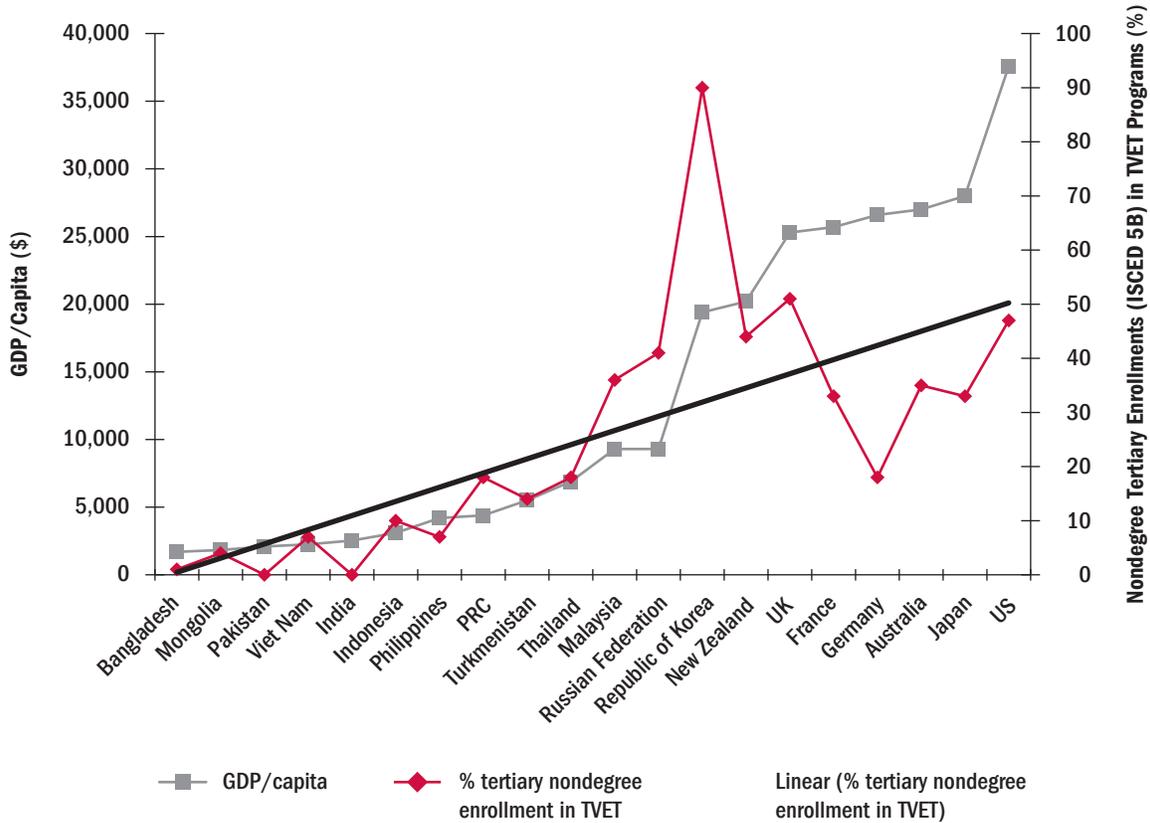
Figure A3.2, using earlier data for a wider range of countries according to per capita income, shows the proportion of TVET in total secondary enrollment.



In Figure A3.2, Nepal and Bangladesh fall at the lower end. The same general pattern holds for postsecondary, nondegree programs, as shown in Figure A3.3. Bangladesh again appears at the bottom of the chart.

Private institutions and their enrollments are significant. In Bangladesh, private providers make up about 95% of total formal TVET institutions and accommodate about three-fourths of total enrollments (Dohmen 2009, 25). In Bhutan, enrollment in private training institutions—1,200 students—equals that in private institutions. In Nepal, private training provision has grown substantially: compared with 3 accredited private institutions in 1991, the number grew to 110 in 2000 and currently stands at more than 450. In Sri Lanka, at the end of 2010,

Figure A3.3 Percentage of Tertiary, Nondegree (ISCED 5B) Students Enrolled in Technical and Vocational Education and Training Programs by GDP per Capita, 2002



PRC = People's Republic of China, GDP = gross domestic product, ISCED = International Standard Classification of Education, TVET = technical and vocational education and training, UK = United Kingdom, US = United States.
 Source: International Centre for Technical and Vocational Education and Training 2006 data in ADB. 2008a. *Education and Skills: Strategies for Accelerated Development for Asia and the Pacific*. Manila. p. 85.

the total number of registered TVET providers was 2,077, including 291 government institutions, 648 statutory institutions, and 1,138 nongovernment providers. Thus, nongovernment providers accounted for about 55% of institutions. In student enrollment, however, the public sector share was more than 70% and the private sector share more than 19%. Unofficial estimates, however, indicate the number of nonpublic providers to be in the region of 2,000 or more institutes. This implies that an additional 80,000 individuals could be enrolled in TVET training per year. Hence, one should be cautious in interpreting the total student enrollment. The total number of course programs accredited by the Tertiary and Vocational Education Commission (TVEC) in 2009 was 555, and 64% were offered by public TVET providers.

Female enrollment tends to be limited, except at the postsecondary level. Relatively little information is provided in the country reports about enrollment by gender at various levels and by program.

Organization and Management

All the five countries—Bangladesh, Bhutan, the Maldives, Nepal, and Sri Lanka—have apex organizations for the governance and management of TVET, but they are at different stages.

In Sri Lanka, a separate ministry was created for TVET in 1994 with a view to coordinating and rationalizing the main public TVET agencies. The ministry has had different names and is now called the Ministry of Youth Affairs and Skills Development (MYASD). It includes an apex body—TVEC—which carries out policy development, planning, quality assurance, coordination, and some funding and research. Ten of its 17 members, including its chair, represent employers and the private sector. The administrations of all four major public training organizations are placed under TVEC, including DTET, NAITA, the Vocational Training Authority (VTA), and the National Youth Services Council. Besides these four institutions, several other public TVET providers function under MYASD as well as under 13 other ministries.

In Bhutan, the National Technical Training Authority was integrated into the Ministry of Labour and Human Resources in 2003. It has three pertinent departments: Human Resources, dealing with vocational training delivery; Occupations Standards, dealing with standards, qualifications, assessment, and certification as well as quality assurance; and Employment, dealing with labor market information, entrepreneurship, and promotion of self-employment.

In the Maldives, the TVET Division under the Ministry of Human Resources, Youth and Sports (MHRYS) has recently been transferred to the Ministry of Education (MOE) and has been reconstituted as the TVET Authority. This move is part of a wider plan to strengthen skills training at the school level. As it did under MHRYS, the TVET Authority serves as the apex institution for TVET, with the primary functions of coordinating with employment sector councils, overseeing public and private training institutions, managing the Training Management Information System, and supporting the Maldives Qualifications Authority in quality assurance.

In Nepal, the central organization is the semi-independent CTEVT, established in 1989. CTEVT is an apex body for formulating policy, coordinating programs, developing and expanding TVET, and ensuring the quality of TVET in the country. It regulates standards; coordinates among different agencies imparting training; and assures quality by producing qualified instructors and curricula and by examining and certifying the standard of skills. It directly manages public training institutions. The highest body in CTEVT is the Assembly, composed of 24 members, including 4 designated from the private sector, 9 from government, and 6 from education/training institutions. Below the Assembly, a nine-member council serves as an executive committee. It has no persons specifically designated from the private sector. CTEVT reports to the minister of education and has about 940 staff members—60% professional and managerial, and 40% support staff.

In Bangladesh, formal TVET is the responsibility of MOE, which has two key bodies within the ministry: One is the Bangladesh Technical Education Board (BTEB), responsible for quality control through examinations, certification, and approval of private training providers. BTEB has its own governing structure and reports to the permanent secretary. The other is the Directorate of Technical Education (DTE), responsible for administration of public technical–vocational institutions and development of programs. It manages public provision of TVET, including polytechnics, monotronics, and technical schools and colleges. Outside MOE, the Bureau of Manpower, Employment and Training (BMET) in the Ministry of Expatriate Welfare and Overseas Employment oversees labor market information and provision of nonformal TVET through its technical training centers. TVET is coordinated at the national level by an apex body, the National Skills Development Council (NSDC), chaired by the Prime Minister.³ It first met in September 2011. NSDC is responsible for policy development,

³ Bangladesh has organized high-level coordination of skills development, apparently with little enterprise representation. It has established the National Council on Skills Development under the Prime Minister as an apex institution for policy direction and review. Its membership besides the Prime Minister includes eight ministers of government, four other government officials, and six experts in skills development. In India, the National Skills Development Coordination Board has also been established under the deputy chair, Planning Commission. Its 14 members include 11 government officials and three academic/subject matter specialists. The National Skill Development Corporation has also been established as a nonprofit company. The corporation is expected to establish sector skills councils. In addition, the existing National Council for Vocational Training will be reengineered and strengthened, and its mandate broadened (Government of India 2009, 10–11).

action plans, coordination, and follow-up. It comprises 36 members: 64% from government, 30% from private industry and associations, and 6% from civil society. The NSDC secretariat is now coordinating and facilitating the development of the action plans to implement the approved national skills policy.

Teacher/Instructor Training

Technical teachers and vocational instructors are trained in a variety of institutions. Bangladesh has the Technical Teacher Training College (TTTC) and the Vocational Teacher Training Institute (VTTI). Neither is presently doing much training. The TTTC has the capacity to train about 80 teachers yearly, but has been producing far fewer graduates; the VTTI has the capacity for training 240 teachers, but its enrollment is well below capacity (ADB 2008c, 2, 27). Instructor vacancies account for the low enrollments. The TTTC Dhaka has only 13 of 33 sanctioned positions filled. The VTTI has only 3 instructors against 33 sanctioned positions. The TTTC has given no short-term courses in the last 4–5 years. The VTTI has not conducted a single short course in the last 5 years and currently offers no long-term programs (World Bank 2010, 102). Only 50% of teachers in polytechnics have been trained, but they cannot come to the TTTC because of the high incidence of vacancies in their own institutions. As a result, the TTTC is underused, and it cannot spend its budget; about 40% of the budget was left unspent over the past 3 years.

Teacher/instructor training in Nepal is the responsibility of the Training Institute for Technical Instruction (TITI). The TITI operates under CTEVT and is a unique structure with an international reputation, providing modular courses in management, with special courses for private training providers, curriculum development, and instructor training. It also provides long-term qualifications at the diploma level in technical instruction, and a bachelor of technical education together with Kathmandu University. The TITI received long-term support from the Government of Switzerland that ended in 2007. It is a vital resource for capacity development in the country. Up to 2009, the TITI had provided in-service training to 8,600 Nepalese TVET professionals, including 1,900 females, in curriculum development (1,300), instruction (5,600), and management (1,700).

Sri Lanka created the University of Vocational Technology (UNIVOTEC) in 2008, the main purposes of which are (i) to give those with TVET qualifications the opportunity to acquire a university-level degree in a technical field, and (ii) to prepare technical teachers through its Faculty of Training Technology and its bachelor of education (technology) degree. UNIVOTEC has a governing board of 22 members, including 6 from industry. All degree programs are 5 years in duration. UNIVOTEC also provides diploma programs, certificates, and short professional development programs. Only 30 students were enrolled for degrees in pedagogy in 2010 and 175 for certificates in pedagogy. The comparative advantage of UNIVOTEC is that it is the only institution that provides pedagogical training for TVET teachers. However, it faces a serious issue in the lack of sufficiently qualified academic staff.⁴

Curriculum Development and Examinations

In Bangladesh, BTEB in MOE is the body responsible for quality assurance through accreditation of training providers, curriculum development, examinations, and certification. BTEB has its own board of governors, none of whom represent enterprises or employers. It examines and certifies about 230,000 students annually in TVET programs. The examinations focus mostly on theory.

In Bhutan, the Department of Occupational Standards has developed skills standards in four priority occupations (plumbing, masonry, auto mechanics, and construction carpentry). Competency-based curricula are being developed for the four trades.

⁴ Staff were transferred from the lower-level National Institute of Technical Education Sri Lanka.

In Nepal, the National Skills Testing Board (NSTB) within CTEVT has grown in its capacity to provide skills testing for short-term vocational skills. From fewer than 100 examination-based certificates issued in 2000, the board tested and certified 25,000 people in 2010. As of July 2010, a total of 36,600 persons had been tested and certified by NSTB at different skill levels. The curriculum development department of CTEVT has developed occupational skills standards in 206 occupations, and uses the DACUM⁵ method to develop content programs with industry participation. The present skill testing system comprises four testing/qualification levels: The elementary level is the basic skill test for anyone willing to get his or her skill competence certified by a national system. This does not demand any entry qualification. The recognition of the test completers at this level is as skilled labor. Level 1 is not specific and is open to all candidates with any entrance qualification below secondary education. The recognition of this level is equivalent to grade 8 of general education for employment. Levels 2 and 3 are equal to formal technical education at the secondary and higher secondary levels, respectively.

Sri Lanka has adopted a national vocational qualifications framework founded on competency-based training. Trainee assessment, except at diploma levels 5 and 6, has shifted from terminal examinations to continuous assessment of competencies (Appendix 5, Box A5.8).

Regulation of Private Providers⁶

The regulatory frameworks in general do not impose undue burdens on private training providers. Rather, each country struggles to enforce existing regulations. Each country has procedures and criteria in place for regulation of private providers.

In Bangladesh, the Technical Education Act of 1967 requires “affiliation” by private providers, but in practice nongovernment institutions may operate on their own without registering with MOE or seeking affiliation. BTEB reviews and approves applications. Generally, institutions must comply with minimum health and educational standards. Affiliated institutions must also deliver BTEB curricula. The government sets teacher wages, but profit-seeking institutions are allowed to set their own salary scales, and no control is exercised over tuition charges. BTEB teams inspect institutions before they are approved, and in theory inspectors are supposed to make regular visits to ensure that standards are maintained. In practice, this rarely happens because of lack of staff. Though an inspection and monitoring cell has been created in BTEB, the necessary posts have not yet been filled.

Bhutan has designed a complete system for regulating private providers through registration and accreditation. All private institutions must register 1 year before planned operations. The criterion-based evaluation, including site visits, allows for different lengths of certification based on the strength of the applicant. Regular monthly monitoring is provided during follow-up. Accreditation of specific courses is voluntary and confers on the recipient official recognition (BDR).

Nepal regulates both private institutions and their programs. That is, approved institutions must obtain approval to open new training programs. CTEVT provides accreditation and approval to the affiliated institutions through seven key steps: preparation of standards (documents, papers), advertisement and call for applications, self-assessment, on-site visit, reporting, infrastructure preparation/observation, and affiliation/approval. Affiliation is essential for private training institutions at the technical school leaving certificate (TSLC), certificate, and diploma levels. Without CTEVT affiliation, the institutions would not be able to attract trainees. However, for short-term vocational training reportedly thousands of institutions operate without affiliation. The regulatory framework attempts to control teacher qualifications, salaries, and fees. In theory, institutions are supposed to

⁵ “Development of a Curriculum,” a widely adopted method for training program development pioneered by Ohio State University.

⁶ Private training providers include nongovernment organizations, community-based organizations, and for-profit training institutions.

be not-for-profit, and CTEVT gives priority to approval of nongovernment organizations (NGOs). In practice, CTEVT finds it impossible to control fees and minimum teacher salaries. About 450 nongovernment training providers have been accredited by CTEVT thus far.

Sri Lanka requires that private training institutions be accredited by the government based on minimum health and educational/training standards. It is the responsibility of TVEC to ensure that standards are met. Institutions need not be not-for-profit. They must submit balance sheets, but levels of tuition, teacher salaries, and even teacher qualifications are left to each institution.

By the end of 2010, about 2,100 institutions had been registered by TVEC. This simply means that they are generally suitable to conduct training. Registration does not mean that an institution has been approved to conduct specific courses. This occurs in the process of accrediting courses, whereby a provider submits courses for approval. A course accredited in one center can also be accredited in a number of other centers and hence receive multiple accreditations. However, at the end of 2011, only 901 courses across many training centers had been accredited. The small number of accredited courses compared with institution registrations means that the task of the accreditors has barely started. Virtually all government providers have registered. Some private providers are reluctant to register, but their advertisements are monitored, and if they offer programs without accreditation, they are informed of their obligations. The extent of registration and accreditation is limited, largely due to the lack of staff. The Standards and Accreditation Directorate has only six staff members involved in judgments about registration and accreditation. They have to rely on contractors, usually from a different organization, for making appraisals in many areas (Brady and Perera 2012).

One interesting innovation was the recent creation of the Accredited Training Providers' Association for the private sector (Appendix 5, Box A5.10).

Enterprise-Based Training

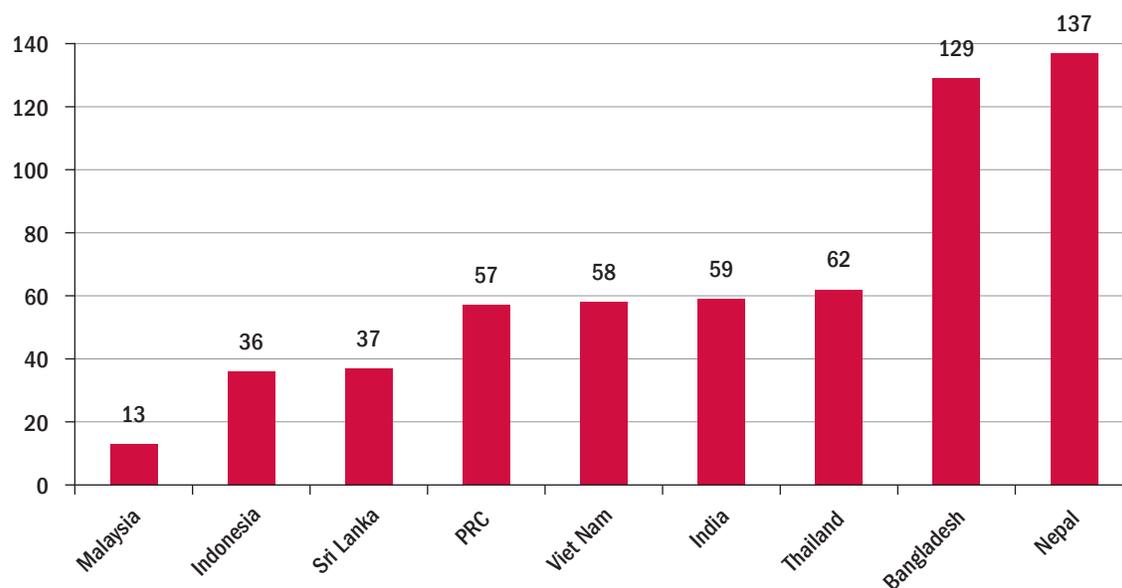
Sri Lanka ranked relatively high in the extent of enterprise staff training in the Global Competitiveness Review (Figure A3.4). In contrast, Bangladesh and Nepal were near the lowest in the rankings.

Sri Lanka boosted the incentives for enterprise-based training in 2011. For the first time, the 2011 state budget allowed enterprises to deduct the costs of staff training up to 2% of net income before taxes (i.e., adjusted gross income after all business deductions). This provision should stimulate greater incidence and volume of enterprise-based training. In Bangladesh, employers have compensated for lack of public training programs that suit their purposes by establishing and operating their own training. These include several training institutions in garments and textiles (Appendix 5, Box A5.1) and telecommunications (Appendix 5, Box A5.2).

Training for the Informal Sector

None of the country reports was able to identify the type or scope of skills provision for those working in the informal sector. In Bhutan, the ADB-supported Basic Skills Development Project from 2001 to 2008 aimed to provide basic skills training to school leavers and rural villages to provide income-earning opportunities in idle farm seasons. Targeting rural areas as well as women, the project trained 1,240 villagers in 19 of Bhutan's 20 districts. In Sri Lanka, it can be assumed that much of the training provided by the VTA at more than 200 rural training centers is for those who will eventually work in the informal sector. Similarly, NGO TVET providers also cater to the training needs of the informal sector.

The International Labour Organization (ILO) refers to the practice of traditional apprenticeship in another South Asian country, Pakistan: "Traditional apprenticeship training is often the most important means of

Figure A3.4 Extent of Enterprise Staff Training, Selected Asian Countries (rank among 139 countries)

PRC = People's Republic of China.

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

training in the informal sector, including in South Asia. Pakistan is the world's largest exporter of surgical instruments. The success of this sector is explained by simple technology and skills, an elaborate system of subcontracting among the large and small units, and a thriving market for their products. The small enterprises possess a pool of skills and metalworking knowledge which, though limited, allows them to shift from one product to another... The main system of skill diffusion is through informal apprenticeship with the 'ustaad'—or master craftsman transferring skills to young apprentices...." complemented by interaction with the large firms (ILO 1998, 167–168 in ADB 2004a, 71).

Costs and Financing

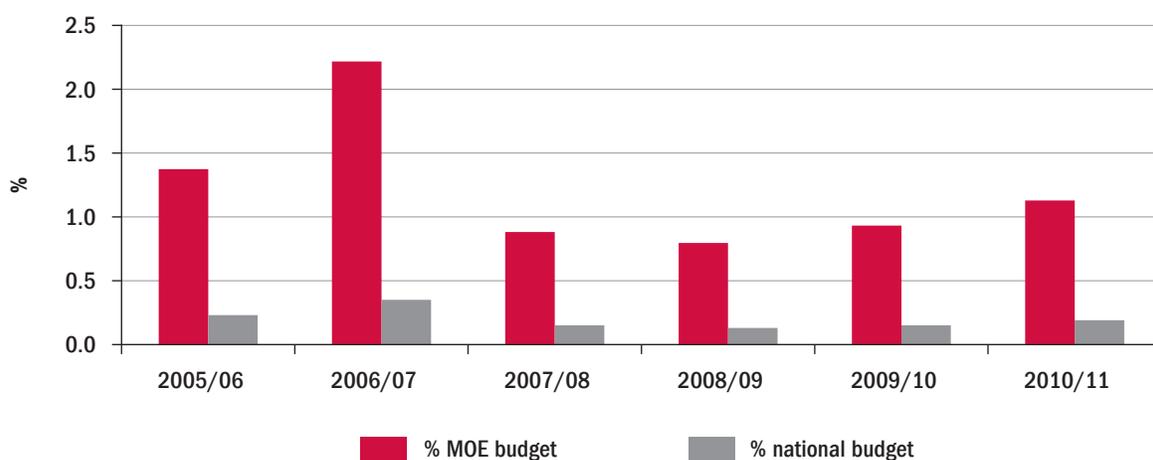
Estimates vary about the proportion of government or MOE spending on TVET, but have one thing in common: they are all low.

Levels of Financing

In Bangladesh, the main public spending on TVET comes through MOE (DTE and BTEB) and BMET. About one-third of the more than 3,000 affiliated private training institutions receive "monthly payment orders" that cover 100% of basic teacher salaries. TVET absorbs about 1.7% of the MOE budget. Adding BMET and subsidies to private providers, the best estimate is that TVET accounts for a total of about 2.6% of the education budget (Dohmen 2009, 7). It appears that Bangladesh spends 2.4 times as much of the MOE budget on skills development as does Nepal.

Nepal's education budget takes up about 16%–17% of total government spending, but public expenditures on TVET are minuscule in relation to the education budget (Figure A3.5).

Figure A3.5 Nepal: Technical and Vocational Education and Training Budget as a Share of Education and National Budgets (% of totals)



MOE = Ministry of Education.

Source: ADB. 2010. Innovative Strategies in TVET for Accelerated Human Resource Development in South Asia. Country Paper: Nepal. Draft. December. Consultant's report. Manila (TA 6337-REG). (Also referred to as "Nepal Country Report" or "NCR")

Except for 2006–2007, the TVET budget represented just 0.8%–1.4% of the MOE budget, and less than 0.2% of the national budget.

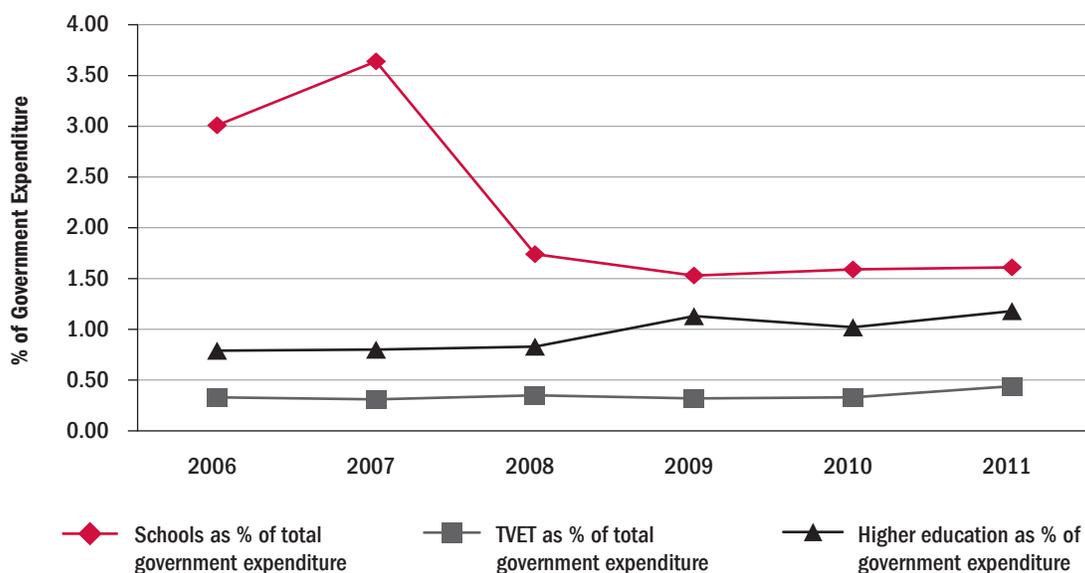
Sri Lanka spends proportionately more on TVET than the other two focus countries. Public expenditure on TVET by the supervising ministry has been around 2,204 million Sri Lanka rupees or \$53 million per year. Still, TVET expenditures amounted to 0.44% of total government spending in 2011 (Figure A3.6), and about 14% of total spending on education and training, up from 11% in 2009. Sri Lanka appears to spend 2.3 times the percentage of total government spending on skills development as does Nepal.

Sources of Financing

Given limited public spending on TVET, Nepal turned to increased private funding of public TVET. To cope with budgetary constraints, public technical schools were encouraged to generate funds, tuition-free places were reduced by half or more in some schools, and others introduced fees in public institutions. CTEVT is relying increasingly on resources generated within the TVET system. Own-generated income—from program affiliation fees, testing and examination fees, fees from sponsored candidates, and fees from customized training—increased from 24% to 31% of the CTEVT budget between 2006/2007 and 2008/2009.

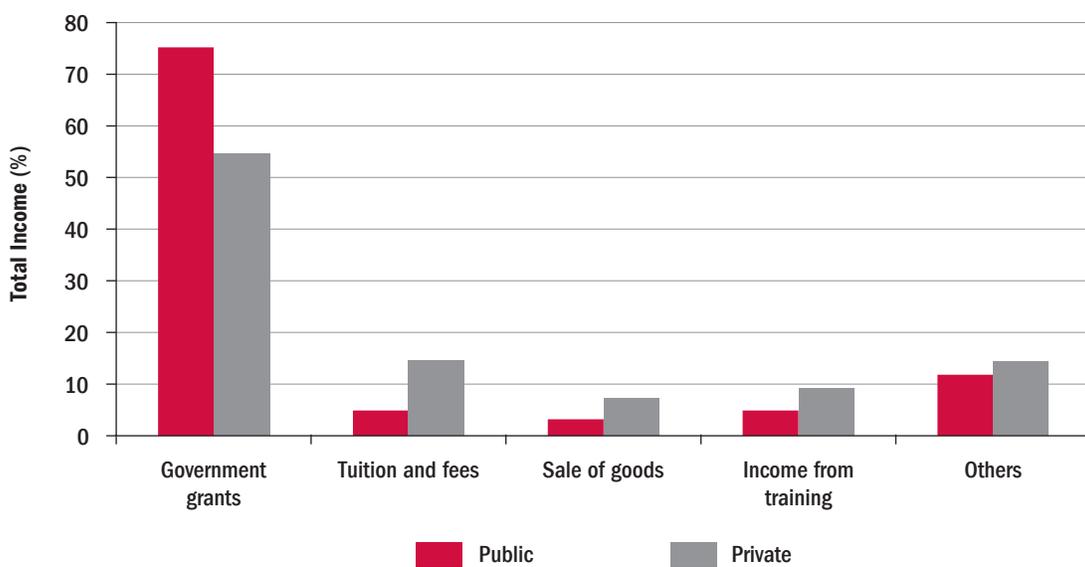
Students in Bangladesh also contribute through tuition and examination fees. However, these fees are minor (only 20 taka per semester for public institutions) and do not constitute substantial sources of funding in public institutions. Any cost recovery from students is largely offset by students receiving stipends and scholarships; about two-thirds of students in public institutions receive such. No income or means tests are applied. Rather than making a financial contribution to the cost of their own training, students receive additional and possibly unnecessary incentives to participate (World Bank 2007, 20, 22, 40; Dohmen 2009, 20).

Figures A3.7 and A3.8 show the composition of funding received by source for public and private institutions in Bangladesh (based on a limited institutional survey).

Figure A3.6 Sri Lanka: Public Expenditure on Education and Training

TVET = technical and vocational education and training.

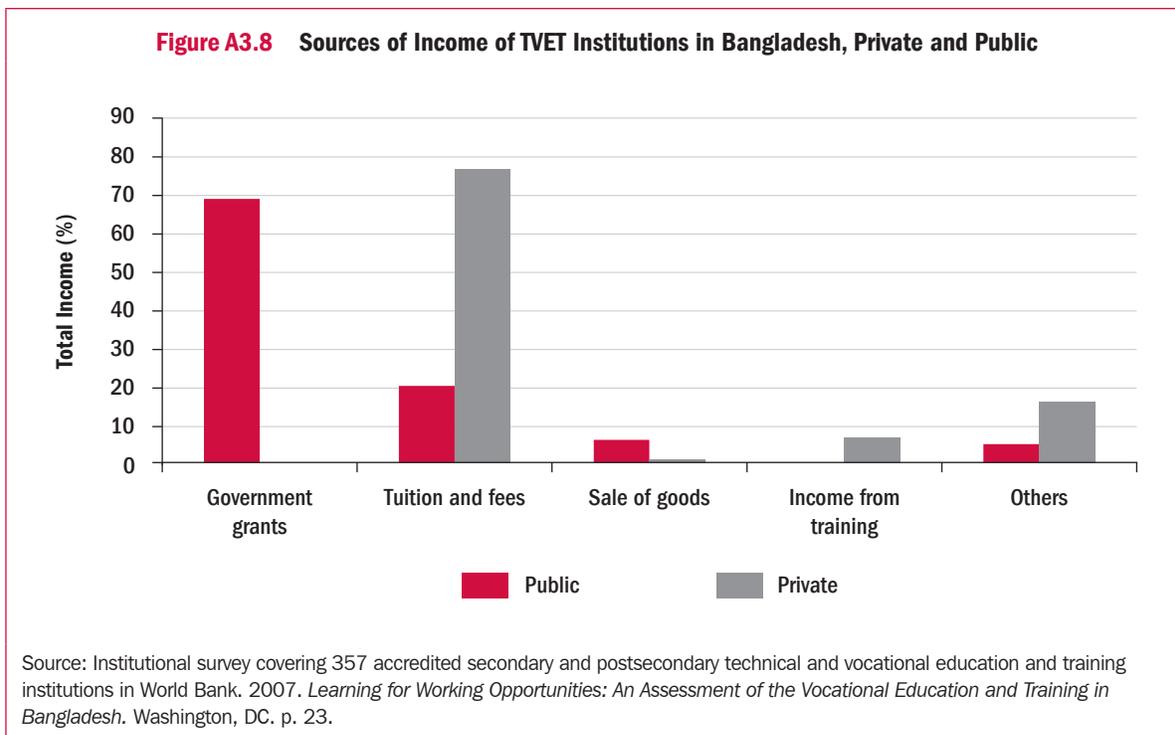
Source: ADB. 2011b. Innovative Strategies in Technical and Vocational Education and Training (TVET) for Accelerated Human Resource Development in South Asia: Sri Lanka Country Report. Draft. May. Consultant's report. Manila (TA 6337-REG). (Also referred to as "Sri Lanka Country Report" or "SLCR")

Figure A3.7 Sources of Income: Secondary Vocational by Ownership in Bangladesh

Note: Secondary Vocational here consists of Secondary School Certificate – Vocational (SSC [voc]) and Higher Secondary Certificate – Vocational (HSC [voc]).

Source: Institutional survey covering 357 accredited secondary and postsecondary technical and vocational education and training institutions in World Bank. 2007. *Learning for Working Opportunities: An Assessment of the Vocational Education and Training in Bangladesh*. Washington, DC. p. 23.

Figure A3.8 Sources of Income of TVET Institutions in Bangladesh, Private and Public



In Bangladesh, about 70% of revenues from public institutions come from government grants. In addition, public diploma institutions raise about 20% of their revenues from fees. Private institutions at the secondary level on average received just over half their revenue from government monthly payment order grants. Diploma-level private institutions are entirely self-financing. Public institutions are allowed to offer self-supporting short courses that are financed solely through tuition fees. These fees remain at the institution and increase their revenues. However, this does not appear to be a significant source of income. No type of institution raised a significant share of its revenues from either sale of products or provision of training services outside its regular programs.

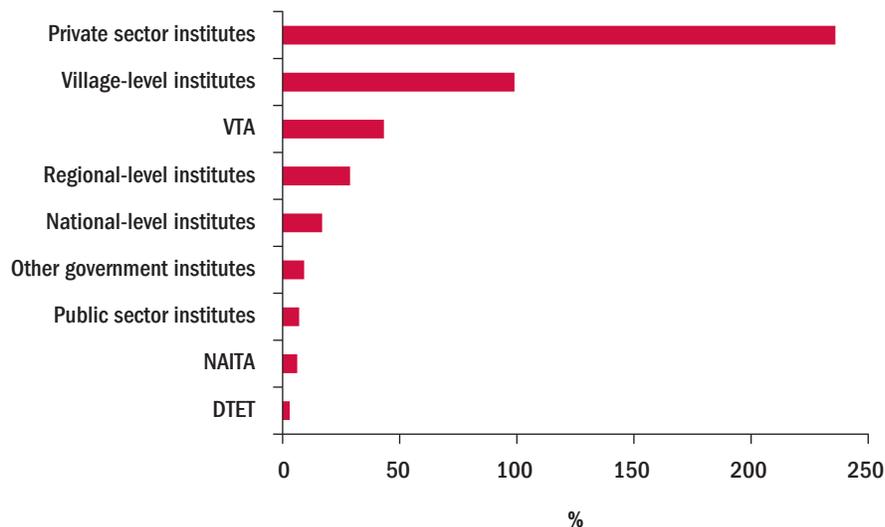
Figure A3.9 reveals that private sector institutions operate at a profit, with income nearly 2.5 times costs, and that public institutions require heavy government subsidies. On average, public institutions garner about 7% of their costs from nongovernment revenue. This ranges from 100% in village-level institutions and more than 40% in VTA institutions to just 3% in institutions belonging to DTET.

Uses of Resources

In spending, personal emoluments absorb most of the costs, and only 2% is spent on supplies (Figure A3.10).

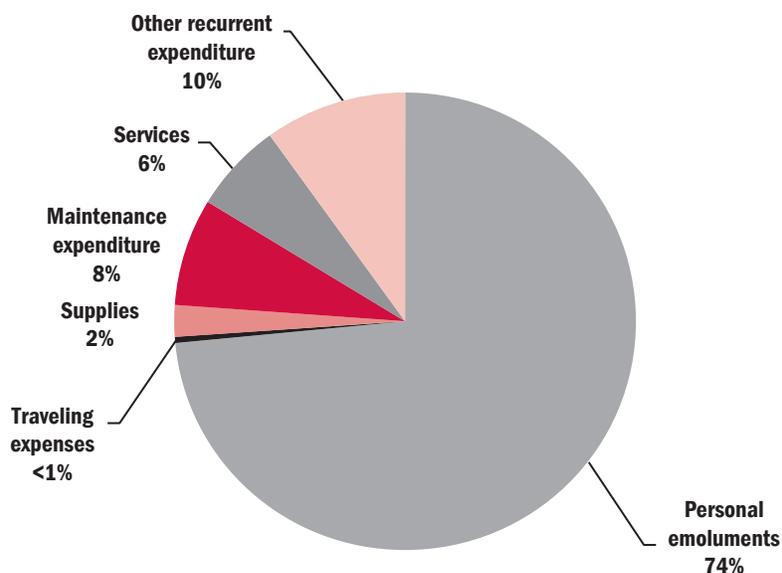
External Assistance

External assistance has helped formulate and implement TVET reforms in the three main countries. Bangladesh is the beneficiary of three current major externally assisted projects in TVET, including the European Union/ILO TVET Reform Project (2008–2012, €16 million), the ADB Skills Development Project (2008–2013, \$67 million), and the World Bank-assisted Skills and Training Enhancement Project (2010, \$88 million). These projects are in the process of addressing many of the chronic issues discussed in this publication. Several successes can be noted: The National Skills Development Policy has been formulated and approved by NSDC, including a proposed national technical and vocational qualifications framework. Eight industry sector councils or sector working committees have been established. Competency-based curricula are being developed, and instructors are being trained.

Figure A3.9 Sri Lanka: Revenue from Training Institutions as Percentage of Total Costs, 2007

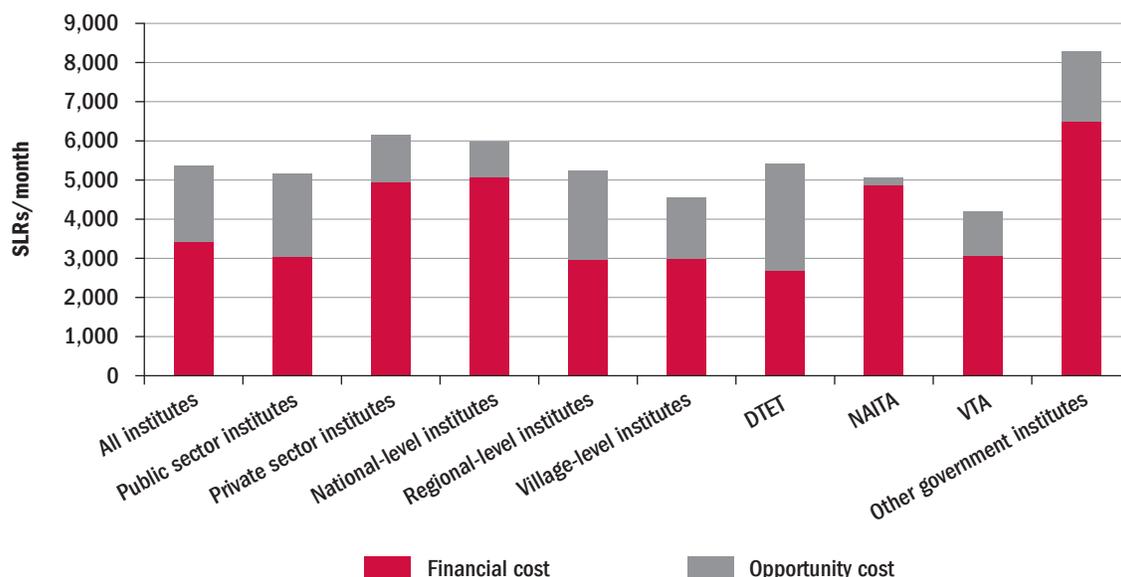
DTET = Department of Technical Education and Training, NAITA = National Apprenticeship and Industrial Training Authority, VTA = Vocational Training Authority.

Source: ADB. 2011b. Innovative Strategies in Technical and Vocational Education and Training (TVET) for Accelerated Human Resource Development in South Asia: Sri Lanka Country Report. Draft. May. Consultant's report. Manila (TA 6337-REG). (Also referred to as "Sri Lanka Country Report" or "SLCR")

Figure A3.10 Sri Lanka: Public Recurrent Expenditures on Technical and Vocational Education and Training by Type, 2009

Source: ADB. 2011b. Innovative Strategies in Technical and Vocational Education and Training (TVET) for Accelerated Human Resource Development in South Asia: Sri Lanka Country Report. Draft. May. Consultant's report. Manila (TA 6337-REG). (Also referred to as "Sri Lanka Country Report" or "SLCR")

Figure A3.11 Sri Lanka: Financial and Opportunity Costs per Trainee by Institution, 2007



DTET = Department of Technical Education and Training, NAITA = National Apprenticeship and Industrial Training Authority, SLRs = Sri Lanka rupees, VTA = Vocational Training Authority.

Note: Financial costs take into account actual money spent in obtaining training (cost of fees; books; materials; equipment; and expenditures on food, rent, and other expenses during the training period). Opportunity costs refer to income forgone by those who were employed before training.

Source: EML Consultants. 2009. *Quantification of Economic and Social Benefits Contributed by the TVET Sector*. Presented in ADB. 2011b. *Innovative Strategies in Technical and Vocational Education and Training (TVET) for Accelerated Human Resource Development in South Asia: Sri Lanka Country Report*. Draft. May. Consultant's report. Manila (TA 6337-REG). (Also referred to as "Sri Lanka Country Report" or "SLCR")

Currently, three main agencies are active in TVET in Nepal—ADB, the Swiss Agency for Development and Cooperation, and the World Bank. ADB is currently providing assistance through the Skills for Employment Project for \$25 million (2005–2011). The project features support for short-term market-oriented skills training for disadvantaged youths. The training is provided through private providers selected on a competitive basis. The Swiss Agency for Development and Cooperation has provided assistance in a series of projects over several decades, including long-term assistance for the TITI, Skills for Employment, and the Employment Fund, and current assistance for NSTB. The World Bank's Enhanced Vocational Education and Training Project (grant of \$20 million and credit of \$30 million) provides assistance for TVET regulatory activities and capacity development, strengthening diploma-level technical education, and short-term training and recognition of prior learning. It is being implemented through a project implementation unit in MOE.

ADB has financed four TVET projects in Sri Lanka; two supported a national teacher training college and technical colleges in the 1980s. The Skills Development Project from 1999 to 2007 financed the introduction of competency-based training at the certificate level, the national vocational qualifications system, career guidance and counseling centers, management information systems, and district resource rationalization plans. The Technical Education Development Project, which closed in August 2011, concentrated on the national vocational qualifications levels 5–7; established six colleges of technology; established UNIVOTEC to offer bachelor of technology degrees; and strengthened the MOE functions in national vocational qualifications, management information systems, output-based budgeting, and registration and accreditation of training providers.

APPENDIX 4

Policies and Plans for Technical and Vocational Education and Training

No shortage exists of policies and plans for technical and vocational education and training (TVET) in the region. The challenge is to translate them into action.

Bangladesh

Bangladesh has at least five plans and policies with prescriptions and implications for TVET, including Vision 2021, Poverty Reduction Policy Paper II, Education Policy 2010, National Skills Development Policy 2011, and the Sixth Five-Year Plan. The two most important are the TVET strategies in the Education Policy 2010 and the National Skills Development Policy 2011.

Education Policy 2010. The TVET section of the Education Policy 2010 makes 23 proposals for TVET, which tend to concentrate on expansion, access, and vertical mobility.

- The recommendations call for a massive expansion of TVET by adding prevocational and vocational education in both general and secondary education, new institutions in each subdistrict, expansion of technical–vocational teacher capacity, creation of a technical university, and extensive introduction of apprenticeship programs.
- Several recommendations focus on ensuring vertical mobility from one level of TVET to another.
- A strong concern for equity is demonstrated in the recommendations to ensure access for students with disabilities, ensure that TVET students get proportional allocations, provide opportunities for the unprivileged in privately-owned or run institutions, provide access for adults and dropouts to evening and part-time courses, and provide financial assistance to enable those who cannot continue studies after grade 8 to pursue TVET.

Two recommendations seek the encouragement of private providers for delivery or management of training institutions, including public financial support. One recommendation aims at more efficient use of resources through double shifts. These are positive elements.

However, for all the positive elements, the TVET strategies seem to be lacking in other respects. First, there appears to be little concern for instilling a demand orientation into the TVET system, i.e., ensuring that it responds to employer and labor market requirements. Instead, the weight of recommendations is supply sided—it stresses expansion of TVET enrollments. Second, recommendations are made without the discipline imposed by financial limits. It is not clear what the various elements would cost and whether the total would be financially feasible. Third, some of the recommendations seem to contradict those recently adopted in the National Skills Development Policy (see next paragraph). In particular, specification of levels and standards based on time spent in training is inconsistent with the aim of implementing competency-based training. The shift of all TVET providers under the purview of the Directorate of Technical Education (DTE) does not appear in the Skills Policy; in fact, DTE is not even mentioned in the Education Policy.

National Skills Development Policy 2011. The National Skills Development Policy (NSDP) was drafted in 2008, underwent stakeholder consultations, and was submitted to the Ministry of Education in 2009. It was approved in September 2011 by the National Skills Development Council chaired by the Prime Minister. The NSDP is the most extensive of the documents, covering 22 sections in 59 pages. It advocates a flexible demand orientation for skills development and spells out the role of industries as well as training in the workplace. It calls for the imposition of standards and structure for skills development through a qualifications framework and competency-based training rooted in workplace skills requirements. It calls for better use of data in sectoral planning and better institutional management. It makes several key prescriptions to mobilize more resources for skills development and to use resources more effectively.

The NSDP is extensive and comprehensive. It has many points to recommend it. These include (i) the move to standardize national qualifications and introduce competency-based training; (ii) decentralization of institutional administration (the move toward devolution of teacher recruitment and increased financial, administrative, and academic autonomy), accountability measures and performance monitoring, and boards of management with employer representatives; (iii) measures to raise quality and relevance (incentives to respond to industry demands, requirement for instructor training and licensing); and (iv) financing, including performance- or output-based financing.

Still, the NSDP presents myriad prescriptions without indicating priorities. Everything cannot be done at once, so it will be necessary to become more selective in identifying priorities in elaboration of the action plan. Second, the policy was developed without the discipline imposed by financial limits. It is not clear what the various measures would cost and whether they are financially feasible. Third, some of the proposed measures contradict prescriptions in the Education Policy 2010 and the Sixth Five-Year Plan. This includes time-based rather than competency-based qualifications, and consolidation of all TVET under DTE. Fourth, many prescriptions are vague and left to be worked out later.

Bhutan

Bhutan adopted the extensive National Human Resource Development Policy in 2010. The Royal Government has set professional, technical, and vocational education as the highest priority within the education sector. The policy points in the right direction, even though some of its statements seem unattainable (e.g., the vision to develop a knowledge-based society.) The main focus of the policy is the private and corporate sector, which accounts for about three-fourths of formal sector jobs. Priorities, among others, include public-private partnerships and industry collaboration, on-the-job training, flexible career pathways, introduction of short-term courses in vocational institutes, promotion of entrepreneurship by training institutions, targeting the needs of women students, further development of the Bhutan Vocational Qualifications Framework, and recognition of prior learning. Vocational education will be introduced in schools from grade 6 to promote both attitudes toward and skills in vocational education. The main strategy for implementation is to strengthen coordination between and among stakeholders in human resource development.

Maldives

The Maldives has a strategic action plan on employment and human resource development as part of the Maldives National Framework for Development 2009–2013. It specifies six key sector policies: (i) promote the right to work, (ii) increase labor force participation of locals by creating a cohort able to fill the skill gaps, (iii) minimize disparities in employment between regions, (iv) facilitate increased employment of women and youth, (v) establish benchmarks based on International Labour Organization (ILO) standards in managing the employment sector, and (vi) identify and address problems pertaining to migrant workers. Some TVET-specific policies include the following: (i) collect, compile, and analyze labor market data; (ii) develop a sector-wide

national human resource development (HRD) plan; (iii) strengthen skills training programs; (iv) further develop the TVET system to address labor market needs through the establishment of a TVET authority; (v) establish a monitoring mechanism to ensure adherence to the national HRD plan; (vi) formulate guidelines to recognize and support large corporations and enterprises that invest substantially in HRD; (vii) establish a mechanism for trade testing; (viii) establish a framework to implement training for retrenched civil servants to join the private sector; and (ix) encourage development of an HRD plan for the public and private sector, linked to the national HRD plan.

Nepal

Nepal has had two major policy documents concerning TVET. The main objectives of the National TVET Sectoral Policy 1999 were to (i) expand TVET services, (ii) ensure sound returns by training for the domestic and international labor markets, (iii) reduce government involvement and increase private sector involvement in the operation of training institutions, and (iv) ensure services to the poor and disadvantaged. Twenty-four means were included to achieve the main objectives.

The TVET Policy Framework (March 2007) states: “The policy framework addresses the needs and demands of a rising Nepal of the people who wish to unfold their productive talents, training providers who seek to engage in the development of human resources and employers who are keen to engage their productivity and provide work and income for their fellow citizens.”

The five key elements of the TVET Policy Framework are as follows:

- Expansion of services and opportunities will be achieved by deregulation, autonomy, decentralization, free start-up support to emerging providers, outcome quality assurance (in line with national vocational qualifications), performance comparison, transparency, and quality marks as elements of customer protection.
- Inclusion and access for all citizens who need training will be sought through stipends (for tuition fees and subsistence allowance), especially for disadvantaged groups of people; recognition of prior learning and open assessment; entry-level occupational standards; and preparatory and support courses to promote mainstreaming.
- Integration of various training modes and pathways will be done through the Vocational Qualifications Framework as a bracket for formal, nonformal, and informal training and learning; bridging courses into general education; promotion of typical occupational career ladders; and career guidance for the workforce as elements of lifelong learning.
- Enhanced relevance of courses and competencies requires the following steps: licensed trainers with industrial exposure, needs-identified curricula based upon occupational standards, hands-on training (on-the-job and projects), and independent assessment and certification.
- Sustained funding sources and mechanisms include massive increase in public funds, fees for all training measures beyond 3 months, concerted external assistance, TVET development funds at the district level, and contributions from former stipend recipients (NCR).

A key target is to provide 3 months of skills training to all youths.

The Skill Development Policy was approved by the cabinet in 2007, but the detailed action plan to achieve its objectives was never finalized. Reasons include frequent changes of the government and the minister, and low priority given to the policy by the political mechanism.

Sri Lanka

Rather than a national plan dedicated to TVET, the Tertiary and Vocational Education Commission has been concentrating on plans for industry sectors and disadvantaged provinces. So far, TVET plans have been developed for 17 industry sectors, and about 100 million Sri Lanka rupees have been disbursed among the training providers over the last 10 years as grants to implement activities. Additional sectoral plans are being developed for the information and communication technology sector and the leather and footwear sectors, in association with the relevant trade promotion organizations. A TVET plan has been developed for Sabaragamuwa Province in association with the ILO and the Provincial Council. The plan is being implemented in the province jointly by the Provincial Council, two district secretariats, public sector institutions, and public–private training providers. A TVET plan is also being developed for the Eastern Province, which has recently been liberated from conflict.

Policy directions for TVET are spelled out in four main documents.¹ The plans envisage that education and training will be transformed to provide the technological skills required for rapid economic growth and development. It is explicit that the government is keen to promote the TVET sector as a major stream for skills development for youths entering the job market. It also recognizes foreign employment as a potential target market for TVET graduates. More specifically, the National Planning Department 2010 Policy Framework calls for updating technical content in view of labor market changes; assuring training competencies against standards; reducing gender imbalances; diversifying providers and creating an enabling environment for investment by private providers; better coordination among stakeholders; financial sustainability through cost recovery; and greater vertical mobility for TVET graduates. The activity and outcome matrix developed by the National Planning Department for the next 10 years deals with the following major strategies: (i) improving quality, (ii) introducing demand-driven course programs, (iii) introducing new programs for emerging new economic sectors, (iv) developing national competency standards and national quality standards, (v) establishing links with industry, (vi) establishing centers for assessing prior learning, and (vii) strengthening an online management information system for the TVET sector.

India

Although not part of this review, it is instructive to summarize similar efforts at policy development in India. India has set a target of training 500 million citizens by 2022 (Government of India 2008, Eleventh Five Year Plan, p. 3). It launched the National Skills Development Policy in 2009 as a means to achieve this objective. The policy notes that the target group for skills development includes those entering the labor market annually (about 13 million), those working in the formal economy (26 million), and those in the unorganized economy (433 million) (data from 2004–2005).

The objectives of the National Skills Development Policy are to

- create opportunities for all to acquire skills throughout life, and especially for youth, women, and disadvantaged groups;
- promote commitment by all stakeholders to their own skills development initiatives;
- develop high-quality skilled workers and entrepreneurs relevant to current and emerging employment market needs;

¹ (i) Mahinda Chinthana. 2006. *Vision for a New Sri Lanka—A Ten Year Horizon Development Framework 2006–2016*. Ministry of Finance and Planning; (ii) Mahinda Chinthana. 2010. *Vision for the Future*; (iii) National Education Commission. 2010. *National Policy Framework on Higher Education and Technical and Vocational Education*; and (iv) National Planning Department of the Ministry of Finance and Planning. 2010. *Development Policy Framework*.

- enable the establishment of flexible delivery mechanisms that respond to the characteristics of a wide range of needs of stakeholders; and
- enable effective coordination between different ministries, the center and the states, and public and private providers.

The plan and policy aim to increase the total annual capacity for skills development from 3.1 million trainees at present to 15 million. The skills development initiative does not discriminate between private and public delivery. Instead, it focuses on outcomes, competition among training providers, and their accountability. A coordination structure is being established to avoid a piecemeal approach and to ensure coordinated actions by all stakeholders. The policy calls for the establishment of a national vocational qualifications framework. With fast-changing skills in the labor market, the focus will be on short, relevant, and effective courses that will get candidates into the workplace. Efforts will be made to separate government financing from the means of delivery, i.e., not just to support government training providers. Attempts will also be made to focus financing on outputs and performance, and funding trainees directly. Regulations will be changed to encourage apprenticeships and enterprise-based training.² Training institutions will be evaluated and accredited on measurable criteria, and the ratings will be publicized. Employment exchanges will be restructured as career guidance centers. On equity, one target is to raise women's participation in skills development programs by 30% by the end of the Eleventh Five Year Plan.

Envisaged outcomes include the following:

- demand-driven system guided by labor market information, thereby reducing skills mismatch;
- expansion of outreach: adequate participation of women, disabled persons, and economically backward groups and minorities—enhancing their access to training and increasing employment opportunities;
- a national vocational qualifications framework that will recognize and certify competencies regardless of mode of learning;
- competency-based training in line with nationally and internationally recognized standards;
- focus on emerging occupations;
- lifelong learning: focus both on preservice and in-service training;
- stress on research, planning, and monitoring;
- involvement of social partners: sharing responsibility for management and financing of skills development with all stakeholders, and providing greater space for public–private partnerships;
- use of modern training technologies including distance learning, e-learning, and web-based learning; and
- skill upgrading of trainers, their quality assurance, and improvement of status.

The National Skills Development Policy document also includes an overview of the present capacity of the training system by ministry and type of provider (something not done in the Nepal and Bangladesh policy documents), as well as projected demands. It identifies the number of training institutions under 23 ministries and departments, and a total annual training capacity of 995,000 people (Government of India 2009).

² India currently has 260,000 apprentices in training in 24,000 establishments. The target is to increase these numbers fourfold.

APPENDIX 5

Good Practices and Innovations in South Asia

Box A5.1

Bangladesh: Employers Fill Skills Gaps in Garment and Textile Industries

Three industry associations in the garment and textile sectors have established their own training institutions to meet the demand for higher level technical skills. The Bangladesh Garment Manufacturers and Exporters Association Institute of Fashion Design offers graduate, diploma, and certificate courses in such subjects as apparel merchandising, manufacturing and technology, and fashion design. The Bangladesh Knitwear Manufacturers and Exporters Association provides short courses of 1–6 months in textile merchandising, industrial engineering and lean manufacturing, production planning, knitting and linking, industrial sewing, and quality assurance. The Bangladesh Textile Manufacturers' Association runs a center of excellence in textile training—the National Institute of Textile Training, Research and Design. Programs include yarn and fabric manufacturing, dyeing and finishing, garment technology, textile testing and quality control, and computer application in textiles. The target people for the courses are fresh graduates of textile programs, and working professionals in the textile industries such as entry-level supervisors. All these initiatives are self-financed through fees from trainees and contributions by the associations.

The following table shows the dimensions of the initiatives in 2010:

Association/Institution	Enrollment	Graduates	Instructors
BIFT	1,320	1,240	30
BKMEA	170	1,080	18
NITTRAD	460	400	8

BIFT = Bangladesh Garment Manufacturers and Exporters Association Institute of Fashion Technology, BKMEA = Bangladesh Knitwear Manufacturers and Exporters Association, NITTRAD = National Institute of Textile Training, Research and Design.

Source: ADB. 2011c. Innovative Strategies in TVET for Accelerated Human Resource Development in South Asia: Country Paper: Bangladesh. Draft. November. Consultant's report. Manila (TA 6337-REG). (Also referred to as "Bangladesh Country Report" or "BCR")

Box A5.2

Bangladesh: Chittagong Skills Development Center

The Chittagong Skills Development Center (CSDC) is an industry-led private skills training center in Chittagong whose purpose is to develop Bangladesh's workforce in strategic sectors where human resources are scarce, mainly in the telecommunications and manufacturing industries. The CSDC is modeled after the Penang Skills Development Center in Malaysia. The CSDC started in 2007 as a collaboration among five companies, the Chittagong Chamber of Commerce and Industry, the AK Khan Foundation, and the Underprivileged Children's Educational Program to promote telecommunications skills development. The CSDC is highly demand-responsive, offering tailor-made courses to employees in local industries to boost industrial productivity. Among the courses offered are leadership skills for

managers, power system maintenance in telecommunications, strategic procurement, workplace team building, industrial safety, workplace training, and finance for nonfinancial professionals. The duration of the courses varies from 1 to 5 days, and most of the 1-day programs are offered at 2,500 taka per participant. Since inception, the CSDC has delivered 164 training programs for about 2,930 people. In 2010, a total of 320 trainees received training in 21 programs, and in 2011, about 600 were trained in 33 programs. Trainers are highly experienced specialists recruited from locally renowned industries and institutions on a part-time basis as needed. The center, which also offers courses in Dhaka, has no permanent facilities, but rents space as needed for the training. This, plus few permanent staff, keeps expenditures low. The center is now self-supporting through fees with some help from the participating industries. Its main challenge is to maintain and increase the support of its members and attract further attention of industry.

Source: ADB. 2011c. Innovative Strategies in TVET for Accelerated Human Resource Development in South Asia: Country Paper: Bangladesh. Draft. November. Consultant's report. Manila (TA 6337-REG). (Also referred to as "Bangladesh Country Report" or "BCR")

Box A5.3

Bangladesh: Nongovernment Organization Training for Underprivileged Youth

Among the leading nongovernment organizations (NGOs) in Bangladesh engaged in innovative and quality vocational education and training, the Underprivileged Children's Educational Program, Dhaka Ahsania Mission, and Mirpur Agricultural Workshop and Training School have uniquely designed and delivered programs. They have several points in common: All serve poor, underprivileged youth or adults; all have well-qualified staff and proven training content; all devote considerable attention to practical skills; all give considerable time and attention to follow-up placement in employment; and all have high placement rates.

Underprivileged Children's Educational Program (UCEP) has been directly involved in providing alternative basic education and skills training to underprivileged youths for 4 decades. UCEP targets urban working and distressed children (aged 11 and older) who have little to no opportunity for normal schooling and are working full time, often in hazardous jobs. The number of technical schools operated by UCEP increased from 3 in 2002 to 10 in 2010. Enrollment likewise increased from 1,700 to 4,800 including secondary school certificate (vocational) (SSC [voc]) during the same period. The main characteristics of UCEP's operations that lead to the success of its model include flexible schooling hours; learning while working; emphasis on practical training (80%); on-the-job training; curriculum review in consultation with employers; trades as per market needs; and linkages with other technical schools, employers, and the community. Skills training lasts 6–12 months in 17 marketable trades. UCEP updates its curricula annually based on employer feedback from regional employers' committees. It also maintains an employment and field support group: More than 50 staff members maintain linkages with employers and arrange job placement for UCEP graduates. The staff also conduct market surveys on a regular basis to identify the skills or trades that employers need. UCEP is financed by a consortium of partners comprising the Department for International Development of the United Kingdom, the Embassy of the Netherlands, and Save the Children International.

The **Dhaka Ahsania Mission (DAM)** Institute of Technology and Vocational Education and Training provides mid-level technical training with flexible timing to those who have earned a secondary school certificate. DAM has an employment cell that maintains regular contact with employers and that regularly follows up with employed graduates. DAM also operates five vocational training institutes in urban and rural areas for the underprivileged, offering 12 trades, plus six outreach courses in rural areas. Its sources of financing are local donations and external projects and programs.

Mirpur Agricultural Workshop and Training School (MAWTS) was started in 1973 with technical and financial assistance from Caritas Switzerland. The training programs of MAWTS offer different modes of delivery—short training modules, training-cum-production, 6 months off and 6 months on-the-job training, and 35 mobile training units in rural areas. Each school has a job creation officer to arrange jobs for the graduates. MAWTS receives financing from aid agencies and its sponsoring agency, as well as from sale of goods produced in its workshops.

Comparative Analysis of the Major Features of Technical and Vocational Education and Training Programs Offered by UCEP, DAM, and MAWTS

Organization	Programs	No. of Trades	Enrollment	Curriculum	Employment
UCEP	Vocational training	18	4,800	<ul style="list-style-type: none"> ■ Market responsive ■ Flexible in timing ■ Provision of on-the-job training ■ Most trades are 1 year in duration 	More than 95% of job seekers within 6 months
	SSC (voc)	3	730	BTEB	90% of job seekers
DAM	Diploma in engineering	7	1,502	BTEB	
	Vocational training	15	2,033	<ul style="list-style-type: none"> ■ Own market responsive curriculum ■ Most trades are 6–12 months in duration 	72% of job seekers
MAWTS	Diploma in engineering	2	80	BTEB	
	Trade course	2	44	Own curriculum of 3 years duration consisting of 2 years off-the-job and 1 year on-the-job training	90% of graduates
	Modular course	71	1,050	1–14 weeks duration	90% placed after the course completion
	35 mobile training units	6	525	5 and a half months	85% of total graduates placed in jobs (self and wage)
	8 regional technical schools	5	2,688	1 year consisting of 6 months off-the-job and 6 months on-the-job	88% of total graduates placed jobs

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

Source: ADB. 2011c. Innovative Strategies in TVET for Accelerated Human Resource Development in South Asia: Country Paper: Bangladesh. Draft. November. Consultant's report. Manila (TA 6337-REG). (Also referred to as "Bangladesh Country Report" or "BCR")

Box A5.4

Nepal: Employer Association Trade Schools

In response to employer complaints that they do not get adequate levels of human resources, made more difficult because of emigration, the Federation of Nepalese Chambers of Commerce and Industry (FNCCI) decided in 2005 to establish trade schools (*illam prashikshan kendras*) in nine district locations. The intent was to establish a collaboration between the FNCCI and local government agencies. A board of five to seven persons was created in each location, chaired by the local chamber of commerce president, and including the local development officer. Token money was provided by the government to establish the trade schools. Each school had one or two permanent employees and hired outside trainers on a part-time basis. The schools were to be self-supporting through fees charged plus contributions from local government. Reportedly, the trade schools train about 600 youths per year. However, two or three of the chambers lost interest, and their schools are no longer functioning.

Some of the lessons from the FNCCI experience are as follows:

- (i) A proper ownership structure is needed as well as continuous dialogue with the local government. Government institutions have training budgets and are not keen to do training with chambers but would rather link with private providers with which members have a personal interest.
- (ii) Trade schools should be located where employment opportunities and industrial activities take place, and should continuously assess the training needs demanded by industry.
- (iii) The initial budget for each trade school, 250,000 Nepalese rupees (\$29,569), could not finance much capital expenditure or training activity.
- (iv) The proliferation of nongovernment organizations providing free training of inconsistent quality has reduced the demand for fee-paying, good quality training.
- (v) The success of the schools depends on a manager devoted to a career with expertise in marketing.

Sources: Interview with director general of FNCCI in October 2012; ADB. 2010. Innovative Strategies in TVET for Accelerated Human Resource Development in South Asia. Country Paper: Nepal. Draft. December. Consultant's report. Manila (TA 6337-REG). (Also referred to as "Nepal Country Report" or "NCR")

Box A5.5

Nepal and Sri Lanka: Recognition of Prior Learning

The National Skills Testing Board in Nepal tests those who have obtained qualifications outside the formal technical and vocational education and training (TVET) system. This includes the elementary level, the basic skill test for anyone willing to get his or her skill competence certified by a national system. This does not demand any entry qualification. The recognition of the test completers at this level is a manual skill. Level 1 is not specific and is open to all candidates with any entrance qualification below secondary education. The recognition of this level is equivalent to grade 8 of general education for employment.

In Sri Lanka, skills testing exists for awarding of national qualifications to people with work experience only. One of the National Apprenticeship and Industrial Training Authority's main functions is assessment and awarding of qualifications for skills obtained in the labor market. Recognition of prior learning occurs mainly in welding, construction, and automotive occupations. Subject to success in assessments conducted by inspectors, applicants can gain a national vocational qualification. In total, 12,000 people gained recognition through this process in 2011.

Sources: ADB. 2011b. Innovative Strategies in Technical and Vocational Education and Training (TVET) for Accelerated Human Resource Development in South Asia: Sri Lanka Country Report. Draft. May. Consultant's report. Manila (TA 6337-REG). (Also referred to as "Sri Lanka Country Report" or "SLCR"); P. Brady and R.P. Perera. 2012. TVET Sri Lanka Addressing the Knowledge Age. Draft report (v1.2, January). Unpublished. Colombo (TA 7746-SRI). p. 29; ADB. 2010. Innovative Strategies in TVET for Accelerated Human Resource Development in South Asia. Country Paper: Nepal. Draft. December. Consultant's report. Manila (TA 6337-REG). (Also referred to as "Nepal Country Report" or "NCR")

Nepal: Employment Fund Using Performance-Based Incentives

The Employment Fund aims at raising the incomes and living standards of disadvantaged youths aged 16–35 by providing them with quality skills training and by facilitating their entry into gainful employment. The Employment Fund was established in 2008 as a joint effort of the Government of Nepal, the Swiss Agency for Development and Cooperation, and HELVETAS Swiss Inter-cooperation. HELVETAS operates the fund under a steering committee with representatives from the government and aid agencies. Currently, the Employment Fund is financed by the Swiss Agency for Development and Cooperation; the Department for International Development of the United Kingdom; and, more recently, the World Bank.

The target group is divided into three categories: (i) disadvantaged groups, (ii) economically poor and socially disadvantaged (e.g., Janajati and women), and (iii) economically poor from other castes. Training in more than 60 trades is delivered through private training and employment service providers (T&Es), and follows Council for Technical Education and Vocational Training standards for content and certification. Apart from technical skills training, all trainees receive an orientation on reproductive health, HIV/AIDS, and labor rights. Women are provided with a life skills training package. Those opting for self-employment may attend basic business skills training and are linked with financial services. Local employment opportunities are identified through rapid market appraisals conducted by preselected T&Es. Field officers of the fund regularly monitor the performance and training quality of the T&Es. The fund uses a differential pricing mechanism that pays T&Es a higher rate for the poorest and most discriminated against. A unique feature of the program is financing based on outcomes. T&Es are paid in three installments after completion of the training: 40% on completion of training and passing of National Skills Testing Board skill tests, 25% after 3 months based on verification of employment, and 35% after 6 months of employment above a predefined minimum income. This outcome-based payment system effectively assists the fund in meeting its main goals: quality, relevant training, and gainful employment.

In 2011, 82 potential T&Es applied for contracts; 36 were preselected and 32 were finally contracted; 6–8 were eventually weeded out for nonperformance. The fund started with 4,000 trainees in 2008, increasing to 15,000 in 2012, with an accumulated total from 2008 to 2012 of 54,700 trainees. In 2010, 81% of the 11,400 trainees (85% female) were gainfully employed after 6 months at an average income of 21,200 Nepalese rupees in 55 districts and 65 occupations; 87% of the trainees passed the NSTB skill tests. Most (68%) trainees came from category (ii), with 17% from category (i) and 15% from category (iii). Success of the program, among others, depends on careful monitoring and evaluation of training processes and employment results. Final employment and income levels are verified by sampling 30% of graduates for face-to-face interviews.

Sources: Employment Fund brochure, *Skills for a Better Life*; PowerPoint presentation, *Skills Leading to Employment*, delivered by Siroco Messerli to HELVETAS Swiss Intercooperation Pakistan on 19 September 2011; and interview with team leader of Employment Fund in October 2011.

Sri Lanka: A Tradition of Training through Apprenticeships

Training through apprenticeship has a long history in Sri Lanka and still functions effectively. The National Apprenticeship Board was established in 1971 and became the National Apprenticeship and Industrial Training Authority (NAITA) in 1990. NAITA has a management board of 14 members, all from the private sector. In addition, it has 24 industry advisory committees to advise on competency standards. NAITA has nine district offices, three national training institutes, and more than 50 provincial training centers. By the nature of its programs, NAITA has considerable collaboration with the private sector. The private sector plays a strong role in governance, planning, and advice on competency standards as well as an ongoing dialogue with individual enterprises in the administration of apprenticeship activities. Three types of apprenticeship programs exist:

- (i) sandwich pattern (year 1: 6 months of institutional training followed by 6 months of on-the-job training; years 2 and 3: 3 months of institutional training and 9 months of on-the-job training);
- (ii) apprenticeship with short-term prevocational training (2 months of institutional training followed by variable length on-the-job training of up to 3 years depending on the trade); about 80% of apprentices follow this pattern; and
- (iii) apprenticeship with long-term training (termed dual apprenticeship) consisting of 1 year of full-time institutional training followed by 1 year of on-the-job training.

The apprenticeship process starts with assessment of an enterprise. If it is suitable, applicants are sought for apprenticeship positions in the firm. Applicants undergo an aptitude test and a joint interview with a NAITA inspector and an enterprise representative. Successful applicants are offered a training contract with reduced wages and keep a daily log. NAITA inspectors carry out ongoing assessment and monitoring of the log. At present, there are 150 apprenticiable occupations.

NAITA also arranges in-plant training of up to 6 months for other tertiary institutions. About 4,700 students completed these internships in 2010. NAITA enrolled an estimated 33,000 students/apprentices in 2011, supported by 300 teachers and 190 inspectors. The top six sectors were hotels; information and communication technology; automotive; construction; metal and light engineering; and electrical, electronic, and telecommunications.

NAITA reportedly had a 75% employment rate prior to 2010. This highly successful program is not without its challenges. Attrition rates were relatively high at about 26%, as apprentices left apprenticeship contracts to earn higher wages in normal employment. There are more vacancies for apprenticeships than applicants. Overall, still, NAITA has established strong relationships with enterprises, and the system successfully links young people to employment.

Sources: ADB. 2011b. Innovative Strategies in Technical and Vocational Education and Training (TVET) for Accelerated Human Resource Development in South Asia: Sri Lanka Country Report. Draft. May. Consultant's report. Manila (TA 6337-REG). (Also referred to as "Sri Lanka Country Report" or "SLCR"); P. Brady and R.P. Perera. 2012. TVET Sri Lanka Addressing the Knowledge Age. Draft report (v1.2, January). Unpublished. Colombo (TA 7746-SRI). pp. 27–29, 58.

Sri Lanka: National Vocational Qualifications Framework

Sri Lanka is furthest along in adoption and implementation of a national vocational qualifications framework (NVQF). Bangladesh and Nepal intend to implement such systems, but have not yet started.^a A vocational qualifications framework is a single set of criteria for definition of a qualification, ranked in a single hierarchy of levels with distinct descriptors. Each qualification is defined as a cluster or set of competencies or learning outcomes, independent of source or form of provision. Each qualification is composed of elements, or units or unit standards. NVQFs promise to raise quality through quality assurance systems and by involving industry in the setting of standards or learning outcomes. NVQFs also promise better congruence between training outputs and labor market demands, increased transparency of qualifications through definition of output standards, horizontal and vertical mobility, and recognition of prior learning.

The NVQF in Sri Lanka comprises seven levels: levels 1–4—craft, levels 5 and 6—middle-level technical and diploma, and level 7—bachelor's degree. Development of the NVQF started in 2002 with assistance from the Asian Development Bank through the Skills Development and Technical Education Development projects. In 2004, courses were launched at the craft level. Further development ensued up to 2010. The NVQF now encompasses 110 qualification standards at the craft level, 14 at the middle technical level, and 4 at the degree level. Training centers throughout Sri Lanka deliver 614 accredited courses. The government provided financial assistance for training institutions, including private providers, to adopt the new teaching standards. The Tertiary and Vocational Education Commission (TVEC) has issued 50,000 NVQ certificates in total, including 15,000 in 2011. A report on the Sri Lanka system concluded that “the NVQ system has made the expected impact in improving the relevance and quality of TVET. The majority of training institutions in the public and private sectors offer qualifications according to the NVQ unified system.” Moreover, “The NVQ system in Sri Lanka has reached a sustainable level” (ADB 2011).

Many countries have run into difficulties in implementing NVQFs. As stated in a recent International Labour Organization (ILO) review, “considerable evidence of difficulties associated with implementing qualification frameworks was found” (Allais 2010). Another ILO report stated that attempts by developing countries to introduce NVQFs “. . . appear to take little account of the considerable difficulties faced by countries that have already attempted to implement NQFs” (Young 2005). Sri Lanka is no exception. According to a task force report, relatively few of the standards have been implemented in training institutions.

Implementation problems can be classified as political, technical, administrative, and financial. Sri Lanka has avoided the political problems of other countries by locating the responsibility for the NVQF in one government organization, TVEC. Moreover, the NVQF has strong political support. However, technically, a key problem is that NVQF qualifications have been implemented based on older curricula and without a strong focus on competency standards. Courses at different NVQF levels are not significantly differentiated. A diploma in automobile maintenance, for example, does not substantially differ from that of a lower level apart from more academic material added. More importantly, some of the levels do not equate with international qualifications. For example, none of the current levels from NVQF 3–6 in automotive technology equates even to an Australian level 3.

Administratively, the resources and expertise available for development of the NVQF do not match the requirements. The NVQ directorate has just six staff members (excluding clerical), and contractors tend to lack full expertise in competency-based training. Development or revision of standards is a lengthy, time-consuming process. Industry representatives are

reluctant to be involved because of the time required and because the standards are being developed from scratch. With many more standards yet to be developed, this means there are fewer resources to revise existing standards. Current assessment systems lack the capacity to handle the projected numbers of trainees finishing NVQF programs. Shortages of accredited assessors result in difficulties in finding assessors for particular occupations or locations. This leads to long delays in being assessed, contributing to a lack of confidence in the new qualifications and to complaints that the whole process is too slow.

Financially, sustainability is an issue in what is a high-cost system. It is not clear that the NVQF process is sustainable at the current level of resources. The NVQF system may be attempting to do too much in preparing training curricula for all standards. More could be delegated to training providers to make the process less labor-intensive. Standards could be obtained from elsewhere and adapted to the local context. Delivery and assessment should be based on the standards and not the curricula, which in turn should be developed as guides and not prescriptions. TVEC needs a more strategic approach to better use its small complement of staff.

As in other countries, the full implementation of the NVQF is a long-term process of decades. Much has been achieved and learned from the implementation of the NVQF, but there is now a need to review current processes and requirements to ensure international comparability and long-term feasibility.

^a The TVET Policy Framework (2007) in Nepal and the National Skills Development Strategy (2009) in Bangladesh both call for the introduction of a national qualifications framework for TVET.

Sources: ADB. 2011. *The National Qualifications Framework for Skills Training Reform in Sri Lanka*. Manila; Michael Young. 2005. *National Qualifications Frameworks: Their Feasibility for Effective Implementation in Developing Countries*. Skills Working Paper 22. Geneva: ILO; Stephanie Allais. 2010. *The Implementation and Impact of National Qualifications Frameworks: Report of a Study in 16 Countries*. Geneva: International Labour Office; P. Brady and R.P. Perera. 2012. *TVET Sri Lanka Addressing the Knowledge Age*. Draft report (v1.2, January). Unpublished. Colombo (TA 7746-SRI); Government of Sri Lanka, Ministry of Youth Affairs and Skills Development. 2011. *Report on the Future Directions of TVET Sector in Sri Lanka to Facilitate Project Preparatory Technical Assistance of the Asian Development Bank*. Task Force Report. Unpublished. Colombo.

Sri Lanka: Career Guidance and Counseling

The Ministry of Youth Affairs and Skills Development, as part of the Skills Development Project, has established a guidance and counseling system. The objectives are to raise the public image of technical and vocational education and training (TVET) and the employment rates of graduates. The system consists of three levels: national, district, institutions. The National Center for Career Guidance and Counseling Service with three staff operates within the ministry. The national center coordinates 22 district career guidance and counseling centers, located mostly in district-level training institutions of the four main government training organizations (Department of Technical Education and Training, Vocational Training Authority, National Apprenticeship and Industrial Training Authority, and National Youth Services Council). In addition, 92 career guidance units operate within public training institutions. About 500 staff members have been trained in 2–4 week courses on guidance and counseling techniques.

Tertiary and Vocational Education Commission research, based on a sample of 300 service recipients, showed relatively high user satisfaction, including about 80% satisfaction with information received and 50% who took action following the advice. A survey of 20 guidance officers indicated that more than 80% had bachelor's degrees and at least 5 years of experience in career counseling, all had participated in local professional training, and about one-third had received overseas training. However, career guidance and counseling faces several issues. A working party described it as “insufficient and ineffective.” Effective coordination appears to be lacking. Career guidance at training centers seems to serve mostly the function of social marketing for programs of the training center, rather than channeling potential trainees into high-demand occupations and training opportunities more widely. Career guidance services need to be connected to the full range of TVET programs. Linkages with the Labor Market Information System are tenuous, particularly on job vacancies and anticipated market demand. More than 60% of surveyed guidance officers indicated lack of modern equipment to perform their jobs, such as computers and internet. The existing service, however, seems to be a solid base from which to address these issues.

Source: P. Brady and R.P. Perera. 2012. TVET Sri Lanka Addressing the Knowledge Age. Draft report (v1.2, January). Unpublished. Colombo (TA 7746-SRI). pp. 11–13, 66.

Box A5.10

Sri Lanka: Accredited Training Providers' Association

The Accredited Training Providers' Association (ATPA) was formed in 2007 under the Companies Act, and has more than 50 members out of a total of more than 1,100 registered private providers, enrolling about 2,500 trainees. The requirement for ATPA membership is accreditation by the Tertiary and Vocational Education Commission (TVEC) to offer courses under the national vocational qualifications framework (NVQF). ATPA's purpose, besides representation of common interests to government, is to help members raise the standards and quality of TVET. The membership falls into two broad categories, as does private provision as a whole: private business operations and community benefit organizations (e.g., nongovernment organizations). The different goals of the two categories dictate course offerings. Private businesses offer predominantly programs in hairdressing and beauty culture, textiles and garments, and information technology. Community-benefit trainers deliver a broader range of programs at NVQF levels 2–4, including trade training in air conditioning and refrigeration, auto mechanics, carpentry, house wiring, plumbing, and welding.

ATPA also intends to establish, maintain, and administer a fund to support the training institutions. The association is sustained through external support, TVEC subsidies, and member fees. TVEC has disbursed 2.7 million Sri Lanka rupees to 16 private institutions to enable them to deliver 28 NVQF courses, particularly in construction, automotive, electrical, and electronics. ATPA advocates that benefits enjoyed by government training institutions should be extended to its membership, including concessions on student transport and electricity rates, and exemption from the value-added tax.

Sources: ADB. 2011b. Innovative Strategies in Technical and Vocational Education and Training (TVET) for Accelerated Human Resource Development in South Asia: Sri Lanka Country Report. Draft. May. Consultant's report. Manila (TA 6337-REG). (Also referred to as "Sri Lanka Country Report" or "SLCR"); P. Brady and R.P. Perera. 2012. TVET Sri Lanka Addressing the Knowledge Age. Draft report (v1.2, January). Unpublished. Colombo (TA 7746-SRI). p. 43; and interview with the vice president of ATPA, October 2011.

Box A5.11

Sri Lanka: Training of the Disadvantaged by Nongovernment Organizations

Besides the tracer study evidence from government-sponsored studies, the experience of nongovernment sector providers appears to be very interesting, particularly in the context of promoting equity. For example, the World University Service of Canada has been actively engaged in vocational training activities in the periphery with the implementation of the Project for Rehabilitation through Education and Training in 1989. Its goal is to enhance the socioeconomic conditions for marginalized under/unemployed women and youth at the district level. Its training programs cover both traditional and nontraditional trades. In terms of regional coverage, its target beneficiaries represent three regions of the country: south, east, and north. The total enrollment in nontraditional programs in March 2011 was 420, with a female representation of 19%. The employment rate was 71% for male participants and 31% for females. The average monthly wages for male and female trainees were 10,664 Sri Lanka rupees (SLRs) and SLRs5,837, respectively. Among nontraditional trades, total enrollment was 55, all being females. The project also reported 61% employment with average wage level of SLRs4,862 per month. In spite of some methodological limitations, the findings of this tracer evidence indicate an impressive contribution to skills development of marginalized men and women at the peripheral level by nongovernment TVET providers.

Source: ADB. 2011b. Innovative Strategies in Technical and Vocational Education and Training (TVET) for Accelerated Human Resource Development in South Asia: Sri Lanka Country Report. Draft. May. Consultant's report. Manila (TA 6337-REG). (Also referred to as "Sri Lanka Country Report" or "SLCR")

Sri Lanka: Centers of Excellence

In an otherwise flat technical and vocational education and training landscape, where every campus of every institution tries to do everything, a few institutions exist that specialize in a few areas. These institutions have a concentration of staff with high-level technical expertise and are generally well equipped.

The Ceylon German Technical Training Institute (CGTTI) was established in 1959 with assistance from the Federal Republic of Germany for training skilled workers to maintain the government's bus fleet. Currently, under the Ministry of Youth Affairs and Skills Development (MYASD), the institute has developed into a specialist center of excellence for motor vehicle repair and associated engineering trades. The annual intake is 350 students, with a total enrollment of about 1,200 taught by 150 academic staff. Teachers are required to have 3 years of industry experience. The shortage of applicants means that the institute tends to recruit its own graduates with the most experience. Training lasts 2–3 years depending on specialization. The first 9 months of training are common to all trades, followed by an aptitude test and examination. The final year involves 6 months of in-plant training followed by 6 months of institutional training. An estimated 90% of the students find employment, of whom about 10%–15% go to the Middle East. The attrition rate is low at 5%. The institute plans to introduce diploma-level programs in mechatronics and in refrigeration and air-conditioning.

The Sri Lanka Institute of Tourism and Hotel Management (SLITHM) is the main provider of training in tourism and hotel management under the Sri Lanka Tourist Board. It has a main institution and five other centers. SLITHM has a governing board of five people from industry. All six centers enroll about 4,000 students yearly in two intakes taught by 40 instructors. Only about 10% of the students are female, largely due to cultural barriers to women working in the restaurant and hospitality sector. The institute provides training on four levels: craft programs of 3 months; certificate programs of 5 months; intermediate courses of 6 months, with 5 years of industry experience required for entry; and diploma level training of 3–4 years in duration. About 45% of the annual budget comes from fees and other income. In line with the type of training, consumables account for about 40% of the budget. Staff are well qualified and experienced: the norm is 3 years of industry experience. However, staff retention is a problem; in 2010, 7 of 40 staff left for better-paying opportunities. Moreover, staff need to be kept abreast of the latest technology. Substantial demand for workers is projected in the tourism and hotel sector, well beyond current supply capacity. The institute is planning to address the supply deficit by enhancing the capacity of the 40 existing private colleges through franchising arrangements. For a fee, the institute will inspect a college, provide curricula, and audit the establishment. In return, the private college will be able to market itself as a SLITHM franchisee.

CGTTI and SLITHM have significant potential for being resources to industry and other training providers.

Sources: ADB. 2011b. Innovative Strategies in Technical and Vocational Education and Training (TVET) for Accelerated Human Resource Development in South Asia: Sri Lanka Country Report. Draft. May. Consultant's report. Manila (TA 6337-REG). (Also referred to as "Sri Lanka Country Report" or "SLCR"); P. Brady and R.P. Perera. 2012. TVET Sri Lanka Addressing the Knowledge Age. Draft report (v1.2, January). Unpublished. Colombo (TA 7746-SRI).

APPENDIX 6

Innovations from Other Countries

Box A6.1

Brazil: Employer-Owned and -Managed Training

Experiences in Brazil, one of the earliest countries to adopt levy-financed training authorities, underscore the importance of ownership and employer participation. The chronic gulf between supply and demand is bridged by giving full control of training to its users. The National Industrial Apprenticeship Service (SENAI) was created in the 1940s and operates under the ownership of the Federation of Industries. SENAI was followed by four other sector-specific services aimed at commerce, rural areas (SENAR), small enterprises (SEBRAE), and transport (SENAT). All the institutions operate under the same basic structure and legal framework. The industries tax themselves to fund their training programs. A 1% levy on the payroll funds the training operations, and the chambers of employers run the institutions with full independence and under private sector statutes.

The five institutions have evolved in separate directions. SENAI maintains a network of 500 training institutions and trains 2 million workers a year. SENAR and SEBRAE were first created as government bureaucracies, but this led to inefficiencies, lack of responsiveness and flexibility, and political spoils. They were recreated more recently with ownership, management, and budgets given to the respective employer associations. Because training markets had already been developed in the country, both SENAR and SEBRAE opted to buy training in the market rather than to establish their own training institutions. SENAT, the most recent offshoot of SENAI, with the same rules and legal framework, took an entirely different path for delivery of training: It created an extensive network for training via satellite for more than 1,000 firms throughout the country.

Source: Claudio de Moura Castro. 2000. When Employers Control Training Many Things Can Happen, cited in Richard Johanson. 2009. A Review of National Training Funds. SP Discussion Paper 922. Washington, DC: World Bank.

Box A6.2

Indonesia: Enhanced Industry Partnerships for Vocational Secondary Schools

A review of Asian Development Bank projects in technical and vocational education across Asia and the Pacific (ADB 2004) concluded that linkage with industry is the single most important factor in training success. This lesson was incorporated into the project's design. The project notes that local linkages with industry and the business community have strengthened in recent years. Vocational schools rely on industry partners, local government, and the local business community to keep in touch with demand. Industry partners such as chambers of commerce and local businesspeople sit on school committees; advise on course content; provide instructors and work placement opportunities; and, in districts with significant industry, have supplied vehicles, equipment, and scholarships. Close contact with the business community enables schools to be flexible and to maintain program relevance. However, stronger links with industry are still needed. School–industry linkages can be achieved in a variety of ways, including national–international linkages

such as those with Cisco and Caterpillar, work internships for students, certification, and job placement. A strategic element is to ensure that evaluation and assessment also have links to industry by involving industry workers in the assessment of students' practical skills.

Enhanced industry partnerships are central to the project. National and local linkages with industry are promoted through formal partnerships. Assessors from local industry are paid to assess students completing competency-based modules and to train teachers. To support close ties with industry, each model school enters into at least one formal arrangement with a local industry partner to share knowledge and expertise. Each school is expected to deliver more than three courses per year for skills improvement and retraining of workers. In these ways, vocational schools build relationships with local industry for mutual benefit; industry benefits by having workers' skills upgraded; and the schools gain a better understanding of industry needs. Enhanced industry partnerships yield more work-study placements, shorter job search time, and reduced employment mismatch.

Sources: ADB. 2008b. *Report and Recommendation of the President: Vocational Education Strengthening Project*. Manila; ADB. 2004a. *Improving Technical Education and Vocational Training: Strategies for Asia*. Manila.

Box A6.3

India: National Skill Development Corporation—a Public–Private Partnership

The National Skill Development Corporation India (NSDC), announced in the minister of finance's budget speech for 2008–2009, is the first of its kind in India. It aims to promote skills development by catalyzing creation of large, quality, for-profit vocational institutions. It provides gap funding to build scalable, for-profit vocational training initiatives. Its mandate is also to enable support systems such as quality assurance, information systems, and train-the-trainer academies either directly or through partnerships. Its objective is to contribute significantly (about 30%) to the overall target of skilling/upskilling 500 million people in India by 2022, mainly by fostering private sector initiatives in skills development programs. Its mission statement, among others, calls for NSDC to (i) upgrade skills to international standards through significant industry involvement and develop necessary frameworks for standards, curriculum, and quality assurance; (ii) enhance, support, and coordinate private sector initiatives for skills development through appropriate public–private partnership models, and strive for significant operational and financial involvement from the private sector; and (iii) play the role of a “market-maker” by bringing in financing or gap funding, particularly in sectors where market mechanisms are ineffective or missing. A large part of its efforts are directed at skills development programs in the unorganized sector.

NSDC is a not-for-profit company under the Companies Act. It has an equity base of Rs100 million, of which the Government of India accounts for 49%, while the private sector has 51%. NSDC's structure and governance provide autonomy, stature, and continuity. The 13-member Board of Governors has four government nominees, one of whom is the chair of the corporation (from the private sector), plus the chief executive of the corporation and eight other members from the private sector. Thus, about 70% of membership comes from industry. Government representatives include the ministries of finance (economic development); labor and employment; and micro, medium, and small enterprises. The private sector is represented by national associations, including the Federation of Indian Chambers of Commerce and Industry, Confederation of Indian Industry, Confederation of Indian Textile Industries, Gems and Jewelry Export Promotion Council, and Council of Leather Exporters. NSDC also has a National Skills Development Fund.

Source: NSDC website, <http://www.nsdcindia.org/about-us/organization-profile.aspx>

India: Vocational Education through Distance Learning

The National Institute of Open Schooling was established in 1989 under the Ministry of Human Resource Development. The institute offers both academic and vocational courses via distance teaching below the university degree level. The vocational education program offers 80 courses of various lengths in agriculture, engineering and technology, health, home science and hospitality, computers and information technology, business and commerce, and teacher training. More than 20,000 learners are admitted annually, and almost 80,000 learners have been certified in vocational courses since 2000. The vocational program operates through 1,425 accredited vocational centers. Besides stand-alone vocational courses, candidates can combine vocational subjects with academic courses to earn certificates at the secondary and senior secondary levels. Admission is year-round, with a minimum age of 14 and no upper limit. Teaching materials include self-instructional print materials and audio and video programs, supplemented by radio and television. Self-instruction is complemented by personal contact programs and practical training sessions at the accredited vocational centers.

Besides the secondary education programs, courses are offered for 6-month certificates, 1-year stand-alone and package courses, and a 2-year diploma course. Examples of subjects include a certificate in rural health; a diploma in modern secretarial practice; electrical technician; cutting, tailoring, and dressmaking; computer and office applications; web design; plumbing; and refrigeration and air conditioning. Tuition fees vary according to subject, ranging from Rs1,100 to Rs12,500 for the 1-year package (i.e., multiple skills) courses; Rs700 to Rs3,000 for the secondary level courses; and Rs600 to Rs7,000 for the 6-month certificate courses. Learners have 5 years to complete their studies. They progress at their own pace and may take examinations when ready.

Sources: Government of India. 2011. Ministry of Human Resource Development. *National Institute of Open Schooling—Distance Vocational Education Programs, Prospectus*. Uttar Pradesh.

Malaysia: Training Levy and Human Resource Development Fund

Malaysia's Human Resource Development Fund (HRDF) is an example of a flexible, demand-driven training scheme. The fund was established in 1993 with a matching grant from the government. It replaced an ineffective training tax scheme (a double deduction incentive for training). The objectives of the HRDF are "to facilitate and encourage employers in the private sector to systematically retrain and upgrade the skills of the work force in line with their business plans and national development." The HRDF Act created a council with representatives from employers and government and a secretariat to administer HRDF schemes. The levy rate is 1% for employers with 50 or more employees and 0.5% for small enterprises that wish to participate. Those who have contributed a minimum of 6 months are eligible to claim a part of allowable training expenses up to their total annual levy payments. Depending on their needs, firms can choose flexibly from among several programs: (i) preapproved training courses provided by registered external institutions, (ii) ad hoc in-plant or external training courses, or (iii) annual training programs. Prior approval by the Human Resource Development Council is required for the second and third programs. Administrative burdens on firms are reduced by automatic approval of courses under the first program and by using registered training institutions as collection agents of the council. In addition, the HRDF provides firms with grants for developing training plans, organizes courses on training needs assessment, and administers a variety of programs targeting small enterprises.

Between 1992 and 2006, the HRDF reimbursed firms more than 70% of the 2.0 billion ringgit (RM) collected, and approved training for 5.3 million workers. Critical success factors were (i) active employer involvement in governance and operating committees, (ii) reduced bureaucracy, and (iii) dissemination of information about the importance of human resource development for raising productivity and competitiveness.

An evaluation of the HRDF in 2001 studied its impact on the incidence of formal enterprise training and on productivity. The incidence of formal training in manufacturing enterprises rose from 47% in 1988 to 64% by 1996. The productivity impact of training was impressive—23% in small enterprises and 40% in medium and large enterprises. The difference was essentially because larger employers were more likely to use new technologies requiring skilled and trained workers. The study also found that the productivity impact of skills training was twice as high in firms with new technology as in those without it. The results indicated that productivity was raised by repeated episodes of skills training. In sum, the evidence showed that enactment of the HRDF in 1993 was instrumental in promoting increased enterprise training in Malaysia, particularly among medium-sized firms. The resulting increase in training investments made a strong impact on productivity growth, especially when training was continuous and not ad hoc.

Sources: Hong Tan. 2001. *Do Training Levies Work? Malaysia's HRDF and Its Effects on Training and Firm-Level Productivity*. Washington, DC: World Bank Institute; Richard Johanson. 2009. *A Review of National Training Funds*. SP Discussion Paper 922. Washington, DC: World Bank. p. 28.

Singapore: Skills Development Fund

The objectives of the Singapore Skills Development Fund (SDF) go beyond training to influence a company's choice of technology. This formed part of a broader government industrial strategy to restructure the economy toward a more capital-intensive system of production. What makes the Singaporean system unique is that the levy is imposed only on the lower-wage workers. The Skills Development Levy is imposed on employers with workers earning \$1,637 or less per month. The current levy rate is 1% of the monthly remuneration, or \$1.64, whichever is greater. The SDF received \$88.4 million from the levy in 2007 and \$99 million in 2008. One distinguishing characteristic of the SDF is the strong role of employers. Seven of 15 members of the Singapore Work Force Development Authority—the agency that controls the SDF—represent employers (including the chair and vice chair), compared with four for government and three for workers. Incentives for training are offered on the basis of a cost-sharing principle, and the training must be relevant to the economic development of Singapore. The amount of incentives that a company can obtain is not tied to the levy contribution.

The SDF provides financial incentives for training those in the workforce, those preparing to join the workforce, and those reentering the workforce. In its effort to support company training, the SDF provides grants on the basis of approved training plans through the Total Company Training Plan Scheme. It also promotes special training programs focusing on upgrading workers' skills. This includes the Training Assistance Scheme, which aims at all types of skills upgrading. In addition, the SDF finances training vouchers and assistance for information technology training for small and medium-sized enterprises. It promotes a systematic approach to skills certification through the Skills Certification Plan for training at least a third of a company's workforce in certifiable skills over a 3-year period. In addition, the SDF supports a training leave scheme for older workers and on-the-job training consultancy services for accelerating skills development in the knowledge economy.

The increase in company-based training programs has been significant. The number of people trained and the number of firms benefiting have multiplied since 1991. Still, the SDF experienced difficulties in transforming employers' attitudes toward training. Small enterprises and low-skilled workers still constitute largely unreached targets. In the mid-1980s, only 2.2% of firms with 10 employees or fewer applied for grants, compared with all firms with 200+ employees and 25% of firms with 50 employees. However, participation by small firms increased to 14% by 2000.

Sources: Government of Singapore, Singapore Workforce Development Authority. 2008. *Learning for Life: Advancing with Skill: Annual Report 2007/08*. Singapore; Richard Johanson. 2009. *A Review of National Training Funds*. SP Discussion Paper 922. Washington, DC: World Bank. p. 29.

Box A6.7

Republic of Korea: Training Levy System—Train or Pay

In the 1970s, the government pursued capital-intensive heavy industrialization—iron and steel, nonferrous metals, machinery, shipbuilding, electronics, and chemicals were the six strategic industries. Dramatic growth brought about a shortage of trained workers. To resolve this personnel shortage, the government decided that expanding public vocational training institutions was not enough and felt the need to introduce a compulsory training system into companies. In the mid-1970s, compulsory worker training and a training levy system were introduced. Employers above a certain size were required to conduct training or pay a levy. Specifically, employers with more than 300 workers were required to train at least 15% of their full-time workers, and fines were imposed if the requirements were not met. The fees were placed into a vocational training promotion fund used to support various training projects.

The enactment of these measures invigorated training within companies. Companies conducting in-house vocational training increased from 30 in 1974 to 476 in 1976, and the number of trainees increased from 12,000 to 96,800. More than 60% of companies conducted in-house vocational training. However, a substantial share of employers did not actively participate in vocational training, particularly those with weak economic growth, preferring to pay the levy rather than conduct training.

The size of enterprises required to provide worker training changed several times, from firms with 500 workers in 1975, to those with 300 workers in 1977, 200 workers in 1989, 150 workers in 1992, to 1,000 workers in 1995. The number of companies providing training ranged widely, often in correlation with the business cycle, from 239 in 1987 to 843 in 1994, and the number of trainees per year ranged from 14,800 in 1987 to 152,000 in 1994. In the mid-1990s, mandatory in-house vocational training was replaced by inclusion of vocational training as part of the skills development program of employment insurance.

Source: Young-Hyun Lee. 2009. Vocational Education and Training in the Process of Industrialization. In Vol. 5 of *Understanding Korean Educational Policy*. Seoul: Educational Development Institute.

Box A6.8

Chile: Tax Incentives for Worker Training and Use of Training Brokers

Chile uses tax incentives to stimulate worker training. Since 1997, the National Training and Employment Service (SENCE) has administered an income tax rebate program (*franquicia tributaria*) for firms that directly provide or contract registered providers to develop training programs for their workers. The tax rebate is up to a maximum of 1% of the firm's payroll, with a floor that benefits smaller firms. In 2002, more than 110,000 enterprises trained 846,900 workers, or 16% of the employed labor force. The total investment by enterprises in training amounted to about \$170 million, of which about 85% was funded from the tax allowance.

Firms present their training programs to SENCE and, if approved according to quality and relevance criteria, receive the tax rebate. Smaller firms without staffing resources to design training programs can use intermediate technical assistance institutions or “brokers” to intervene with training providers and elaborate the plans. Twenty nonprofit intermediaries (OTICs),^a organized on a sectoral or regional basis, are owned by a range of enterprises. OTICs design and competitively contract training services for groups of small enterprises. In effect, OTICs operate as packaging and buying agents for training services for enterprises not large enough to operate their own training departments. They charge a modest fee for the services, also tax deductible.

This operational model makes full use of the variety of training providers (public and private) available in the market, and lets firms choose the content of their training programs according to their needs. More than 1,000 approved private training suppliers compete for contracts. Chile's experience illustrates that privately provided technical and vocational education and training can be forthcoming in low- and middle-income countries, if public mechanisms are used to encourage private provision.

^a Ograniso Tecnico Intermedio para Capacitacion.

Sources: Regina Galhardi. 2002. *Financing Training: Innovative Approaches in Latin America*. Geneva: ILO; Eduardo Martinez. 2007. El Sistema de Formacion Profesional en Chile y su Financiamiento. In R. Galhardi et al., eds. *Financiamiento de la formación profesional en América Latina y el Caribe. Un estudio comparativo de buenas prácticas*. Montevideo: ILO/Cinterfor. pp. 127–166.

APPENDIX 7

Investment Priorities for South Asia

Besides traditional investments in constructing and equipping training facilities, developing curricula, and training teachers, the following types of interventions could be considered to build private sector participation and develop institutional capacities. Much of the focus is on support to enterprises and private training providers.

Build Private Sector Involvement and Provision in Skills Development

Approach: Provide funds to employers to identify and fill training needs.

Possible ways:

1. Establish a fund for enterprise-based training (Bangladesh).
2. Define skills training and manage by industry sector committees (Bangladesh).
3. Provide financing for skills development in the informal sector, e.g., through traditional apprenticeship (Bangladesh).
4. Use employers' associations, e.g., Federation of Contractors Associations of Nepal (FCAN) for the construction sector, to define skills shortages (Nepal).
5. Create an "Incentive Fund" to be administered by a private sector intermediary for
 - (a) partnerships between public training providers and private enterprises, and
 - (b) developing capacities of private training providers and nongovernment organizations (NGOs) (Sri Lanka).
6. Establish a private sector training broker agency to do a training needs analysis and training placements for enterprises, as well as to place public trainees in internships (Sri Lanka).

Support Private Training Providers

1. Provide a fund for the private management of public training institutions (Bangladesh).
2. Create and finance an endowment fund for exceptional NGO training providers (Bangladesh).
3. Create a private training providers' association to provide services and technical assistance to members (Bangladesh and Nepal).

Develop Systems and Capacity to Raise the Effectiveness and Efficiency of Technical and Vocational Education and Training Organizations

1. Planning and programming:
 - (a) Develop detailed action plans and programming for implementation of the overall technical and vocational education and training (TVET) policy (Bangladesh and Nepal).
 - (b) Develop a new national TVET strategy based on analysis of economic trends, potential, and priorities (Sri Lanka).

2. Organizational development:
 - (a) Restructure and strengthen the Council for Technical Education and Vocational Training (CTEVT) based on an organizational audit (Nepal).
 - (b) Analyze the structure, processes, and resources for central management of TVET, proposing alternatives and reform. This would include strengthening of labor market information and implementation of a management information system (Sri Lanka).
 - (c) In provinces/districts, (i) rationalize and integrate training offices and (ii) devolve authority to public training providers with accountability (Sri Lanka).

Financing and Financial Allocations

1. Create an integrated national skills development fund for financing based on performance under a reformed CTEVT (Nepal).
2. Study the feasibility of introducing a training levy—nationally or sectorally—administered by enterprises (Sri Lanka).
3. Implement performance-based budgeting for public training providers (Sri Lanka).

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

This publication highlights priorities and strategies in meeting current and emerging needs for skills development in South Asia. The report is in line with the Asian Development Bank's effort to support its developing member countries' priorities toward global competitiveness, increased productivity, and inclusive growth. It also identifies key issues, constraints and areas of improvement in making skills training more responsive to emerging labor market needs in South Asia as an important factor in sustaining high economic growth. The report was completed in 2012 under the Australian AID-supported Phase 1 of Subproject 11 (Innovative Strategies for Accelerated Human Resource Development) of RETA 6337 (Development Partnership Program for South Asia).

About the Asian Development Bank

ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to approximately two-thirds of the world's poor: 1.6 billion people who live on less than \$2 a day, with 733 million struggling on less than \$1.25 a day. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.