

FOCUS ON EDUCATION

# GOOD PRACTICE IN TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING

Asian Development Bank

ADB

# **Good Practice in Technical and Vocational Education and Training**

Asian Development Bank

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# Foreword

## Focus on Education

The Asian Development Bank (ADB) has long been providing financing and advisory assistance to its developing member countries (DMCs) for broadening and deepening delivery of education services. Under its new long-term strategic framework, or *Strategy 2020*, ADB reaffirms its commitment to stepping up education sector operations and contributing to further development of human capital and skilled labor force in the DMCs. ADB is keen to ensure the development effectiveness of all its operations and that the assistance provided must be relevant and responsive and must add value.

This series—Focus on Education—surveys important topics including education sector policy, financing, and service delivery; identifies key concerns; and distills practical insights. It is intended for practitioners in the education sector in Asia and the Pacific. It will draw on a wide range of sources, including materials on the experience of ADB’s education sector operations, and specific studies conducted by ADB. The series is integral to ADB’s efforts to support knowledge sharing and the implementation of *Strategy 2020* in the education sector. We hope that readers will find the series informative in their practice.



**Xianbin Yao**

Director General

Regional and Sustainable Development Department

# Preface

Technical and vocational education and training (TVET) and skills development pose a serious challenge, particularly in countries with rapidly evolving labor markets. The subsector is often under the responsibility of several line ministries. It has, more than any other subsector of education, strong linkages to both formal and nonformal labor markets. Thus, TVET and skills development undoubtedly constitute a challenging subsector of education.

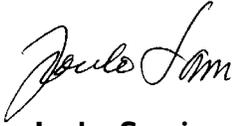
In many developing member countries (DMCs) of the Asian Development Bank (ADB), the government plays the dual roles of policy maker and regulator and of training provider, and plays them inefficiently due to lack of coordination and to capacity and financing constraints. Unfortunately, TVET and skills development often provide a slow, inflexible, inadequate, and expensive response to the needs of the labor markets. Consequently, the gap between TVET graduates and labor market needs is increasing in many DMCs. The stagnation in TVET and skills development is further exacerbating youth unemployment, which poses a serious challenge and vulnerability risk in the region.

ADB will assist DMC governments in strengthening policy guidance and regulatory frameworks for TVET and skills development, and in increasingly shifting the role of training provision to the private sector and industry. This will improve the flexibility, cost-efficiency, and labor market responsiveness of TVET and skills development, and strengthen linkages with industry. It will also provide essential support to economic rebalancing during economic downturns. ADB's role in facilitating and leveraging partnerships with the private sector and industry in DMCs will be important.

The purpose of this good practice guide is to support ADB's education sector staff in their dialogue with governments and other stakeholders of education in DMCs, and in their project processing tasks. The guide provides a menu of priority topics to be consulted as needs arise. It starts with an introduction to the definitions, scope, and distinguishing characteristics of the subsector. It discusses the importance and arguments for investing in skills development, highlights strategic questions for policy dialogue, and presents investment design issues, including strengths and weaknesses of different forms of training and financing. The guide highlights lessons learned and discusses their application. An appendix is included to guide assessment of programs and projects in the subsector.

Richard Johanson, ADB staff consultant, prepared the draft guide, which was finalized through peer review among education sector staff of ADB. Myla Bonto assisted in data preparation and coordination, and Imelda Marquez provided administrative support. Stephen Banta provided editorial inputs.

While the guide has been prepared primarily to support ADB's operations in TVET and skills development, we look forward to its wider use by education ministries, institutions, and other stakeholders of education in our DMCs.

A handwritten signature in black ink, appearing to read 'Jouko Sarvi', written in a cursive style.

**Jouko Sarvi**  
Practice Leader (Education Sector)  
Regional and Sustainable Development Department

# Abbreviations and Acronyms

ADB	–	Asian Development Bank
DFID	–	Department for International Development (United Kingdom)
DMC	–	developing member country
EBT	–	enterprise-based training
GTZ	–	German Agency for Technical Cooperation
HPW	–	high-performance workplace
IADB	–	Inter-American Development Bank
ICT	–	information and communication technology
ILO	–	International Labour Organization
IT	–	information technology
LMIS	–	labor market information system
NGO	–	nongovernment organization
NQF	–	national qualification framework
PNG	–	Papua New Guinea
PPP	–	public–private partnership
PRC	–	People’s Republic of China
PTP	–	private training provider
TVET	–	technical and vocational education and training
VET	–	vocational education and training

# Introduction

This introduction defines technical and vocational education and training (TVET) and skills development, explains the scope of TVET, and points out some distinguishing characteristics.

## Definitions

**Skills development** is defined as the acquisition of knowledge and skills for the world of work—the practical competencies, know-how, and attitudes necessary to perform a trade or occupation in the labor market (i.e., the outcome of the learning process without regard to source).

**Technical and vocational education and training** is the sources of skills acquisition (i.e., the training supply).

## Types of Skills

Basic skills include literacy, numeracy, problem solving, communication, teamwork, and the ability to read and follow directions—in effect the prerequisites for “trainability.”

Occupational skills are broad skills in a family of occupations, e.g., carpenter, mechanic, information technology (IT) specialist.

Job-related skills are those required to perform a particular job, e.g., construction framing, valve grinding, web design.

Semiskilled workers are those who have undergone a short period of training for a trade or who have learned only a limited part of a trade.

Skilled workers are artisans, craftspeople, or journeymen who have acquired the full qualifications to perform a recognized trade or occupation.

Technicians have acquired both the general theoretical principles and relative practical understanding, or high level mastery of technique, in a technological field.

## Scope

TVET is considered in Asian Development Bank (ADB) project operations to cover occupations in the primary, secondary, and/or tertiary sectors of the economy, and at the semiskilled, skilled, and/or technician levels (Table I).

**Table I: The Scope of TVET: Occupational Level by Economic Sector**

	Sector		
	Primary–Agriculture, Forestry, Mining, etc.	Secondary–Manufacturing, Transport, Utilities, etc.	Tertiary–Services, Commerce, Finance, etc.
<b>Occupational Level</b>	Technician	Technician	Technician
	Skilled	Skilled	Skilled
	Semiskilled	Semiskilled	Semiskilled

TVET = technical and vocational education and training.  
Source: Study team.

## Skill Delivery

Skills acquisition takes place essentially in two types of locations—in institutions and on the job. Institution-based training takes place in TVET institutions or schools and dedicated training centers. On-the-job training occurs in both formal and informal enterprises. These forms are frequently combined for best results, such as alternating between, e.g., training centers and workplace. The German “dual system” of apprenticeship is a famous example.

Different types of institutions have varying degrees of exposure to practical (versus theoretical) courses. Diversified secondary education may allocate 15%–20% of the time to practical subjects; technical and vocational secondary schools may have 40%–60% of available instructional time devoted to practicals; and vocational or rural training centers may spend 80%–90% of the time in practical instruction.

## Characteristics of TVET Systems

Table 2 gives some common characteristics of TVET systems.

TVET is arguably the most challenging subsector to manage because of changing labor market demands, diverse clienteles, the range of programs, and high inherent costs.

**Table 2: Characteristics of TVET and Their Implications**

Characteristics	Implications
<b>Purpose:</b> TVET is preparation for work in the labor market. The focus of TVET is on jobs (in contrast, general education focuses on mastery of the ability to learn, to understand the environment, and to prepare for the next level.)	The most important factor in TVET is the relationship of training outputs to employers and the job market. Because of the need for close interaction with enterprises, TVET institutions should be located near where the jobs are (in contrast, general education schools should be located where the population resides.)
<b>Fluidity of demand:</b> The type and range of training needs change as labor market needs change.	Before-and-after assessments are essential, i.e., analysis of labor market demands, and feedback mechanisms to assess the actual use of graduate skills in productive work.
<b>Opacity of demand:</b> It is difficult if not impossible to forecast skills demand far in advance.	TVET systems must be flexible to respond to changing demands. One way to accomplish this is to opt for short courses and continuous training. Another is to defer specialization until just before entry into the labor market. It is often better to provide training after completion of general education, because there is a better chance that market requirements will be known and the training can be more focused, and trainees will be more interested in jobs than further education.
<b>The vocational school fallacy</b> (Foster 1965 <sup>a</sup> ): Changing from academic to vocational content in schools does not reduce unemployment (except for instructors). The same can be said for diversifying curricula at the secondary level to make graduates more “employable.”	The causes of unemployment have to do with economic factors, not curriculum content.
<b>Heterogeneity:</b> TVET serves vastly different clienteles including youth, those with low income, workers, women, disabled, unemployed, and migrants—each with their own characteristics, contexts, and constraints.	It is important to differentiate clearly the target groups at which training is aimed and to adapt skills development to their particular circumstances.
<b>Multiple routes to skills acquisition:</b> There are essentially four kinds of training provision: institution-based training by the public and by nongovernment organizations (NGOs) and private providers, and enterprise-based training in the formal and informal economies (including traditional apprenticeship). Public provision is only one of the four routes to skills acquisition.	Public sources may be the minor part of training provision. One needs to take a broad view and look beyond public provision to training by private providers and enterprises.
<b>Inertia:</b> Training institutions have a tendency to look inward—to offer the same programs year after year regardless of demand or usefulness, simply because the instructors, buildings, and equipment are there and need to be used.	Incentives for training providers must be explicitly changed to respond to external labor market demands and improve system performance.

*continued on next page*

Table 2 (continued)

Characteristics	Implications
<p><b>Fragmentation:</b> Especially in former socialist economies, public training provision is typically given by different ministries—education, labor, higher education, agriculture, industry, transport, commerce, etc.</p>	<p>It is difficult to get an accurate picture of public spending on TVET, because the costs are hidden in different budgets. Bringing providers together in a common framework or policy can be an important objective to achieve better results for given levels of spending.</p>
<p><b>Costliness:</b> TVET costs more than general education, often much more, because of smaller class sizes for workshops and the costs of equipment, maintenance, and supplies. There are exceptions, mainly in accounting and business studies. Training for services (tourism, food services) also tends to be less costly than training in traditional trades.</p>	<p>There is particular need in TVET to identify costs, attend to cost management, and ensure financial sustainability.</p>

TVET = technical and vocational education and training.

<sup>a</sup>This is a classic, as valid today as when it was written.

Source: Study team.

# Rationales

This chapter examines two basic questions:

- Why is skills development important for ADB developing member countries (DMCs)?
- Why should public investment be allocated to skills development?

## Why TVET/Skills Development Is Important for DMCs

At its simplest, skills development is important for two reasons: it helps raise productivity (and consequently incomes), and it helps reduce poverty. The two, of course, are interrelated.

### **Productivity<sup>1</sup>**

TVET contributes to economic growth and competitiveness by enhancing productivity—individual, enterprise, and national. The benefits to societies from higher individual and enterprise productivity manifest themselves in increased competitiveness and employment, or in a shift of employment from low to higher productivity sectors.<sup>2</sup>

Skills development makes up a vital ingredient in productivity growth, but it is only one of several factors necessary for productivity growth. Skills development alone cannot raise enterprise and national productivity. By the

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<sup>1</sup> This section is drawn from ILO 2008a.

<sup>2</sup> “Productivity is a relationship between outputs and inputs. It rises when an increase in output occurs with a less than proportionate increase in inputs, or when the same output is produced with fewer inputs...Productivity can be measured either in terms of all factors of production combined (total factor productivity) or in terms of labor productivity, which is defined as output per unit of labor input, measured either in terms of the number of persons employed or the number of hours worked” (ILO 2008b: 1–2). Productivity improvements can also be understood at different levels. The productivity of individuals may be reflected in employment rates, wage rates, stability of employment, job satisfaction, or employability across jobs or industries. Productivity of enterprises, in addition to output per worker, may be measured by market share and export performance. An increase in productivity at any level can be attributed to various factors, for example, new capital equipment, organizational changes, or new skills learned on or off the job. Productivity is affected by factors at the individual level such as health, education, training, core skills, and experience; by factors at the enterprise level such as management, investment in plant and equipment, and occupational safety and health; and by factors at the national level such as supportive national macroeconomic and competition policies, economic growth strategies, policies to maintain a sustainable business environment, and public investments in infrastructure and education. (ILO 2008b: 5–6)

same token, other factors and policies are insufficient if they are implemented in isolation of skills.

Skills are critical in the structural adjustment of economies. Economic development at its most basic is a process of structural adjustment. As economies move from relative dependence on agricultural production to the manufacturing and service industries, workers and enterprises must be able to learn new technical, entrepreneurial, and social skills. Inability to learn new skills because of lack of opportunity slows the transfer of all factors of production from lower to higher value-added activities.

In the long term, productivity is the main determinant of income growth. Productivity gains increase real income in the economy, which can be distributed through higher wages. A low-wage, low-skill development strategy is unsustainable in the long term and incompatible with poverty reduction. Investment in education and skills helps to “pivot” an economy towards higher value-added activities and dynamic growth sectors. (ILO 2008a: 3).

Skills demands have increased in both advanced and developed countries,<sup>3</sup> at least before the recent economic recession. “Many ASEAN countries have been suffering from a shortage of qualified workers. This denotes a mismatch between the supply of workers with appropriate education and skills and the demand for those types of workers. Although skills mismatches and skills shortages are not new, their intensity has increased along with the region’s robust economic growth in recent years. Skills shortages are no longer limited to some multinational enterprises—they also affect the growing number of domestic companies that are trying to move up the value chain and expand into international markets. Skills shortages have become so widespread that they may constrain enterprise competitiveness and pose a serious risk to the region’s future development if not successfully addressed.”<sup>4</sup> Countries with ample skills in the workforce have a competitive edge in attracting foreign direct investment and achieving economic growth.

Four factors explain the increased skill demands in both advanced and developing countries:

- Physical capital and human capital skills are complementary. Increased investment in physical capital across countries is partly a function of absorptive capacity, which in turn depends on the availability of human capital and other institutional factors.
- New technologies are knowledge and skill intensive. Technological change therefore shifts the relative demand toward skills in the labor force. Specifically, strong associations exist between the use of new

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<sup>3</sup> “Despite its booming economies and huge numbers of people, Asia is suffering a big shortage of skills. And the Asian talent shortage is about to get worse....” *The Economist* (2007) as quoted in ADB 2008a: 24.

<sup>4</sup> ILO 2008a: 57.

information and communication technology (ICT) and the rise in skill and educational requirements.

- Increased competition and the introduction of ICT have prompted many firms to undertake fundamental changes in their internal organization and work practices. New forms of work organization require greater responsibility and skills from the workforce, including problem-solving and communications skills as well as multitasking.
- Trade openness causes a demand shift in skills through induced capital deepening or technological change.

In short, the skill level of the workforce provides the cutting edge for successful competition in the global economy (Johanson 2004). Alternatively, skill shortages hinder productivity, increase wages, and often require expatriate labor (ADB 2008a).

An increase in the demand for skilled workers as a result of trade openness, technological change, and changes in work organization can translate into greater income inequalities when and where skills are in short supply. However, increased wage premiums provide greater incentives to individuals to invest in education and skills development and thus support the virtuous circle of technology and skill upgrading from the supply side of skill accumulation (Johanson 2004).

Despite the current economic downturn, the appetite of some enterprises for skilled workers and technicians remains strong. Massive layoffs now taking place in many countries in the region have not eased the shortages of skilled staff. Those laid off generally lack the skills that are in demand; the shortage of skills continues, further worsening the downturn of economies. “Staff shortages persist despite the slowdown in economic activity. Slowing growth ought, after all, to mean that pressure to grow quickly is finally waning and the biggest headache of managers—finding and retaining staff—should be easing...Yet managers say the shortage of staff is still not easing...The (shortage of skilled staff) means that skilled workers’ wages are still going up. There is simply not enough talent to feed the growth. When any skilled workers are laid off they are instantly snapped up by other firms....Managers must cope with rising wages for skilled workers, a shortage of suitable staff and pricing pressure from local competitors” (*The Economist*, 20 November 2008). This picture has probably changed with the worsening of the current global recession. However, many employers tend to hoard scarce skills while shedding labor during periods of economic deterioration.

It is especially important to invest in skills development during an economic downturn:

- Workers made redundant by both cyclical and structural adjustment need to learn new skills.
- Building a skilled workforce can provide the flexibility to maximize gains when the economic cycle turns buoyant.

The role of TVET during economic recessions is discussed more fully at the end of the next chapter.

### ***Role of Skills Development in Poverty Reduction***

Skills development is an important instrument for those in the informal economy to raise their productivity, production, and incomes. Acquiring the right skills can reduce poverty. Human capital development is a vital step toward pro-poor growth. Investing in the productivity and skills of people is essential to raise the incomes of economically vulnerable groups and to reduce poverty. Basic education is not enough to prepare people for sustainable livelihoods. Skills development is an essential ingredient in creating capacities for increased income generation and for poverty reduction. Basic education and skills development are not alternatives: they should be complementary.

ADB's overall strategy features "inclusive economic growth"—ensuring that the disadvantaged and impoverished have access to participate in, and to benefit from, economic growth through, among other things, investments in education and training. (ADB 2008d: 11). "Investments in and access to education and vocational training are necessary for more inclusive growth.... ADB will... increasingly direct its attention to expanded, more accessible...and high quality technical and vocational education and training" (ADB 2008d: 20).

In short, TVET is an avenue to close skills gaps and to increase productivity and incomes—for the individual (in both the formal and informal economies), for enterprises, and for the economy as a whole.

## **The Case For and Against Public Investment in TVET**

Granted, then, skills are important. But why should governments invest in their development? Cannot the private sector take care of it? Here are some of the arguments for and against, explained in stark terms, without nuance.

### ***Arguments Against Public Investment in TVET***

Economic arguments are as follows:

- Employers want people with general education and universal skills, not necessarily TVET backgrounds.
- Employers will do what is necessary to train their workers.
- Where good jobs are available, people will find ways to acquire the requisite skills. The trainee will benefit in terms of increased income and will have an incentive to bear the costs, not the government. Workers will pay for training on their own.
- Private training providers (PTPs) will respond to the demand, so government does not need to provide the training. The evidence is that

extensive private training systems exist without government support, even in the informal sector (traditional apprenticeship training).

Cost-benefit arguments are as follows:

- Costs of TVET are high, and rates of return are low.
- Few graduates actually apply their skills. Consequently, investment in their training is considered wasted. Most TVET trainees either want to go on to higher education (they are bypassing the normal vertical line of progression), will enter occupations unrelated to their training, or will end up being unemployed.

As a practical matter, it is just too difficult to implement effective TVET in developing countries, especially low-income countries, as they typically lack money for equipment and supplies and especially for sufficient trained instructors. And they lack the necessary administrative capacity to deliver TVET well. Governments are typically less competent in managing institutions than the private sector.

As a result of all these factors, the best vocational training is probably a good general education.

### ***Arguments For Public Investment in TVET***

Economic counter-arguments are as follows:

- All countries invest in TVET—in fact, correlations indicate that the higher the level of country income, generally the higher the proportion of students enrolled in TVET institutions (ADB 2008a: 84–85). They must know something.
- Successful countries have invested heavily in skills development as a key instrument for growth (e.g., policy-led development as in the Asian Tigers—Republic of Korea; Singapore; Taipei, China; etc. Ashton et al. 1999).
- Externalities:
  - The trainees do not capture all the benefits. Society benefits as well from a skilled workforce (for example, a sufficient critical mass—a skills pool—can attract foreign investment, as in Republic of Korea and Taipei, China).
  - Well-trained workers teach good skills and discipline to their colleagues. Contrariwise, poorly trained workers teach bad habits, perpetuating the inadequate quality of the workforce (Castro 2009).
- In fact, employers and private trainers will not fill skill demands without government intervention.
  - Employers tend not to provide generic skills.
  - Large employers train staff inequitably, favoring higher staff levels disproportionately.
  - Small enterprises tend not to train their staff.

- In general, firms are not willing to do initial or preservice training. The risk of poaching or free riders tends to be high, the training long, and the skills generic. This becomes a classic priority for public initiatives.
- Private trainers favor low-cost programs, avoid capital-intensive fields, and neglect rural and peri-urban areas.

Cost-benefit arguments are as follows:

- Where the economy is growing, the economic rate of return can be high compared with other levels of education (examples are, Republic of Korea, Sri Lanka, Thailand).
- Some vocational subjects (commerce, computing, accounting, business studies, and entrepreneurship) are not more costly than a regular academic secondary curriculum.

Equity arguments are as follows:

- Skills can raise incomes for those in the informal sector; however, “employers” will not do this; low-income people typically cannot afford the direct and indirect costs of access to skills development. Therefore, the state should subsidize it in the interest of equity.
- Also, TVET generally serves lower income groups (e.g., vocational senior secondary schools in Indonesia).

The practical argument is that effective ways exist to organize and deliver skills in developing countries, e.g., Brazil's Serviço Nacional de Aprendizagem Industrial, Colombia's Servicio Nacional de Aprendizaje, Costa Rica's Instituto Nacional de Aprendizaje, the Training and Productivity Authority of Fiji, various Singapore skills development programs, and competency-based training in the Vanuatu Technical Institute.

Table 3 summarizes these points.

## Economic Rationales for Public Investment in Skills Development

It is important to keep in mind the difference between public financing and public provision of training. They are not synonymous, and the economic justifications differ. Public financing may be justified in many circumstances, but public provision has a more limited economic rationale. These are explained in Table 4.

**Table 3: Summing Up the Arguments For and Against Public Investment in TVET**

<b>Against Public Investment</b>	<b>For Public Investment</b>
Employers want “generic” skills and the ability to learn on the job, not TVET skills.	The private sector may be too limited in scope and strength to provide much training. And employers generally tend to under-train.
If skills are needed, employers will train their workers.	The underprivileged will not have access to skills development without government intervention.
If skills lead to well-paying jobs, people will pay to acquire them. And if people are willing to pay, private training providers will respond (supply response).	Private training providers will not fill the skills gaps by themselves; they focus narrowly on low-cost occupations in urban settings.
The high costs of TVET are wasted on people who do not apply the skills, because they enter different occupations, go on to further education, or are unemployed.	In growing economies, TVET can have high returns.
It is just too difficult to do TVET well in most developing countries because of lack of resources and poor institutional capacity.	Externalities occur—a sufficient pool of skilled workers can help attract foreign direct investment.
	Some TVET systems work well; it is a matter of doing it right (feedback, targeting, etc. See Castro 2008).

TVET = technical and vocational education and training.  
Source: Study team.

**Table 4: An Economic Rationale for Investment in TVET**

<b>Public Financing May Be Justified If:</b>	<b>Public Provision May Be Justified If:</b>
Externalities exist (e.g., poaching, skills gaps).	Private training capacity is weak.
Market rigidities exist (e.g., compressed wages).	Public provision is competitive in quality and cost.
Capital market failures occur.	
Information is lacking.	
Provision of skills is unequal.	

TVET = technical and vocational education and training.  
Source: Middleton et al. 1993.

# Strategic Questions on TVET

This chapter examines some of the fundamental strategic issues on skills development as a guide to policy dialogue. Policy dialogue should seek answers in several strategic areas:

- the role of government,
- how to achieve “demand responsiveness,”
- how to stimulate the provision of private and enterprise-based training (EBT),
- how to organize and manage skills development,
- how to ensure quality,
- how to achieve equitable access,
- how to raise and distribute funds for TVET in ways that improve performance,
- whether and how to vocationalize secondary education, and
- what role TVET has during economic recessions.

## What Should Be the Role of Government? How to Concentrate Government Involvement on the Right Things

Governments may be trying to do too many different things in skills development. Public resources for skills development are constrained by slow growth of government revenues and are stretched thin by competing priorities. In a constrained financial context, the government cannot possibly do everything. In view of the major contribution being made by private training in many countries of the region, the government should become a facilitator, concentrating its limited resources on the things that the private sector does not, or cannot, do.

Priorities for the government include

- developing policies and standards collaboratively with social partners and training providers;
- providing the public with information about labor market requirements, and the training system—the performance of the public system, and especially the scope, quality, outcomes, and cost of private provision; well-informed consumers are important to reforms;
- providing quality assurance;

- providing services to all training providers, public and private, by financing the development of instructional programs and materials, and by providing instructor training;
- regulating private provision to ensure quality through standards and outputs, where possible, instead of by controlling inputs;
- financing skills training for economically and socially disadvantaged groups, and for key occupations not (yet) covered by the private sector; and
- providing skills training where private solutions cannot be found, for example, in certain geographical areas or in strategic skills too costly for private providers.

What the government should not do is to duplicate skills provision that is, or can be, provided efficiently by nongovernment training providers. Government should also avoid entering markets already served adequately by private training programs so as to avoid crowding them out. To the extent that nonpublic providers are available and more efficient, the government can maximize the production of skills by financing its training through them.

## How to Achieve “Demand Responsiveness”—Matching Skills Supply and Demand

Criticisms of “supply-oriented” training systems abound. Supply orientation means that training institutions produce the same types of graduates, year in and year out, without regard for the needs of enterprises and the labor market. As stated in an ADB (2004b: 3) project document: “Outcomes...rarely guide the selection of skills and contents with the consequence that offered courses and their contents are regularly irrelevant to needs and demands.” Instead, what is needed is a “demand-responsive” training system.<sup>5</sup>

How can demand responsiveness be achieved? Demand responsiveness requires three things:

- clear signals on what skills the market needs,
- proper incentives, and
- a flexible training supply response.

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<sup>5</sup> The question arises: whose “demand”? In this context it refers to employer demand for workers in the labor market. Sometimes social demand, or demand for places in training institutions by students and their guardians, can be used as a proxy for market demand. However, that requires a free flow of information about employment rates and wages for various occupations.

Each requirement is discussed below.

Generating clear signals on what the labor market needs—good labor market information on demand and supply—includes surveys of the labor force, surveys of enterprise establishments, suggestions by key informants, etc. In particular, graduate destination (tracer) surveys should be conducted regularly about the degree of absorption of graduates in employment.

Employers may not be able to predict skill requirements more than a few months ahead, but they know best what skills they need and which skills are most difficult to recruit in the market. Training may not be the first thing on the mind of employers, particularly those in low value-added production, or even the second or the third. They are concerned mainly with developing markets, cutting costs, and increasing profits. They have to be convinced to spend their scarce time on training matters. However, when enterprises move up the value-added chain and compete on quality and technology, development of the human capital of the firm becomes of paramount importance.

Australia has introduced measures to make its TVET system more employer driven. The reforms started with greater engagement of industry and employers. A joint industry–government National Qualifications Council, chaired by industry, approves all new TVET programs and provides quality assurance on outcomes. This means that TVET policy is industry led. Industry skills councils representing 10 sectors and composed entirely of industry members develop standards and qualifications for various occupations. They provide a continuous input process for skills definitions (ADB 2008a: 94).

Signals are only the starting point; they are not enough by themselves. It is important to establish incentives to which training providers can respond. The key issue is what those in charge (in system management or in the training center) gain or lose by following demand. In the majority of cases, inertia carries a price, and change brings trouble to whoever promotes it. Therefore, change and responsiveness are a function of the incentive structure. The prizes for doing the right thing must be there, and the penalties for not doing it should be steep. If the incentives are right, training supply can respond (Castro 2009).

A flexible training supply can be established by such things as

- deferring specialized programs until closer to the time of the trainee's entrance into the labor market;
- shortening the length of training, coupled with recurrent provision of training in new skills to those in employment;
- arranging for employers to take on trainees and/or apprentices for more specialized skills;
- developing feedback mechanisms such as regular graduate destination (tracer) studies on graduates to identify skills still in demand or in saturation;

- employing trainers on contract so that courses and trainers can be changed as skill demands change;
- renting training equipment or using equipment available in the marketplace to avoid heavy sunk costs in particular technologies;
- attaching conditions on financial transfers to stimulate development of training supply as needed; and
- devolving authority to the training institution, allowing it to short circuit bureaucratic decision cycles.

Table 5 characterizes supply- and demand-oriented training systems.

**Table 5: Characteristics of Supply- and Demand-Oriented Training Systems**

Area	Supply-Oriented	Demand-Oriented
Market feedback	Indifference to the market	Relies on market feedback, e.g., tracer studies
Governance	Bureaucratic, government dominated	Participation by end users—employers
Management of institutions	Little, if any accountability, for results	Substantial accountability for results
Incentives	Obey rules, please paymaster	Raise revenue by selling services in the marketplace
Training programs	Same year-to-year	Vary by market demand
Instructors	Full-time, often civil service tenure or long-term contracts, low turnover; spend time exclusively in the training institution	Short-term contracts, use of part-time staff, sometimes rapid turnover; visit enterprises to learn skill requirements
Trainees	Trained in the institution only	Work practice, internships in industry
Facilities and equipment	Fixed	Adaptable, possibly rented
Budget	Assured, regardless of performance	Has to be earned

Source: Study team.

What are the ways to move from a supply-oriented to a more market demand-oriented training system? Here are some of the steps that can be taken:

- Emphasize employers in governance structures.
- Institute regular tracer studies and change program offerings accordingly.
- Pay incentives for meeting market-based performance standards.
- Pay by performance against predefined standards of quantity and quality, e.g., per trainee on schedule, per graduates meeting competency standards, per graduates employed.

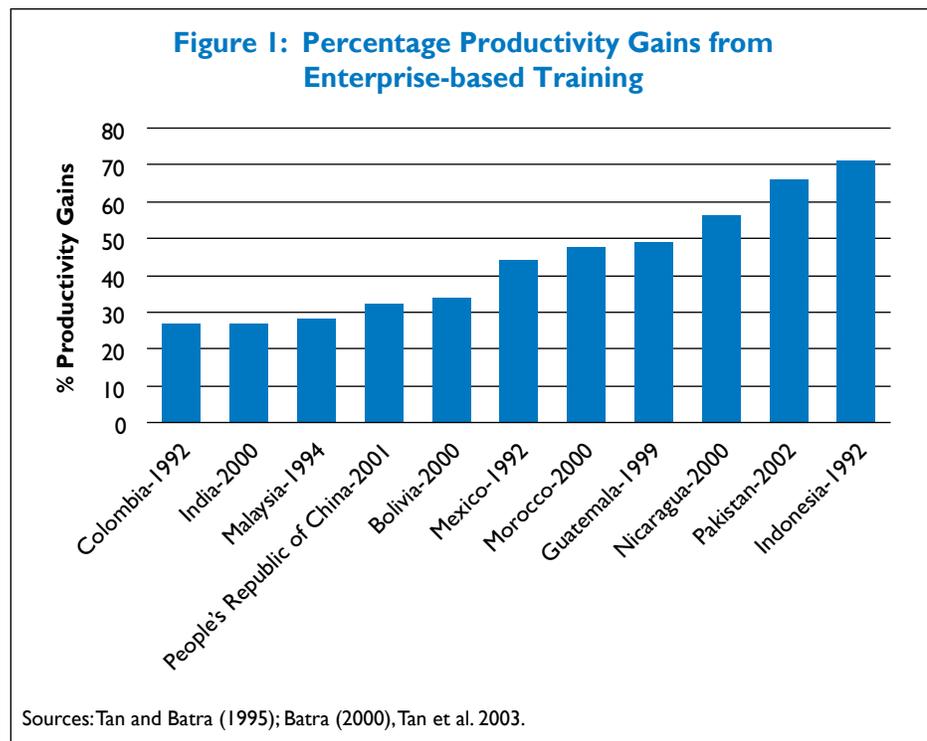
- Make managers and institutions accountable for results to boards of governors dominated by employers.
- Require that all or some of the budget has to be earned in the marketplace.
- Make institutions autonomous, able to make their own decisions, with proper safeguards and accounting controls.
- Sign contracts after competitive bidding for private companies to manage public training centers; pay them for performance (meeting specified standards).
- Rent premises and equipment.
- Put instructors on (short-term) contracts.

## How to Stimulate Employer and Enterprise Involvement in Training

### *Enterprise-based Training*

EBT can have a powerful impact on firm productivity. A study that analyzed data from investment competitiveness assessments (ICAs) revealed the productivity gains from EBT in developing countries (Figure 1).

A 1995 report found that EBT in a number of developing areas including Indonesia; Malaysia; and Taipei,China “...is associated with higher firm level

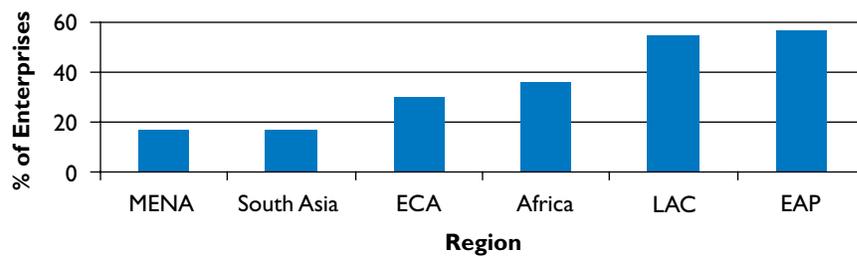


productivity in all...economies.” The report concluded that this “should dispel any skepticism [employers have] about the beneficial effects of training on productivity” (Tan and Batra 1995).

However, despite its impact on productivity, the incidence of EBT varies considerably across regions and countries (Figures 2 and 3).

Various measures can be adopted by public authorities to provide enterprises with incentives to expand their own EBT programs. These include training grants or loans to enterprises to help them cover or recover part of the cost of training. Another form of incentive for the expansion of EBT is the provision of a wage subsidy by the state during the period of training. The introduction of

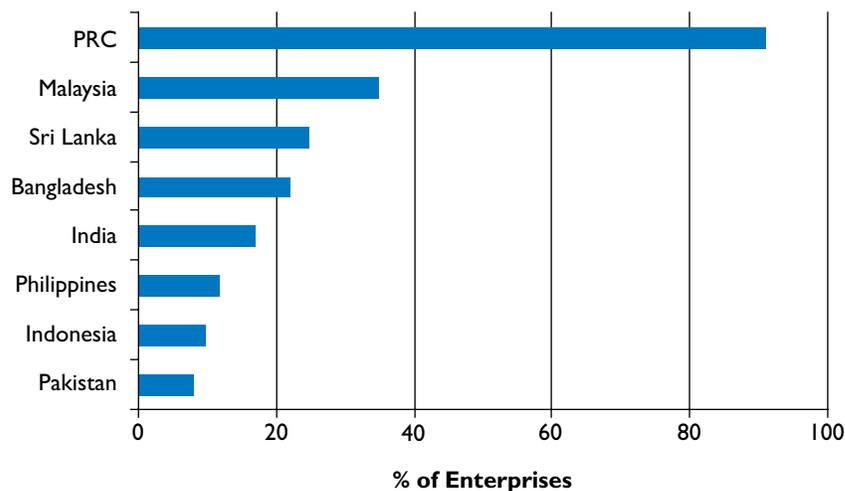
**Figure 2: Incidence of Formal Enterprise-based Training by Region**



EAP = East Asia and the Pacific, ECA = Europe and Central Asia, LAC = Latin America and the Caribbean, MENA = Middle East and North Africa.

Source: Tan 2006.

**Figure 3: Incidence of Formal Enterprise-based Training by Country - Asia**



PRC = People's Republic of China.

Sources: Tan and Batra 1995, Batra 2000, Tan et al. 2003.

such measures needs careful planning, execution, and control (the hardest part), or they may simply serve the purpose of subsidizing training that enterprises would otherwise have carried out anyway (Mitchell 1998).

The Singapore Skills Development Fund provides an incentive to employers for raising the qualifications of workers by assessing a 1% levy on workers earning less than S\$2,000 per month. Enterprises can apply for assistance from the fund for an array of programs regardless of the amounts paid into it. Training vouchers for employees of small and medium-sized enterprises, IT training assistance, comprehensive company training plans, a skills certification plan (a proposal for the training of at least one third of a company's workforce in certifiable skills over a 3-year period), a training leave scheme for older workers, and on-the-job training consultancies (Government of Singapore as presented in the International Labour Organization [ILO] website,<sup>6</sup> and SWDA 2008).

Stimulating EBT could be a priority in middle-income countries in Asia. Public support for EBT may be needed in a few clearly defined areas. Since many enterprises provide their own training without government support, direct public subsidies for EBT should be avoided. However, government has a positive role to play in supporting EBT. It should

- advocate training as a means to increase productivity and profits within enterprises,
- raise the basic skill levels of entrants to the labor market,
- stimulate training for low-educated workers and workers in small enterprises who have little access to training, and
- build the capacity of trade and sector associations to provide training services to their members.<sup>7</sup>

### ***Public–Private Partnerships<sup>8</sup>***

In a market economy, public–private partnerships (PPPs) are the glue that links education and employers. The term is used as shorthand for a range of public policies, funding systems, and curriculum frameworks that have as a shared goal a tightened level of communication among educators and employers (Hawley 2007: 2).

Public–private collaboration occurs at many levels, including the macro (policy) level, the meso (sector) level, and the micro (enterprise) level. Its

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<sup>6</sup> [www.ilo.org/public/english/employment/skills/hrdr/init/sin\\_2.htm](http://www.ilo.org/public/english/employment/skills/hrdr/init/sin_2.htm)

<sup>7</sup> Firms may underinvest in general types of training, because worker mobility may prevent them from reaping the benefits of such training. For this reason, basic types of training should be organized on an industry-wide basis, where firms are induced to cooperate in the effort via membership in industry associations, with a good deal of involvement by firms in running the training schemes.

<sup>8</sup> Public–private partnerships typically refer to two things: public sector collaboration with employers, and public support for private training provision. In this section, only collaboration with employers is considered. Support for private training is discussed in the next section.

scope ranges from employer-worker participation in shaping national training policies to an enterprise's donation of materials or giving of advice to a local training institution. The collaboration can be vertical, between local partners and national institutions, or horizontal, between local institutions or between national entities. PPPs can take the form of the representation of partners on training boards and committees so that they can provide advice and be consulted on policy issues, planning, curriculum development, performance evaluation, and quality control. At the micro level, partnerships can be developed between individual firms and public training institutions and may also involve local government and both public and private training providers, including voluntary agencies. Public training institutions may seek the advice and assistance of enterprises on curriculum development, the setting of quality standards, or performance evaluation, as well as the provision of information on training needs and planning, donation of equipment, vocational guidance and counseling, recruitment of successful trainees, or the organization of industrial attachments to give trainees or trainers practical experience (Mitchell 1998: 10).

The forms and modalities of PPPs vary widely. They can be formal and structured, or informal and flexible. They can consist of state inputs into enterprise training efforts, enterprise inputs into public training, joint efforts, interfirm alliances, or alliances between government agencies in a policy framework established in PPP. They may also involve intermediary institutional mechanisms through which enterprises are contracted to deliver training services in accordance with public policies, procedures, or priorities as a result of the introduction of incentives or the provision of public financing (Mitchell 1998: 11). In some places, particularly transition countries such as the People's Republic of China (PRC), partnerships between public TVET institutions and public enterprises may already be well established. The challenge lies more in forging partnerships between public institutions and private ones.

The establishment of effective and sustainable PPPs depends largely on the degree to which the state is prepared to delegate its authority and responsibility to the private sector and the degree of control retained by the state over systems shared with the private sector. Equally important is the extent to which private partners are willing and able to assume delegated authority and responsibility, which clearly depends greatly on the strength and capability of the private sector, of employers' and workers' organizations, and of other private partners (Mitchell 1998: 26).

## How to Organize and Manage TVET

The introduction stated that TVET is arguably the most difficult subsector to manage within education and training. How should it be organized and managed? How competent is the public sector to plan, organize, and operate training institutions?

## ***System Management***

Divided accountabilities make training delivery complex, lead to duplication of effort, and segment training supply. A clear trend exists toward the establishment of national coordination and consultative bodies. These are based on principles of partnership that can foster accountability and consensus. Coordinating bodies often lack the power to make decisions. In contrast, a semiautonomous training authority, an intermediary type organization, is an organizational alternative used with some success in the region (Papua New Guinea [PNG], Philippines, Singapore). Two lessons are important:

- Training authorities must be vested with real power in decision making and control over resources.
- Balanced representation is critical to success, especially to give employers' views appropriate weight.

## ***Institutional Management***

Centralized systems suffer from lengthy decision-making processes, remoteness from clients, and rigidity to change. Devolution of authority to training institutions can go a long way toward making training responsive to demand. At the local level, it may be possible to mobilize resources better. Relationships to the employment market can be much closer. Full-scale autonomy means independent operation—the ability to hire and release staff, decide on staff compensation, devise training programs, procure services and equipment, sell services, and retain income. It also includes the possibility of failing and closing. Full autonomy compels the institutions to find their own markets and resources. However, partial autonomy may be more realistic in most cases: training institutions could be free to offer new training programs directed at particular market niches and could retain the revenue generated. Decentralization is no panacea. It takes time and has to be carefully planned and monitored. Decentralization tends to increase variation between training centers. Those from remote or backward areas may stagnate or fall behind if a decentralization approach is not carefully designed and efficiently implemented.

## **How to Assure Quality in Skills Development**

The purpose of TVET is to provide relevant knowledge, skills, and competencies for employment and income generation. If the skills are not acquired, i.e., if the quality is bad, the money is wasted. Quality assurance for institutions is accomplished through registration, certification, and accreditation. Quality assurance for acquisition of individual skills is done through assessment and testing. Quality can be viewed in terms of inputs, processes, and outputs.

Lack of essential inputs compromises the quality of training in many countries. The first input for quality is definition of training standards, based on

occupational requirements. Two innovations are helping to put appropriate standards in place: the introduction of competency-based training and vocational qualification frameworks. Poor educational attainment of incoming trainees limits skill achievements. The level of skills and knowledge of teachers and work-based instructors is a key determinant of the quality of any country's system of education and training. Inadequate numbers and qualifications of instructors are among the main factors responsible for low quality of instruction. This applies especially to lack of industrial experience by trainers. Public bureaucracies seldom recognize the need to certify and remunerate instructors based on industrial experience. Facilities, equipment, and materials also tend to be underprovided or not kept up-to-date.

Quality assurance processes may also be weak, including skills testing systems. Norms and standards are not usually applied to individual public training institutions. Moreover, accreditation of private training providers has proved to be difficult.

Concerning the quality of outputs, most TVET systems fail to monitor or evaluate the quality outcomes of training in terms of competencies achieved (see ADB 2008a: 102–105 for elaboration).

Reforms in trade testing and examinations can exert a powerful and beneficial influence on the system to the extent that they are rooted in occupational analysis. Many systems of vocational training focus rigidly on preparation for terminal examinations or trade tests. Too often the tests have become obsolete and disconnected from labor market requirements. Employers may pay little attention to the formal qualifications in their hiring practices. Still, testing can be used as a powerful means to reform the content of vocational training. The key is to root the tests in the competencies required for the job, as determined by occupational and job analysis, and to keep the tests up-to-date. Good practice would involve employers in testing graduates, as has been done traditionally by the industrial chambers in Germany. Reforms in the Association of Southeast Asian Nations (ASEAN) are moving in the direction of establishing a regional qualifications framework. However, as conceived, these standards may be too complex for present capacities in some countries (DFID Briefing 2007).

One way to distribute quality training is through franchise arrangements. Under a franchise agreement a TVET provider can deliver training programs that have been developed by some other agency. The recipient (franchiser) avoids the development costs for the program and can generate income from delivering the course. The franchisee can recoup some of the costs of program development through fees charged to the franchiser. The benefit to the TVET system is extending access to qualifications to new regions. For example, the Fiji Institute of Technology offers local students the opportunity to follow the first 2 years of its courses without moving to the institute. This is more cost effective than establishing satellite campuses (see Fiji Institute of Technology in ADB 2008c; and Gasskov 2006: Unit 8.5).

Australia has taken several steps to raise quality assurance in its TVET system. A structure of standards-based qualifications has been developed. “Training packages” have been adopted based on competency or unit standards, guide for assessment of achievement of those competencies, and the qualifications framework. In effect, industry determines the outcomes, and providers are free to develop their own training programs to achieve the outcomes. This has two benefits: it frees industry from the minutia of curriculum development, and it allows creativity and innovation by training providers in the design of training. In addition, reforms have put in place a framework for quality assurance among training providers—to ensure that the 4,500 training providers throughout the country meet minimum standards in the delivery and assessment of training. Under the Australian Training Qualifications Framework, training providers are registered and audited according to core standards (ADB 2008a).

## How to Ensure Equitable Access to Skills Development

As stated, “inclusive” economic growth is at the heart of ADB’s long-term regional objectives (ADB 2008d). In TVET, this means promoting equitable access to skills acquisition. Equitable access can be considered from several perspectives: overall, by income, by location, and by gender.

### ***Overall Access to Skills Acquisition***

Gross and net enrollment ratios are indicators for measuring access to primary and secondary education. Nothing similar exists for TVET. However, it would be helpful to calculate the share of school leavers who have access to some form of skills acquisition. This can be done by comparing the intake into all TVET programs in a year with the number of dropouts and terminal graduates from each level of the education system. This “TVET opportunity index” is typically under 20% but may be less than 10% in some cases—which indicates severe overall lack of access (ADB 2008c: Table IV-1).

### ***Income***

In many countries, TVET ends up serving lower income populations by default. Educational achievement tends to be correlated with family income: those from higher income groups attend better, more well-endowed schools with better qualified teachers and tend to perform better on entrance examinations to higher levels of education. Selection examinations may unintentionally channel lower income students into second- or last-choice streams, including TVET. In turn, potential trainees from low-income households may need to drop out to support the family, i.e., may not be able to afford either the direct or indirect (opportunity) costs of attendance. To a large extent, the financial disincentives can be countered by offering scholarships and subsidies based

on financial need.<sup>9</sup> As a matter of equity, rates of financial support for TVET students should match or exceed financial assistance provided to students in secondary and postsecondary education. Another way may be to provide the training closer to the location of the disadvantaged, and to allow part-time training so that trainees can keep working while acquiring skills.

### **Location**

Urban residents have better access to services in general, and TVET is no exception. Rural areas are difficult to serve. The answer is not to spread TVET institutions evenly geographically if these are to serve modern-sector enterprises. Many instances can be seen in the developing world of failed training institutions placed far from available employment. TVET institutions have to be kept close to the jobs for reasons explained in Chapter 1. Instead, provision of residential facilities can compensate by enabling the enrollment of remote and disadvantaged students. The franchise arrangements described above are another way to provide training courses of reasonable quality to widely dispersed populations.

### **Gender**

Unequal access is also typical by gender, with females discriminated against in provision. This is usually the easiest form of inequity to document, as statistics typically show enrollment by gender. Beyond overall numbers, further inequity may occur in channeling female trainees into traditional female occupations, e.g., office work, sewing, and catering. These occupations tend to pay less than male-dominated occupations. However, attempts to divert females into nontraditional occupations (e.g., motor mechanics, plumbing, civil works) often run into the stone wall of gender stereotypes and can lead to frustration on the part of trainees. A comprehensive ILO study found a high degree of uniformity around the world in feminization of certain occupations—closely matching gender stereotypes in society regarding types of work that are appropriate for men and women (Anker 1998). There is little that TVET alone can do to change these stereotypes. But it can emphasize training for females in desirable jobs with higher relative incomes, e.g., medical technicians, ICT, design. In many situations, women can be trained in service-sector occupations for which demand is growing. An effective way to channel more female students into these nontraditional occupations is to train and recruit more female teachers in them. Typically, TVET institutions suffer from strong gender disparity in the training force.

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<sup>9</sup> E.g., in 2007, the PRC adopted a policy of supporting poor rural students in secondary vocational education at grades 10 and 11 with subsidies of CNY1,500 (\$220 equivalent) per year.

## How to Raise and Distribute Funds for TVET in Ways that Improve Performance

How can we pay for skills development? This involves two separate questions: (i) how to mobilize nongovernment resources for training, and (ii) how to allocate money to skills development in such a way as to stimulate better performance.

### ***How to Mobilize Nongovernment Financing for TVET***

Five methods can raise additional money for TVET beyond government subsidies:

- enterprise contributions including payroll levies on employers;
- tuition and other fees paid by trainees and their families;
- production and sale of goods and services by training institutions;
- community support and donations; and
- indirectly, expansion of nongovernment training provision.

These options for diversification can be used simultaneously. In addition, more efficient use of public financing is a way to free up resources for more and better service provision.

Training levies are covered in the next chapter.

Production of goods and services is a technique for mobilizing financing that is used mainly by nongovernment providers, but increasingly also by public providers. As a rule of thumb, only about a fifth of operating costs can be realized through production of goods and services (Ziderman 2003). The advantage is that it provides near real-world practical experience to trainees. The disadvantage is that it can exploit the trainee's labor to generate income for the school and its staff.

Financing of TVET is increasingly based on the principle of beneficiary financing—that those who benefit from training are those who should pay for it. Those benefiting are employers (through increased productivity) and individuals (through higher incomes). They should have an interest and incentive to help shoulder the costs of training. Applying this principle, however, is impeded where poverty and ability to pay are issues and where underdeveloped or restricted capital markets prevent borrowing against future income for training.

### ***How Resources for TVET Can Be Disbursed to Raise Performance***

Financing mechanisms concern much more than the allocation of money. The way money is allocated can be equally as if not more important as the amounts

transferred. Financial and management instruments can be used to reform public training outcomes. Reforming finance is at the crux of how to reform TVET systems.

Money is usually allocated to public training institutions on ad hoc, historical bases regardless of performance. This reinforces waste. Financial mechanisms can be powerful instruments for improving effectiveness and efficiency, specifically:

- Training funds have demonstrated success (see next section).
- Competition for funds has proven effective in creating training markets and reducing unit costs.
- Training vouchers have been successful in stimulating supply responses in limited cases. For example, in the Cambodia Education Sector Development Program II, vouchers have been distributed to communes for training in income-generating activities. Communal authorities allocate vouchers to residents for community-based training, informal apprenticeship, or institution-based training. Initial results appear highly successful in raising the incomes of participants.
- Payment by results has potential for increasing effectiveness in spending. For example, the Inter-American Development Bank (IADB) financed several youth training projects that conditioned payment to training companies on assurances of a job or internship for the graduates (Chile Joven and Proyecto Joven in Argentina). These arrangements succeeded.
- Use of normative financing focuses efforts on outputs and results.

Application of these financing mechanisms seems to be within the capability of most Asian governments.

## Whether and How to “Vocationalize” Secondary Education

One strategic choice facing governments is whether to provide TVET as part of the secondary education system. It may take several forms: separate vocational or technical secondary schools, separate vocational or technical secondary streams within secondary schools, or vocational and technical subjects offered as part of the general secondary curriculum. The latter is sometimes called “diversified” or “comprehensive” secondary schooling.

Many parents and educational leaders in Asia, as elsewhere, are concerned that young people complete primary and secondary education without learning any skills directly applicable in the labor market. Consequently, reforms are often undertaken to change the curriculum of general education by adding vocational skills useful in agriculture, business studies, or construction, i.e., adding some practical courses to an academic curriculum. The main reasoning

is as follows: School leavers need skills in the labor market to be productive and earn incomes. The general school curriculum does not provide sufficient occupational skills, and many graduates are unemployed. Therefore the school curriculum should be changed to add vocational preparation so that graduates can function better in the labor market.

Vocational subjects are desirable on general education grounds, as part of a well-rounded education intended for everyone if they can be afforded and provided without detracting from efforts to improve quality in core subjects in the curriculum. But research has not borne out the labor market justification for such subjects. So far no study has shown that adding practical courses as a minor part of a student's total curriculum (as much as one-third of the time) gives an advantage in finding work under severely depressed labor market conditions. Objections to the vocationalization of secondary education are as follows:

- Vocationalization is costly. Most vocationalization variants are more costly per student class period than mainstream general education subjects, primarily because of smaller classes and greater expense for facilities, equipment, and consumables. Unless a course can be taught to a full class of students (few can), operating costs will be more than twice those of non-laboratory academic subjects.
- Enrollment in some types of vocational courses is often strongly gender biased. The skills concerned are culturally identified with one gender only, for example domestic science and secretarial skills with girls, and industrial arts skills with boys.
- Vocationalization is hard to implement well. It requires specially trained instructors, preferably with actual work experience in the types of skills being taught. Teachers who have those qualifications are hard to recruit and retain. Vocationalization requires administratively complicated coordination of inputs.
- Finally, time spent on vocational skills training can detract from the teaching of basic academic skills, which are badly in need of improvement—also for labor market purposes.

For vocational skills development it is better to look to training centers that are specialized for such purposes, set up to respond to the labor market. Minor portions of a predominantly academic curriculum will not suffice.

Vocationalization may be considered in several cases. The first is in the use of computers, which is applicable across a variety of occupations and which has potential for use across subjects within general education itself. This is costly, however, and financial constraints limit the pace at which computers can be introduced. The second is low-cost programs that are not gender specific such as agriculture, accounting, and business studies. These are useful for broad occupational segments. A third case is the teaching of entrepreneurship as an integral part of formal education and training, a variant on vocationalization. The purpose is to teach the knowledge and skills that

will enable a graduate to plan, start, and run a business. A collateral purpose is to combat the negative image of self-employment. However, in introducing any practical subjects it is important to implement them systematically rather than precipitously, to analyze and weigh cost implications before going to scale, and to evaluate learning outcomes and impact (Johanson and Adams 2004: 86–88).

In sum, several questions need to be answered in searching for an appropriate strategic response about integrating vocational courses into academic secondary education:

- Is vocationalization consistent with student and parental aspirations? What proportion of the age group is enrolled in secondary education? If the enrollment ratio is relatively low, say half of the age group, the students may be seeking higher education opportunities and associated careers rather than careers at the trade level. An ADB (1999) review criticized ADB support for upper secondary technical schools in Malaysia on the grounds that virtually all the graduates went on to higher education, thus wasting a large part of the cost of their expensive secondary technical education. However, if secondary education enrolls a strong majority of the age group, many of the students will not be academically inclined, and some form of practical instruction could appeal to them.
- At what level is the “vocationalization” intended? Streaming of students into vocational areas is not appropriate at the lower secondary level, because it prematurely limits their choices. However, some exposure to low-cost practical subjects can be beneficial at that level if it is affordable and done well.
- What is the cost of vocationalizing secondary education? Vocationalized secondary education is expensive in several ways: the initial capital cost for equipment and workshops, the recurrent cost for consumable supplies and maintenance, and repair and replacement of equipment (a factor often ignored). In addition, it requires purpose-trained instructors, who are typically in short supply (and may command higher wages outside the education system).
- What are the likely benefits? A landmark study (Psacharopoulos and Loxley 1985) found that graduates of diversified secondary education (in Colombia and Tanzania) fared no better in the labor market than graduates of academic secondary schools, but diversified secondary education was much more expensive per student. Therefore, the cost-benefit ratio was less for diversified than for academic secondary schools.
- Can the country afford the costs of scaling up vocationalized secondary education? Many externally assisted projects can establish a few diversified secondary schools, but the reform flounders when the assistance is removed, because the country cannot afford to expand the policy to the rest of the country.

## What Role Can TVET Play in an Economic Recession?

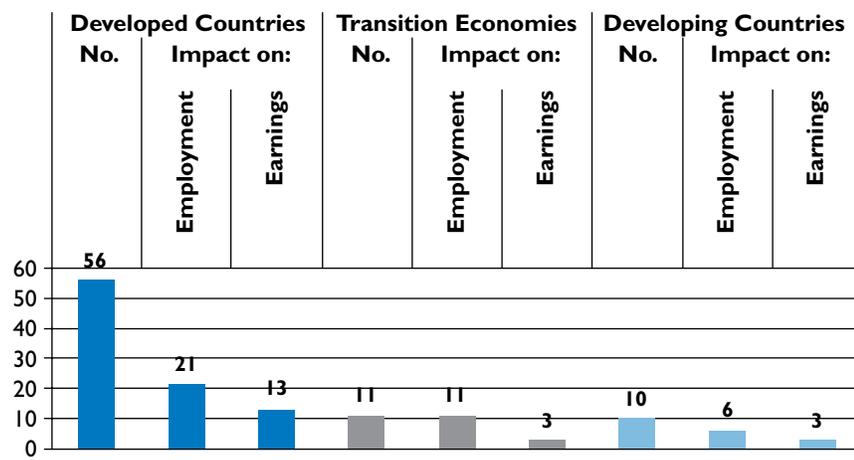
Does TVET have a role to play on offense or defense during an economic recession? In terms of positive contributions, economic stimulus packages often include funds for retraining workers made redundant during the economic downturn. But, do they work? TVET has the capacity, in theory, to qualify people to transfer from jobs in surplus to those in short supply. The effectiveness of retraining programs varies according to several characteristics, including the type of economic change taking place, the timing of the retraining, the clients, etc.

Not much evidence has been collected about the effectiveness of training programs for the unemployed in transition and developing countries. Most existing studies pertain to unemployment in developed countries only. However, one study included also evaluations of training programs for the unemployed in transition and developing countries, the results of which are shown in Figure 4.

Training programs for the unemployed in developed countries generated employment for the trainees in only 38% of the cases, and raised the incomes of the unemployed in only 23% of the programs. Within these totals, however, better results were reported for women in general and for training programs started before mass layoffs.

The results for programs in transition countries were better, at least in securing employment for graduates. This may reflect the case that it is easier

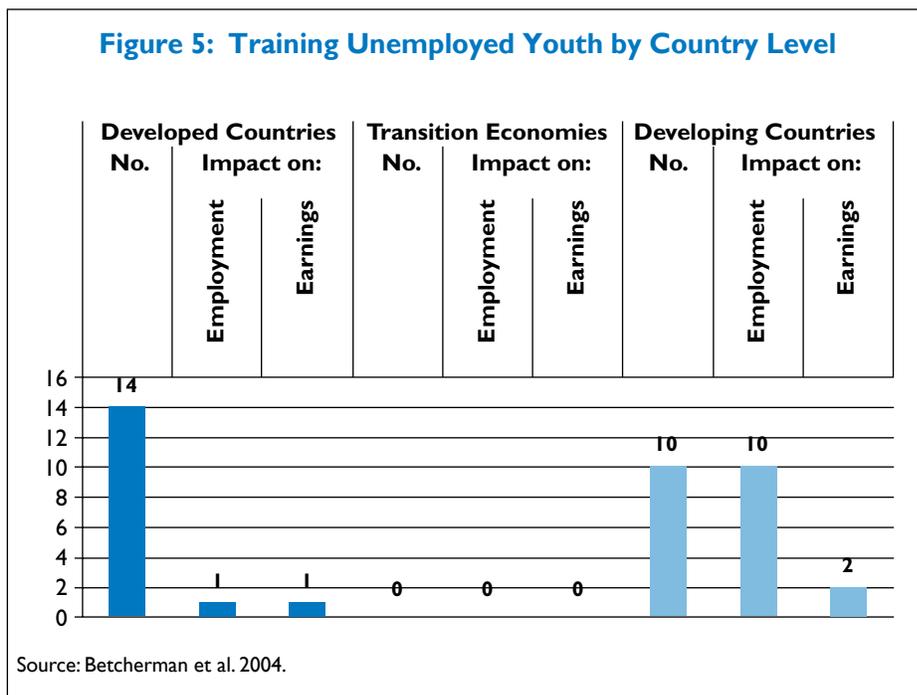
**Figure 4: Effects of Training Programs for Unemployed Persons on Employment and Wages by Level of Country Development**



Source: Betcherman et al. 2004.

to place retrained graduates in new employment under conditions of structural adjustment (when some sectors are contracting and others are growing) than under cyclical unemployment, when jobs are being shed across virtually all sectors of the economy. Ten evaluations looked at the effects of training programs on employment and earnings in developing countries. Sixty percent of the programs showed success in placing trainees in employment, but only 30% increased the incomes of participants.

What about training unemployed youth? Here again, attempts in developing countries have mostly ended in failure, as shown in Figure 5.



The success recorded in developing countries seems to be skewed by the “joven” (youth) programs started in Latin America, in part with IADB assistance. These include Chile Joven and Proyecto Joven in Argentina (ILO 2003). These programs targeted disadvantaged youth, combined training with work experience, and provided other services such as vocational assessment and psychological development. However, the costs of the programs were high, and there was little analysis of their costs and benefits. Still, the “jovenes” approach seems promising. This success cannot be generalized, however, as many national programs for training unemployed youth have failed in other countries. One researcher concluded that any positive employment impacts are likely outweighed by the costs of the programs, and that funds would be better spent on preventive measures—educating and training youth properly earlier in the system (Godfrey 2003).

As Adams (2007: 26) observed, “High rates of youth unemployment often come with the assumption that the unemployment is due to a lack of relevant

skills, making training a preferred option for public intervention. A host of other factors from lack of jobs growth and demand, the cost of labor tied to labor market policies, to unrealistic wage expectations on the part of the first-time job seeker may lie behind the observed unemployment. As a consequence, training is not always the most cost-effective intervention to facilitate young people's transition to work. It may be a necessary condition, but not a sufficient one. Labor market programs offering a wide array of services from counseling and job search assistance to remedial education and direct job creation may represent more cost-effective interventions."

The effectiveness of training and retraining for the unemployed depends first and foremost on whether jobs will be available at the end of the training. During cyclical contractions this may not be the case. Should TVET institutions then stop taking in trainees during a recession and lay off the staff? Such a measure would be short-sighted, as it often takes 2–3 years to produce a skilled graduate, by which time the recession may be over. But the type of training seems to matter. As observed by Hui and Smith (2003 as quoted in Adams 2007: 28), "In the cases studied, the type of training offered was important to the outcomes. In many of the industrialized countries, on-the-job training showed positive effects while classroom training tended not to have positive impacts on either employment or earnings. Language training for foreign workers and specialized training leading to formal qualifications had large positive impacts, reducing the probability of remaining unemployed. Training programs that had employer sponsorship, and were offered in enterprises tended to perform better."

Some evidence exists that companies that continue training their personnel during a recession are better poised to profit when the recovery begins. A study by the Cranfield School of Management (UK), *Nurturing Talent*, found a compelling business case for staff training, even during economic recession: "Effective training can reduce staff turnover and absenteeism, improve motivation, increase productivity, and help boost customer satisfaction. The report reinforces a plea by some of Britain's business leaders for employers to resist the temptation to cut spending on staff training. In an open letter published recently, the director-general of the Chamber of Business and Industry, together with the general secretary of the Trade Union Council, urged employers to sustain or even increase their investment in training, saying: 'Now is precisely the time to keep investing in the skills and talents of our people. It is the people we employ who will get us through. When markets are shrinking and order books falling, it is their commitment, productivity and ability to add value that will keep us competitive. Investing now in building new skills will put us in the strongest position as the economy recovers'" (Blinkhorn 2009).<sup>10</sup>

From a defensive viewpoint, what can TVET systems do to avoid problems during recessions? During recessions, government budgets are typically cut

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<sup>10</sup> Also, "New research...shows that nearly nine out of ten human resource professionals (88%) believe properly planned staff training can play a major role in addressing the challenges created by an economic slowdown" (IMC Learning 2009).

across the board. In addition, fewer trainees may be able to afford to pay the normal fees. TVET is particularly vulnerable to budget cuts because of its high cost structure compared with general education. Budget cuts are usually applied first to nonstaff spending such as consumable supplies and teaching materials—components essential for quality. There are no easy answers to this dilemma. Various defensive measures could be considered, such as temporarily reducing staff salaries, furloughing contractual staff, or having larger class and workshop sizes (thereby needing fewer instructional staff). Institutions could make greater efforts to attract fee-paying students while lowering the standard tuition to make it more affordable. Institutions with flexibility tend to cope better during economic contraction.

# Some Design Issues in TVET

This chapter examines the strengths and weaknesses of different forms of training and financing, including

- public training;
- nongovernment training;
- enterprise-based training;
- informal sector training, including traditional apprenticeships;
- training levies; and
- training funds.

## Public Training Systems and Institutions

Public training provision comes in many forms, including vocational centers, technical secondary schools, technical colleges, polytechnics, and rural and community skills centers. Consequently, it is often difficult to generalize experiences and lessons learned in training provision.

Public training systems play a key role in skills provision worldwide, and the Asia and Pacific region is no exception. They continue to play a strategic role, particularly in meeting demands for skills vital to the economy and involving experimentation and innovations that can be adopted more widely. However, public training tends to be overwhelmingly formal, and formal training is overwhelmingly directed at modern-sector wage employment, which may absorb only a minority of those entering the labor market in many DMCs. Moreover, economic stagnation and insufficient financing of public provision have seriously constrained its quality (Table 6).

Public training provision often tends to be weak, irrelevant, ineffective, and inefficient. Formal TVET systems focus almost exclusively on the wage economy and often provide the wrong skills for the available employment. Outdated, centrally driven examinations reinforce the isolation from labor market requirements. Budget cuts have led to severe decapitalization in public training systems, which have had disastrous consequences on quality. High cost structures in TVET contribute to widespread inefficiencies. Management often pays no attention to costs and markets.

“Public VET [vocational education and training] systems reflect industry’s historical traditions of training, and a division of labor between the state and the private sector. Where the private sector has a strong commitment to

**Table 6: Strengths and Weaknesses of Public Training**

Strengths	Weaknesses
Stand-alone vocational training centers not regarded as part of the formal education system, giving them an advantage.	Focuses almost exclusively on the wage economy.
High demand for postsecondary technical education, e.g., polytechnics, in some countries.	Often not well linked to the employment market.
Public systems tend to be more evenly spread geographically in the country than private training, providing an equity advantage.	Tendency to inertia—because of isolation from the market and the long chain of command from the center to training institutions.
Staff, as members of the public service, tend to have job security.	Limited budgets lead to outdated equipment, infrequent repairs, and lack of consumable supplies—possible decapitalization.
	Staff often poorly motivated and poorly paid.
	Tendency for inefficient use of resources, such as low trainee-staff ratios.
	In short, typically lacking accountability for costs and results.

Source: Study team.

training, public VET systems have played a crucial role in off-the-job training. Where employers have long preferred to acquire trainees through systems of selecting from unskilled and even casual labor (as in South Asia), formal VET provision has been widely seen as irrelevant to industry. As with school-based technical education, VET systems are much more in demand when economies are growing, and there are enabling industry and technology policies” (DFID 2007: 6).

The key question is how to reform public training systems to make them more market responsive and effective. The key design questions are how to change incentives and accountability for results. The management and financial reforms described in the previous chapter are the principal vehicles for reform. The principal constraints on reform are not usually the economics or technical aspects of management. Rather the constraints are political—the ability of a given government office to compel others to enact reforms.

Is the solution to privatize public training? In some cases, that may be appropriate. But public training has a vital role to play in areas where the state has a comparative advantage. Some public training is also needed in strategic skills to provide a model for private training as well as a venue for experimentation and reform. Still, inefficient public training systems cannot be allowed to continue

wasting money on expensive training for obsolete, unmarketable skills. Public training should be made to respond to market incentives, e.g., by payment for results.

## Nongovernment Training Provision

Essentially there are two types of nongovernment training provision: not-for-profit and for profit. The first is termed NGO-sponsored training here, and the latter private training. Table 7 presents the strengths and weaknesses of both.

Private training providers work mostly in urban areas in less costly types of skills. First, government needs to regulate private training to minimize fraud, but it

**Table 7: Strengths and Weaknesses of Nongovernment Training**

Strengths	Weaknesses
Can extend access to skills acquisition by people without government subsidies, reducing pressure on public spending for skills development.	Wider range of quality than in public provision—at lower end many unregistered and unregulated providers are of dubious quality, wasting private spending.
Often more in tune with the labor market than public institutions, because private institutions can be unprofitable or go out of business if the market considers their products irrelevant or of low quality.	Inequity—fees often prevent enrollment by lower income groups.
May be able to start new training programs more quickly than government providers.	Private training tends to concentrate narrowly on low-cost courses such as business, accounting, languages, IT.
NGO institutions may provide training in higher cost occupations such as carpentry, auto mechanics, metalwork.	Obstacles to sustainability, or scaling up NGO initiatives (because initiatives depend on NGO leadership and staff commitment, which are not easily replicable).
NGO programs often target those not reached by public or private for-profit training providers (e.g., the poor in urban slums or rural areas, refugees, people with HIV/AIDS, those with special needs) (DFID 2007: 8).	Lack of information and choice—range of choices not well known to the public.
Useful to test innovations.	
At the top end, quality of private provision tends to be better than government provision in many countries.	

HIV/AIDS = human immunodeficiency virus/acquired immunodeficiency syndrome, IT = information technology, NGO = nongovernment organization.

Source: Study team.

should do so without erecting needless barriers to entry or expansion. Where such barriers exist, government should eliminate or reduce them. The right balance must be struck between regulation and control. Too much control can stifle initiative. Governments typically underestimate the staff and other costs required to monitor and regulate private training. Second, government should define, require, and monitor quality assurance for private training. Quality varies more widely in private training than in the public sector. Government intervention is also needed to counter the market failure of information by providing better statistics on the size and scope of private training, its costs, and especially the performance of schools.

Direct assistance should also be considered to establish a “level playing field” between public and private providers. Government can help raise quality by setting standards and assisting private for-profit training providers to meet the standards through the following interventions:

- developing associations of such providers; and
- giving direct assistance for development of instructional programs and materials, instructor and managerial training, and provision of equipment on a competitive basis.

Subsidies to private training can be justified if they finance efficient institutions, “save” public funds that otherwise would be spent, serve priority low-income target groups, meet quality standards, and provide employable skills. However, extensive subsidies that stifle initiative and innovation should be avoided. It is often easy to design cooperation between the public and private sectors, but difficult to make it work. Often it is difficult to get governments to share funds and markets with the private sector. Government officials may tend to view such sharing as a loss of power.

## Enterprise-based Training (for the Modern Economy)

Table 8 lists the strengths and weakness of EBT.

Policies that encourage enterprises to increase on-the-job training differ according to the various types of enterprise. Interfirm alliances of enterprises along global value chains related to multinational enterprises offer opportunities for economies of scale in skills development, for example by reducing the costs of training for individual firms through the sharing of costs between allied enterprises. A lead firm in a value chain sets the standards for skills development; develops the curriculum and training materials; and, in some cases, provides the facilities and personnel to deliver the training. This arrangement can provide high-quality workplace training linked to the requirements of production. Workforce skills also support the emergence of clusters—groups of enterprises that gain performance advantages through their

**Table 8: Strengths and Weaknesses of Enterprise-based Training**

Strengths	Weaknesses
Self-supporting—does not require government subsidies or administration.	Enterprises tend to undertrain because of fear of poaching.
Almost by definition, tends to be practical and closely linked to enterprise requirements.	Training in enterprises tends to be selective: firms investing in training for workers tend to be larger, foreign owned, and more likely to export; workers selected for training by enterprises tend to be from white collar and skilled occupations and to have higher levels of education.
Expands access to skills development to people without opportunity to attend formal training courses.	Small and medium-sized enterprises cannot afford the time or money for organized training of their staff; EBT applies mostly to larger enterprises.
Can be delivered in less time.	
Allows for continuous learning and adaptation to new technologies.	
Because they may be able to extract benefits from general skills training when labor markets are imperfect, firms will invest in both general and firm-specific skills (Acemoglu and Pischke 1999 in Johanson and Adams 2004: 111).	
Targeted EBT has been crucial to raising the skills of the workforce, along with phased industrialization (e.g., in Japan, Republic of Korea, and Singapore (DFID 2007: 9).	
There is widespread evidence of firms' willingness to invest in EBT, particularly in East Asia.	

EBT = enterprise-based training.

Source: Study team.

proximity. Specialized competencies are developed both within and between firms, offering a competitive advantage for the firms within the cluster (ILO 2008b: x).

Firms following a high-performance workplace (HPW) strategy place particular emphasis on skills development. Training and skills are integral components of an HPW strategy and complement other elements such as the organization of work and the sharing of the benefits of improved productivity, worker participation, and dialogue (ILO 2008b: x, xi).

Small and medium-sized enterprises constitute the majority of establishments in both developed and developing countries. They face special challenges in

gaining access to training services and developing the technical and managerial capabilities needed for growth. The main issues include the following:

- Productivity, incomes, and working conditions tend to deteriorate as the size of the enterprise decreases.
- Small enterprises have specific skill development needs. Their owners often need training in an array of entrepreneurial skills. They cannot afford specialists (e.g., in marketing or accounting), so workers need to be multiskilled.
- Small enterprises face many constraints in training entrepreneurs and workers. They often cannot meet the costs of training. They lose time and may face disruption in enterprise operations if workers attend training courses. Courses that they may need might not exist or be poorly adapted to their needs. A survey of 10 clusters in northern India indicated that lack of knowledge about training opportunities, rather than the cost of training, had prevented workers from upgrading their skills (ILO 2008b: 71).

Malaysia and Singapore address the low participation of small enterprises through levy-grant funds. They subsidize training needs assessments, pre-approve training courses without costly application and justification, and facilitate the use by small firms of excess training capacity in large enterprises. Singapore offers training vouchers to enterprises with fewer than 50 employees to pay training costs. The vouchers help the Singapore Skills Development Fund to reach two-thirds of enterprises with 10–49 workers (Hirosato 1997).

## Training for the Informal Economy, Including Traditional Apprenticeship

A skills gap also exists in the informal sector. Informal sector workers and enterprises often lack the knowledge and skills to analyze the market, estimate and record the cost of inputs, produce efficiently, assure quality, manage employees, and market goods and services. Filling the huge skills gap in the informal sector should be a priority in low-income and some middle-income countries.

The informal sector will continue to absorb the vast majority of new entrants to the workforce in many countries of the region (Central Asia, South Asia, the Pacific, and several countries in East Asia). Skills are essential in the informal sector to raise productivity and incomes. Training for the informal sector is different from training for wage employment and must include business skills such as market analysis, pricing, and sales. Most skills training at present is oriented toward wage employment and is therefore not appropriate for the informal sector. A major shift is needed in training supply for the informal sector. Training alone is not a sufficient condition to improve productivity,

incomes, and livelihoods in the informal sector. Training enables other inputs such as microfinance to be used effectively.

Design issues in training for work in the informal sector are as follows:

- An important role for government is to facilitate the development of training markets for the informal sector. One way to expand skills development for the informal sector would be to reorient existing training institutions. However, such basic reengineering has proved difficult, because institutional staff have had little incentive to change. Another approach could be to stimulate a supply response by independent trainers, for example master craftspeople, through financial incentives.
- Scaled-up externally assisted projects have demonstrated that informal sector enterprises can be upgraded by targeting skills development to increase growth, innovation, and productivity. But a question remains about how such skills can be provided on a large scale. In particular, financial sustainability has proved elusive in informal sector training. Cost recovery can be only minimal, or deferred.
- Training is the minor part of the equation. The following non-training aspects are key to success:
  - Start with market analysis. In the case of the informal sector this means feasibility studies on income-earning possibilities.
  - Link graduates with follow-up business advice and credit services.
  - Conduct regular tracer studies to identify occupations in saturation and those in demand.

Traditional apprenticeship is the dominant form of skills acquisition in the informal economy in many DMCs, particularly in South Asia, and is becoming increasingly so in Central Asia. Traditional apprenticeship is skills development provided to young people by a master craftsman, i.e., EBT in informal economy enterprises (Table 9).

Strategies to improve traditional apprenticeship include the following:

- Improve the image of apprenticeship training.
- Start with market surveys: determine what trades and skills have market potential, what skills are in demand, and what complementary support is needed.
- Assist the poor in financing their apprenticeship training.
- Upgrade the skills of master craftsmen.
- Link apprenticeship with specialized training providers through facilitators and vouchers.
- Build informal sector associations.
- Introduce supplementary training for apprentices—apprentices need theoretical training to grasp the basics of the trade such as measuring, calculating, reading of drawings; and expanded technical training, e.g., on equipment unavailable in their workshops.

**Table 9: Strengths and Weaknesses of Traditional Apprenticeship**

Strengths	Weaknesses
Self-regulating: works without government support, regulation, and control.	Lack of supervision can permit exploitation of cheap labor.
A substantial source of skills development in many Asian countries, especially in South Asia.	Gender bias—more common in male-dominated trades; less access for women and girls.
Easy access for boys from an early age.	No systematic training program with specified content and materials—can lead to haphazard and incomplete skills acquisition.
Self-financing: no cost to state or communities; costs are borne by apprentices and their families.	Often static content, no dynamic introduction of new product designs; traditional technologies perpetuated; may be more suitable for traditional skills.
No need for special training centers and separate training tools or equipment.	Quality varies greatly—outcomes depend on workshop owner’s abilities and interest.
Generally cost effective.	Lack of standards and competency assessment procedures.
Content is practical—rooted in the world of work; well adapted to conditions in the real world.	Trainees can enter often without the formal educational qualifications required for public vocational training; tends to be accessible only to rural populations and the urban poor.
Technical skills, business skills, customer service, and work attitudes are often integrated.	Post-training requirements are typically lacking, such as credit, market access, security of tenure, and business counseling.
Allows building of informal sector business network.	Lack of recognized certification, which limits portability of skills.
Often results in employment in the same workshop.	Poorer families are excluded if up-front payments are required.

Sources: Johanson and Adams 2004: 133–134; and DFID 2007: 7–8.

- Evaluate and certify the skills obtained.
- Arrange for post-training support: marketing skills, access to credit, business advice (Johanson and Adams 2004: 145–147).

In summary, it is easy to waste resources on informal sector training. Therefore it is vital to place such training where the chances for success are greatest. The following will help:

- Rigorous evaluation of existing programs is the first requirement to be able to support what works at reasonable cost.

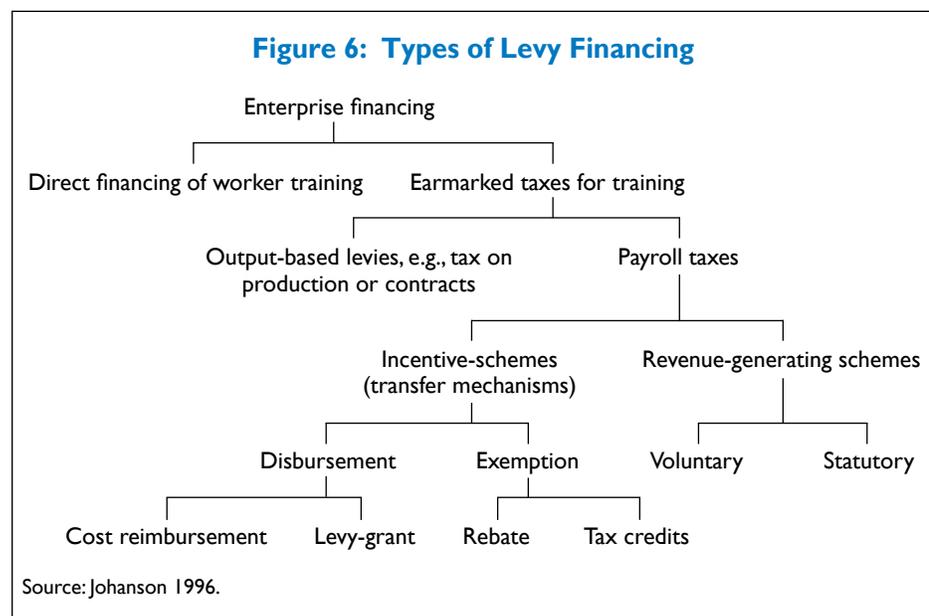
- The most effective strategies to provide informal sector training target productive sectors to maximize value added, specifically agriculture, manufacturing, and services—not commerce or trading.
- Training those already in employment seems to have a greater chance for success than pre-employment training for unemployed youth.
- In traditional apprenticeship, targeting master craftspeople and giving them business and pedagogical skills may be a preferable approach to direct training of apprentices.
- Finally, working through an informal sector association could become an effective avenue for provision of training services to group members.

## Training Levies

Enterprises are often reluctant to invest in upgrading the skills of their workers for fear of poaching—the “free-rider” problem in which a nontraining firm (one that saves the costs of training) can afford to pay more for workers who have been upgraded by another firm. The “training firm” loses its investment in the worker when he or she leaves.

Training levies are a popular means of financing training and compensating for the market failures inherent in the free-rider problem. Figure 6 depicts the various types of levy-financed training funds.

Payroll training levies are basically of two types: revenue-generating levies and incentive schemes. Incentive schemes, in turn, are made up of three types:



cost reimbursement, levy-grant, and levy exemption or rebate.<sup>11</sup> However, distinctions among these types of training levies should not be pushed too far. Few pure models exist, and they tend to change over time. For example, training levies that started as purely revenue-generating schemes have become mixed with the inclusion of elements of levy grant or rebate. Also, funds tend toward multiple uses. (For a more extensive treatment of levies, see Gaskov 1994, ADB 1997, and Ziderman 2003.)

The great potential of levy schemes for expanding the tax base for training explains the wide dissemination of training levies. (UNEVOC 1996). A recent review identified about 60 countries that have—or had—levy schemes for training (Johanson 2009). Most schemes are found in Latin America, Africa, and Europe. Current schemes in East Asia include Fiji (Training and Productivity Authority of Fiji), Malaysia (Human Resource Development Fund), and Singapore (Skills Development Fund). No levy financing scheme was identified in South or Central Asia.

Training levies are not restricted to larger countries. They operate in countries with relatively small populations—e.g., Fiji, Marshall Islands. However, levy success depends on a sufficiently wide economic base in the formal sector and reasonable administrative capacity. These schemes are more effective in countries with a large formal sector, i.e., a large tax base. They are less effective in countries with highly informal economies. Therefore, training levies tend to apply almost exclusively in middle- and upper-income countries, where these two essential conditions exist, not in low-income countries (Dar et al. 2003, Ziderman 2003).

Sector, or industry-specific, training funds are an alternative to national (centralized) funding models. Sector levies are limited to a defined sector of the economy, such as industry or transport. A national system of sector funds offers the advantages of flexibility and the ability to focus more directly on sector training needs. They may be more palatable to employers because of a sense of greater industry-specific orientation, less bureaucracy, and greater sense of ownership. However, they do not facilitate redistributing funds across sectors or financing nonsector-related skill priorities. Sector funds may duplicate efforts and fail to develop common core skills, transferable across industries.

Earmarked payroll levies can be viewed as “benefit taxation,” i.e., those that benefit (employers and workers) pay for the training. Levies can provide a steady and protected source of funding for training, particularly in the context of unstable public budgets. However, under fiscal pressure, government may divert levy proceeds into general public tax revenues for non-training uses. Payroll

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<sup>11</sup> Tax credits are another form of incentive, but are not used frequently in developing countries, and are not discussed in this report. They require mature or maturing economies to work successfully. They have been tried unsuccessfully in Brazil and Mauritius. Chile is the main example of a country using tax credits at present.

levies may constitute an over-sheltered source of funding, leading to unspent surpluses, inefficiencies, and top-heavy bureaucracies (Table 10).

Table 11 highlights the advantages and limitations of enterprise incentive schemes.

**Table 10: Advantages and Limitations of Levy Systems**

Advantages	Limitations
Earmarked payroll levies can be viewed as “benefit taxation,” i.e., those that benefit (employers and workers) pay for the training.	Earmarked taxation does not conform well with the principles of sound public finance and weakens attempts to unify the national tax system.
Levy systems can augment substantially the resource base for training.	Payroll levies raise the cost of labor to the employer, possibly discouraging employment.
Increased training resources, in turn, can substantially increase the incidence of training.	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.
Levies can provide a steady and protected source of funding for training, particularly in the context of unstable public budgets.	Insecurity of income: Under fiscal pressure, government may divert levy proceeds into general public tax revenues for non-training uses.
Levy-grant systems can encourage firms to intensify their training efforts, increase training capacity, and raise training quality.	Unequal access: many firms, particularly small ones, do not benefit from the scheme; this breeds resentment and opposition, and compromises the status of training levies as “benefit taxation”.
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.	Inefficiency: Payroll levies may constitute an over-sheltered source of funding, leading to unspent surpluses, inefficiencies, and top-heavy bureaucracies.
Levy-financed funds can also help correct imbalances in training access by pooling funds—e.g., for training disadvantaged segments of society, unemployed, and/or those in the informal sector. This redistribution can be termed “cross-subsidization”.	Red tape may erect high barriers for firms to access funds.
Funds with tripartite management can forge cooperation among the social partners and facilitate formulation of appropriate training policies.	

Sources: Ziderman 2003, as summarized in Johanson and Adams 2004; CEDEFOP 2008.

**Table 11: Advantages and Limitations of EBT Incentive Schemes by Type**

Type of Incentive Scheme	Advantages	Limitations
Cost-Reimbursement	<ul style="list-style-type: none"> <li>• Supports industry training initiatives.</li> <li>• Leads to improvement of company training in some countries, e.g., development of training policies, requirement of company training plans, and central advisory guidance on training.</li> </ul>	<ul style="list-style-type: none"> <li>• Imposes high administrative and maintenance costs, which reduce the amounts that can be returned to employers.</li> <li>• Tends to favor routine training instead of new programs.</li> <li>• Deters many enterprises from applying because of bureaucratic requirements and paperwork.</li> <li>• Delays training within enterprises in some cases because of a slow approval process.</li> </ul>
Levy-Grant	<ul style="list-style-type: none"> <li>• Promotes the allocation of resources to priority training programs.</li> <li>• Supports industry-wide training initiatives.</li> <li>• Changes priorities flexibly in accordance with changed circumstances.</li> </ul>	<ul style="list-style-type: none"> <li>• Imposes high administrative costs.</li> <li>• Requires effective management skills and capacities.</li> <li>• Excludes many enterprises paying the levy from funding.</li> </ul>
Levy-Exemption	<ul style="list-style-type: none"> <li>• Keeps financial allocations within enterprises; employers are free to plan, manage their funds, and administer their training.</li> <li>• Economizes on costs—central administration of funds is not required; the national cost of administration is low.</li> <li>• Forges links among employers, schools, and agencies, and stimulates the development of private training markets through the option for training institutions to compete for employer grants (French apprenticeship tax).</li> </ul>	<ul style="list-style-type: none"> <li>• Ineffective spending of the compulsory allocation in some cases.</li> <li>• Cannot support broader sector (or national) training priorities and activities.</li> </ul>

EBT = enterprise-based training.

Sources: Adapted from ADB 1997 and Ziderman 2003.

Design issues concerning levies are as follows:

- **Levy rate.** What rate should be applied? Experience in Latin America and Africa shows that a rate too high may lead to surpluses and lavish bureaucracies. (One lesson, therefore, is to adjust the amount periodically to ensure that the training is neither underfunded nor leads to surpluses.)
- **National vs. sector levies.** A standard, national payroll levy is preferable to a sector levy for the former's greater ability to permit funds to be allocated where training needs are greatest. On the other hand, keeping funds in the sector where they were collected can increase the sense of ownership of training.
- **Sector coverage.** Levy coverage should be as wide as possible across economic sectors and should include public enterprises.
- **Company size.** Very small companies should be exempted, because they tend not to capture the benefits. Small firms and microenterprises are usually excluded. The question is at which size of enterprise to apply the levy.
- **Levy collection.** Use effective agents. Funds must be collected efficiently without costing more in administrative expenses than the levy collects. Integrating the levy collection with collection of taxes or social security contributions often works; separate collection by a training agency usually does not.
- **Security of levy proceeds.** Avoid diversion to other purposes, including treasury confiscation.
- **Employer buy-in.** Extensive consultations with and consensus among employers on the need and benefits are essential before introducing a levy scheme. Enterprises should agree to the levy, which they often see as an additional tax that they will recoup by lowering the wages of workers.
- **Allocation decisions.** What role will employers and workers play in allocating the funds? Allowing employers to have a major say on funds allocation can go a long way to gaining their support for the levy. How can transparency be assured? What share of the fund, if any, should be earmarked for "cross-subsidization," e.g., training for those in the informal sector, or for small enterprises that have not contributed? (Ziderman 2003, as summarized in Johanson and Adams 2004: 153–154).

## Training Funds

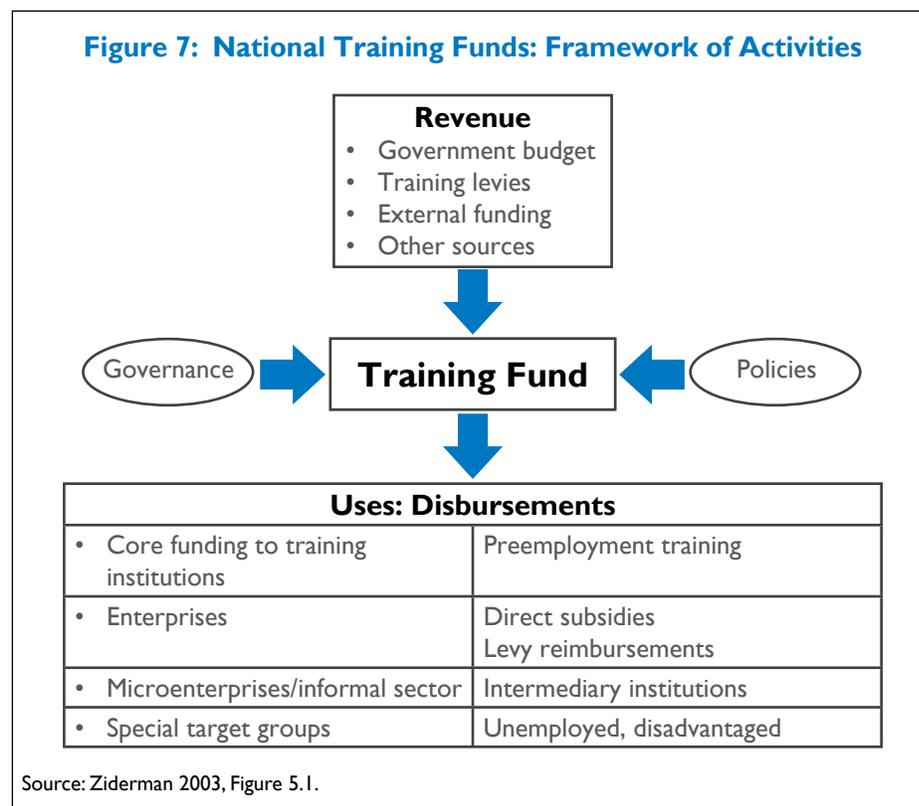
A "training fund" is a dedicated stock or flow of financing outside normal government budgetary channels for the purpose of developing productive skills for work. The overall purpose of training funds is to raise the productivity, competitiveness, and incomes of enterprises and individuals by providing them with needed skills. Many training funds are financed by levies on enterprises, but they may also be based on public contributions and external financing.

National training funds are an increasingly common vehicle for financing training. Training funds are a central instrument for financing training in many countries worldwide. Training funds provide an institutional framework for collecting and allocating funding to training providers.

The functions may differ, but training funds often have the same objectives, coverage, and modus operandi. Figure 7 shows the overall framework for training funds, depicting sources, and uses of funds.

Figure 7 emphasizes both the diversity of sources of financing—including public, private, and external sources—and the diversity of beneficiaries of fund expenditures. The major categories for the destination of funds are sometimes called “funding windows.” A fund may not cover all the purposes. Each of the categories aims at different clients and represents a response to different training needs and policy objectives.

- Core funding for pre-employment training in training institutions constitutes the primary and most traditional use. This pertains mainly to formal sector occupations and employment.
- The second use can be for training of workers in enterprises, through apprenticeships, on-the-job training, or training off the premises. This constitutes the bulk of training provided through training levies.



- Third, training funds may offer services to build the skills and productivity of people working in microenterprises and the informal sector. Given the small scale of such operators, the way to reach them is often through intermediaries, such as informal sector associations. Training for the needs of microenterprises and the informal sector has generally been neglected in traditional training programs.
- Fourth, training funds may open a funding window to train the unemployed or disadvantaged groups. Such training traditionally has been regarded as a government responsibility, but competitive contracting for such training is becoming a preferred mechanism to finance it.

A major question to answer is why it is necessary to establish training funds separate from an account within the government. Training funds promise several advantages compared with financing of training through public ministries. They can

- contribute to resource mobilization from enterprises and funding sources;
- directly involve employers and foster collaboration among stakeholders and social partners;
- relate training supply better to market requirements through active participation by employers;
- enhance quality through accreditation of training providers and insistence on performance conditions;
- induce efficiency in the use of resources through competitive bidding on training contracts; and
- focus attention on neglected segments, such as small and informal enterprises, the unemployed, and women.

Generally national training funds serve to unify various sources of financing for training, augment the volume of resources for training, and allocate the funds in accordance with national policies and priorities. Training funds may be single purpose, but most tend to have multiple objectives. These may include the following:

- Unify and coordinate various sources of revenue, i.e., pooling of income from different sources.
- Mobilize resources and increase revenue available for training.
- Build pre-employment training systems and capacities.
- Expand the volume of employer-based training by encouraging enterprises to invest more in worker training.
- Provide equality of opportunity for access to training services by disadvantaged populations.
- Improve the relevance of training, e.g., allocate funds according to employer priorities and market needs.
- Raise the quality of training, e.g., through accreditation of training providers and specification of performance conditions.

- Use training resources efficiently, e.g., lower the unit costs of training.
- Develop competitive training markets.
- Foster involvement by employers and collaboration among stakeholders.

Three main types of training funds can be differentiated by purpose: pre-employment funds, enterprise funds that finance in-service training of workers, and equity funds that target disadvantaged groups (Table 12).

**Table 12: A Typology of Training Funds**

Type	Main Purpose	Financing Sources
Pre-employment Training Fund	Finance the expansion and delivery of initial training before employment.	Payroll levy—revenue generating.
Enterprise Training Fund	Provide incentives to increase in-service training of workers within enterprises.	Payroll levy—incentive schemes.
Equity Training Fund	Increase opportunities for skills acquisition by disadvantaged groups not covered by enterprise schemes.	Public subsidy, levy, or external financing.

Source: Johanson 2009.

The principal rationale of pre-employment training funds is to reduce shortages of skilled workers by increasing the supply of well-trained individuals in the labor market. The objectives typically are to create an adequate training supply for the needs of employers and create the necessary training capacity to do so. The source of financing is a compulsory revenue-generating payroll levy on formal sector enterprises employing at least a minimum number of employees (usually 5–20). Enterprises paying the levy do not benefit directly in that their workers are usually excluded from the pre-employment training. However, enterprises benefit indirectly in being able to recruit better trained workers in the labor market. The modus operandi is for the payroll levy to finance the establishment and operation of pre-employment training institutions owned and operated by the training agency. Fiji is an example of a pre-employment training fund. Where governed by employers, pre-employment training funds can increase the relevance of training to economic requirements. However, care must be taken to avoid conflicts of interest and crowding out of other providers.

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 type of scheme: cost reimbursement, levy-grant, or levy

exemption (train or pay). The Skills Development Fund in Singapore is a levy-grant system. The Human Resource Development Fund in Malaysia uses both the cost-reimbursement system and levy exemption. Beneficiaries tend to be larger enterprises, and within enterprises, those at higher occupational levels. Small firms tend not to benefit proportionately. Enterprise incentive funds are the most common form of levy scheme worldwide. Rigorous evaluation is generally lacking, but in some cases levy schemes have led to an increase in the volume of training within enterprises. Levy-grant systems, in particular, can allocate resources according to national priorities. However, enterprise incentive schemes require administrative capacity to operate and can discourage enterprise participation because of red tape.

Equity-oriented training funds aim at raising the incomes of disadvantaged groups by providing opportunities to acquire productive skills. They seek to reach people not covered by enterprise training schemes, i.e., those outside employment in the formal sector who do not have the opportunity for in-service upgrading of skills. The objectives of such funds are to train specified target beneficiaries, e.g., unemployed, women, youth, those in the informal sector. They often include subsidiary objectives of stimulating competition and training markets, and reducing unit training costs. Equity-oriented training funds can be financed through government or levy proceeds, but many are financed by international donors. Cambodia and PNG are examples of ADB-financed equity training funds in the Asia region. Coverage is concentrated in low-income countries and disadvantaged segments of middle-income countries. The modus operandi involves disbursements either through predetermined funding windows or applications by training providers. Equity-oriented funds have been successful in reaching disadvantaged people particularly in the informal sector. Some evaluations have found clear impact of training in raising incomes of beneficiaries, but such evaluations are not widely practiced. The most basic challenge for equity-oriented training funds is sustainability after completion of external financing.

Key issues common to all types of funds are degree of stakeholder participation in governance, transparent criteria for allocation of funds, administrative autonomy and capacity, use of competition, how to support small enterprises, and evaluation of outcomes and impact. Concerns specific to levy-financed training funds include whether they are appropriate to the country context, employer buy-in, avoidance of conflicts of interest, degree of cross-subsidization, global vs. sector coverage, the need for periodic revision of levy rates, efficient collection methods, and security of levy proceeds. Concerns specific to equity funds include targeting, allocation windows, eligibility of private providers, quality assurance, accounting and auditing, complementary inputs, and financial sustainability.

Which types of training funds work best under what circumstances (Table 13)? More evaluation is needed to answer this question. Pre-employment training funds (supported by revenue-generation schemes) should be seen as an initial means to establish national training institutions, to be augmented later by

**Table 13: Strengths and Weaknesses of Training Funds**

<b>Strengths</b>	<b>Weaknesses and/or Risks</b>
Can stimulate grassroots (training institutions, enterprises) interest and innovation in upgrading training programs.	Competing interests can lead to spreading funds too thinly so that recipients lack critical mass of financing.
Can benefit a wide range of training providers.	Funds can be hijacked by certain interest groups.
Can finance a wide array of training arrangements and delivery methods (long, short, institution- or enterprise-based); guide can shift when priorities shift.	Beneficiaries may divert funds for non-training purposes.
Mechanism to unify various sources of funding for training.	Sustainability is an issue if financed by external agencies.
Effective in allocating funds in line with national policies and priorities.	Conflicts of interest can occur if those awarding funds are also potential recipients.
Funding organization can serve as a buffer between government and training provision; managers can evaluate the needs and priorities of the labor market largely unfettered by political influence.	May not include sufficient employers in governance.
Can enhance system performance through competition for funds.	Boards are often too big, diffusing power and making them ineffective and indecisive.

Source: Study team.

more cost-effective systems such as employer training incentives. All three types of enterprise training funds require administrative capacity and to an extent impose barriers to access by firms. Cost-reimbursement schemes, in particular, can impose a high administrative burden on the training fund. Levy-grant mechanisms have the advantage of directly addressing national priorities. Levy-exemption may have the disadvantage of a “leveling effect,” i.e., firms that would otherwise have invested more in training tend to reduce their effort to that required by law. Equity training funds may be most appropriate in low-income countries and for disadvantaged segments in middle-income countries, provided financial sustainability can be assured (Johanson 2009).

Training funds need to be designed carefully to address the following questions:

- **Targeting:** How to reach intended beneficiaries? Targeted disadvantaged groups are often dispersed in rural areas and not part of organized production. In particular, employers in the informal sector often do not see the value of training for improving profits. Information campaigns are one means to change this view.

- Governance: Who provides oversight to the fund governing board, and how? What proportion of the governing board will be represented by employers?
- Who decides on the allocation of money to beneficiaries, and based on what criteria? What role will employers play? Their participation is crucial for success. It is advisable to give employers a strong, even majority, voice in allocations to ensure relevance.
- Will funds be allocated to predetermined quotas for funding “windows,” or open ended in response to applications?
- Will private training institutions be eligible to receive funds—both nonprofit and for-profit? If so, on what terms?
- How will quality be ensured in the delivery of training?
- How will the use of funds be accounted for and audited in specific subprojects?
- Evaluation of results of subprojects financed by the fund is essential, but this is often ignored. How will multiple subproject outcomes be assessed?
- Sustainability: How will the funds be replenished?

Key conditions for training fund success are:

- security of income—ensure adequate, sustainable, and stable volume of training fund income;
- autonomy and control—secure decision-making autonomy of management board and its control over budget allocations;
- stakeholder ownership—substantial representation of major stakeholders in governance, particularly employer groups; this is perhaps the most important requirement for success;
- activities and disbursements for training purposes only—avoidance of extraneous activities;
- avoidance of training provider role by those making decisions on fund allocation, i.e., avoidance of conflicts of interests; and
- decision-making transparency (Ziderman 2003: 81, in Johanson and Adams 2004: 166).

# Summing Up: Key Lessons and Their Application

The following set of lessons and examples of good (and weak) practice summarizes the main points drawn from experience and the following sources: the 1999 ADB review of TVET projects,<sup>12</sup> the 2004 ADB review that covered six projects,<sup>13</sup> the ADB 2008 strategic study in the education sector (ADB 2008a), and a review of six new TVET projects approved from 2005 to the present.<sup>14</sup>

## Linkage with Employment Is the Single Most Important Factor in Training Success

Linkages with the labor market and industry can be forged by providing

- incentives for employers to participate in directing, advising, and evaluating training; and
- incentives for managers of training institutions to involve industry in training provision.

Employer advisory councils frequently fail, particularly at the institutional level, because

- business people do not have the time or incentive to participate, and/or
- representatives of employer associations may be bureaucrats and isolated from enterprise developments.

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<sup>12</sup> Loan No. 599-NEP(SF): Science Education Project, Loan No. 699-BAN(SF): Secondary Science Education Sector Project, and Loan No. 759-PAK(SF): Science Education for Secondary Schools Sector Project.

<sup>13</sup> Loan No. 1707-SRI: Skills Development (1999), Loan No. 1791-RMI: Skills Training and Vocational Education, Loan No. 2028-MLD: Employment Skills Training, Loan No. 2111-NEP: Skills for Employment Project, Loan No. 2135-PAK: Restructuring of Technical Education and Vocational Training System (NWFP), and Grant No. 3632 PNG: Employment-Oriented Skills Development.

<sup>14</sup> Loan No. 1655-VIE: Vocational and Technical Education, Loan No. 1830-BHU: Basic Skills Development; Loan No. 2197-SRI: Technical Education Development (2005), Grant No. 0074 KGZ: Vocational Education and Skills Training Project; Loan No. 2416-INO: Vocational Education Strengthening Project; and Loan No. 2425-BAN: Skills Development.

The key is to analyze incentives and opportunity for employers and managers of training institutions to consult. Do employers have authority to make decisions? Is it feasible (in terms of the opportunity cost of their time) for them to participate?

Examples are as follows (see footnotes 12–14 for loan numbers and titles):

- Viet Nam—advisory committees established at each project school;
- Bhutan—established an industry liaison unit;
- Maldives—established employment sector councils;
- Kyrgyz Republic—established advisory boards for primary vocational schools;
- Indonesia—strengthened school-industry linkages through formal partnership agreements; assessors from local industry paid to assess students completing competency-based modules; school managers trained in business management practices involving closer links with the private sector; and
- Bangladesh—planned establishment of three sector working committees plus, for the informal sector, establishment of forum of skill development partners.

## **Labor Market Analysis and Graduate Destination Surveys Are Essential for Proper Direction and Feedback**

However, developing information on market needs and feedback is no simple matter. Labor market information systems (LMISs) are a good idea in theory but rarely work in practice. Several reasons account for this: unclear purpose, difficulties in collaborating across bureaucratic lines for sharing information, problems in recruiting trained analysts, insufficient budgets. Design of investments in LMISs should be preceded by careful analysis of their operational problems and constraints. However, all projects should routinely provide for building local capacity to conduct and use trainee destination (tracer) studies.

Examples are as follows:

- The Kyrgyz project provided a good analysis of the labor market implications for skills demands. Several projects provided for establishment of LMISs, including Bhutan, Cambodia, Nepal, Pakistan, Sri Lanka (1999), and Viet Nam.
- Few projects explicitly called for tracer studies of graduates or building capacity to carry out tracer studies. The exceptions were Bangladesh, Maldives, Marshall Islands, and Nepal.

## Success in Training for the Informal Sector Rests Mainly with Pre- and Post-Training Activities

Training for the informal sector requires several basic conditions for success, only one of which deals with training per se:

- Do informal sector associations of master craftspeople exist that can be used as an intermediary?
- Is sufficient attention given to pre-training market analysis, i.e., identification of occupations likely to generate productive self-employment and income generation?
- Is sufficient entrepreneurship training provided along with technical skills?
- Is there systematic evaluation of the outcomes and impacts of training to identify market saturation as a guide to future training?
- Is adequate post-training support provided, i.e., access to credit, access to marketing services, and continuing business advice (e.g., the India Integrated Rural Development Programme [ADB 2004a: 79]), and is post-training support designed and managed by people with business experience and skills, not civil servants and trainers?

Examples are as follows:

- Marshall Islands—included labor market research and a tracer study on livelihood skills programs; also included provision of basic tools and materials for graduates, and some marketing of products from women's training;
- PNG—includes training needs analysis in preparation of competitive proposals; post-training support is seen as an integral part of training proposals and contracts;
- Nepal—relies on NGOs to undertake training assessments for community-based training;
- Kyrgyz Republic—calls for development of entrepreneurship in primary vocational schools; and
- Indonesia—strengthened entrepreneurship education plus business incubators.

## Private Training Providers Should Be Supported, Starting with Analysis of Regulatory and Other Constraints

“Private TEVT institutions appear to be the more efficient providers. Would it not be cheaper for the Government to meet most of the excess social demand by simply encouraging private sector institutions to increase their share in

the provision of TEVT?” (ADB 1999: 23). PTPs can save public funds that would otherwise have to be spent on providing training places, and often are more efficient in delivering skills. However, the range of quality among PTPs is often wider than in public institutions. This presents a challenge for quality assurance.

ADB background work should analyze the regulatory and other constraints on the establishment and expansion of private training that meets quality standards. Examples are as follows:

- Sri Lanka (1999)—experimented with private management of rural vocational training centers;
- Maldives—good analysis of constraints on PTPs; PTPs are eligible for building training capacity (curricula, management, instructors) and for delivering training financed under the project;
- Nepal—PTPs eligible to compete for contracts to deliver training;
- PNG—exemplary analysis of nongovernment training provision; training delivered by NGOs and for-profit training providers;
- Pakistan—little attention to the role of PTPs;
- Indonesia—provides support to “alliance schools” attached to model schools, half of which are private; but little analysis evident of constraints on PTPs;
- Sri Lanka (2005)—includes a study to assess the regulatory environment of private TEVT provision and recommend actions; and
- Kyrgyz Republic—aims to “develop strategies to stimulate private training provision” are vague.

## Enterprise-based Training Has Been Crucial in Raising Workforce Skills in Industrial Countries

Most training takes place on the job, in either the formal or informal economies. However, given the dispersion, it is difficult to quantify and analyze. Targeted EBT has raised skills in the workforce of advanced countries (Japan, Republic of Korea, and Singapore). Note that

- not many ADB projects have attempted to increase or improve EBT; Sri Lanka (1999) was an exception: it made a serious effort to upgrade training of workers in industry and included a corporate program for in-industry technical training; Indonesia also promoted in-service training for workers; and
- no ADB project so far has supported the introduction or expansion of training levies.

## Reforms in Organization and Management Can Be Instrumental in Raising System Performance

Reforms in organization and management can be undertaken in three areas:

Central training authorities have proved effective in some countries in involving stakeholders (especially employers) in directing TVET and raising system performance. But little ADB support has been evident here. Instead, ADB projects so far typically have provided support to upgrading government bureaucracies for TVET. An exception was ADB's support to the Marshall Islands for upgrading the National Training Council. (In Nepal, ADB supported the National TEVT Council, but it did not have executive authority over policy or direction.)

Devolution and decentralization promise benefits in increasing accountability, mobilizing resources, and linking training with local labor markets. Several design efforts have been made, including the following:

- Sri Lanka (1999)—pilots and financial and managerial autonomy for technical colleges in two provinces; devolved authority to 10 colleges of technology;
- Pakistan—gradual devolution towards autonomy for TEVT institutions, but no analysis of the requirements of devolution in legislation, regulations, provincial policies, redefinition of job descriptions, or new financial accounting systems;
- Sri Lanka (2005)—includes studies to identify which responsibilities can be decentralized; establishment of voluntary National Association of Training Providers, including devolution of authority to it for registration and accreditation of technician training; and
- Indonesia—ADB supports further financial decentralization (funds channeled directly to schools) and strengthening of school financial management.

Leadership produces a difference in performance. Almost all TVET projects provide some form of management systems development and training. Good examples are: Indonesia and Nepal, where there was extensive management training in demand-oriented school business planning; and Kyrgyz Republic, with development of asset management systems and annual school business plans.

## Standards and Methodology Are Critical to Effectiveness

Where reform of training systems is undertaken, the establishment of national qualification frameworks (NQFs) can facilitate labor mobility and more efficient use of training resources. Many projects called for the establishment of national vocational qualification systems, including Bangladesh, Bhutan, Maldives, Nepal, Sri Lanka (1999 and 2005), and Indonesia, which establishes standards linked with international benchmarks.

Competency-based training provides several advantages over time-based training, including greater learning effectiveness and use of time. Its requirements must be analyzed and addressed, including development, teacher training, equipment, and publicity and/or awareness-raising. Virtually all ADB projects have provided for the development of competency-based curricula, but sometimes without sufficient analysis of its feasibility. Good examples are the recent projects for Bangladesh and Maldives.

The difficulty of establishing NQFs and competency-based training is typically underestimated. “There is no firm evidence yet that NQFs work in low or middle income countries.... Some of the NQFs that have developed have been both costly and laborious. Where the institutional capacity of a TVET system is weak, implementing a NQF is difficult.” (DFID 2007: 10; Young 2005).

## Financial Transfer Mechanisms Can Be Powerful Means to Improve System Performance

Strategic use of financial transfer mechanisms (the way that money is allocated to beneficiaries) appears to be within the ability of most DMCs to implement. Four types of transfer mechanisms can be used: training funds, competition, performance-based budgeting, and normative financing.

Training funds allocate financing to different priorities across wide areas, and help to stimulate grass roots interest through preparation of competitive proposals. The use of training funds can encourage flexible reallocation of training resources to high-priority economic activities. Experiences with any previous training funds must be analyzed. Some ADB projects used this mechanism for allocating funds, including the one in Bangladesh, where the project pilots the use of a pool of funds for training delivery; other examples include the projects in Cambodia, Nepal, Pakistan, PNG, and Sri Lanka (1999) (Human Resources Endowment Fund).

Competition for funds, especially if PTPs are allowed to participate, can have a beneficial impact on the quality and cost of services. Examples are projects in Nepal, PNG, and Sri Lanka (1999).

Performance-based budgeting means rewarding institutions for good results. Examples from ADB projects are as follows:

- Pakistan—but there was no apparent analysis of problems with the existing financial system nor of the feasibility of moving to a new system;
- Sri Lanka (1999)—proposed performance-based contracting and private management of public vocational training centers; and
- Sri Lanka (2005)—also includes a move to an incentive-based budgeting system (planned output-based budgeting for colleges of technology).

Normative financing<sup>15</sup> is another transfer mechanism that can be used to realize efficiencies and better use of resources. ADB-supported projects so far have not included this design aspect.

A good example of performance-based funding can be found in recent reforms in Australia. As part of wider reforms, Australian authorities have used funding as a means to sharpen performance of training providers. A “purchaser-provider model” is used whereby the public sector signs a performance agreement stipulating parameters and standards for the required training. A financial reconciliation is made after the training, and sanctions (e.g., immediate return of the funds) are applied for under delivery in quantity or quality. This reform implants greater accountability in the training process (ADB 2008a).

## Sustainability of TVET Programs Is the Most Critical Issue after Linkages with Employment

Good examples are as follows:

- PNG—considerable thought was given to making the training fund sustainable by mobilizing additional resources from government and nongovernment sources, and by limiting the annual outlay to 10% of the fund’s capital plus returns on investment;
- Sri Lanka (2005)—includes a study on financial sustainability mechanisms, including generating resources from industrial partnerships; and
- Indonesia—increases income generation through enhanced production units.

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<sup>15</sup> Normative or formula financing transfers funds from the provider to the recipient according to preset criteria. The norm may be the average recurrent cost per student for the type of training provided. A formula could include a per-student allowance for a variety of things—board and lodging, equipment, training within enterprises, or staff research. The norm or formula is then multiplied by the number of students enrolled to yield a total budget. The budget is then typically delivered to the institution in a lump sum (rather than as line items), giving the institution additional flexibility in spending according to its priorities.

However, inadequate analysis of sustainability was evident in some cases:

- Maldives and Sri Lanka (completion of a study on financing), Nepal (policy developed on sustainable financing), Pakistan (only a loan covenant); and
- Bangladesh—no analysis of requirements for sustainability of project interventions.

## **In the Final Analysis, the Keys to Successful Execution of Reforms and Projects Are Incentives and Political Will**

Change and responsiveness are a function of the incentive structures. A key issue is what those in charge (in system management or in the training center) gain or lose. In the majority of cases, inertia carries a prize, and change brings trouble to whoever promotes it. Therefore, getting the incentives right is fundamental to reform and to the execution of investments. Moreover, political will to reform is probably the single most important ingredient in the success of reforms and projects. This is typically inadequately analyzed and assured in TVET investments.

## Appendix

# Criteria for Evaluating Proposed TVET Investments

This appendix presents a process for evaluating proposed investments in skills development.

The following checklist aims to guide Asian Development Bank staff in assessing project preparatory technical assistance results concerning investments in technical and vocational education and training (TVET) programs and projects, and in the fact-finding and appraisal process. Essentially, the assessment needs only to answer three questions:

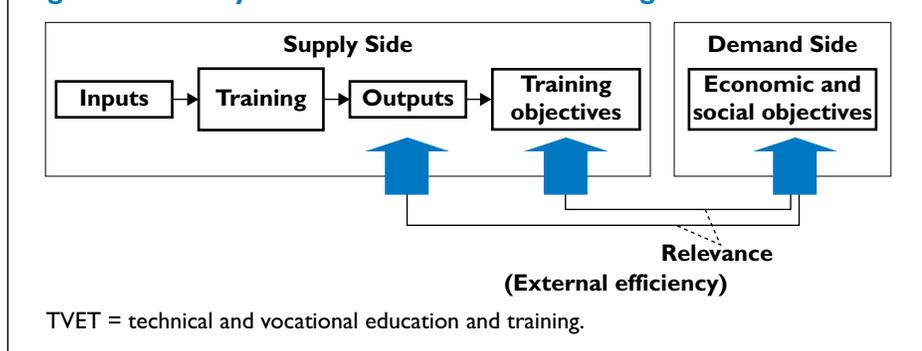
- **Relevance:** Should it be done? Is the investment related to national economic and social priorities?
- **Feasibility:** Can it be done?
- **Efficiency:** Can it be done at reasonable cost?

The questions should be considered in sequence. If a proposed investment is not relevant to priority economic and social objectives, it matters little whether it is feasible or efficient. If it is not feasible, it does not matter whether it would use resources efficiently.

Each major question can be answered conclusively only after consideration of subordinate questions, illustrative lists of which are presented in the six tables in this appendix.

## Relevance—Relationship of the Investment to Priority Economic and Social Requirements

Within the framework shown in Figure A1, the basic questions pertaining to relevance are: Should this project be done? Is it a priority? Would it help achieve goals of overriding importance? The goals and objectives of projects must be relevant to identified strategies and priorities. Investments receiving preference would be those that promise the most direct and useful results in meeting the needs of human resource development in the country. Specific criteria within the area of relevance include analysis of skills surpluses and deficits and fostering close linkages with the labor market. Relevance is considered in two parts: economic (Table A1) and social (Table A2).

**Figure AI: Analytical Framework for Evaluating Relevance in TVET****Table AI: Checklist for Economic Relevance**

Area	Criterion	Check
Supply-demand balance	<ul style="list-style-type: none"> <li>• Have the skills implications of planned growth been analyzed?</li> <li>• Have the binding constraints on skills demand been identified, e.g., poor policies, low skills equilibrium?</li> <li>• Have the binding constraints on training supply been identified, e.g., overregulation of private providers, negative social attitudes, high repetition or dropout?</li> </ul>	
Linkages with the labor market	<ul style="list-style-type: none"> <li>• Would the investment put in place processes for collecting and disseminating critical information about supply and demand of skills, especially trainee destination surveys?</li> <li>• Employer involvement: <ul style="list-style-type: none"> <li>▪ Are sufficient incentives provided for employers to participate in directing and evaluating training?</li> <li>▪ Would the investment project forge close linkages between employers and the training system and/or institutions?</li> <li>▪ Is there evidence that employers have been and will continue to be involved in project operation and evaluation?</li> <li>▪ Is there provision for employer (i.e., customer) feedback as part of the project design?</li> </ul> </li> <li>• Would the investment foster flexible supply responsiveness in training provision, e.g., through short courses, use of instructors on contracts?</li> <li>• In informal sector projects, have necessary pre-training market assessments been done and is post-training support provided?</li> </ul>	
Impact on skills production	<ul style="list-style-type: none"> <li>• Would the investment deliver the most immediate impact on critical skills production, or is the implementation schedule unduly extended?</li> <li>• Would the investment create capacity for continued production of needed skills over the longer term?</li> </ul>	

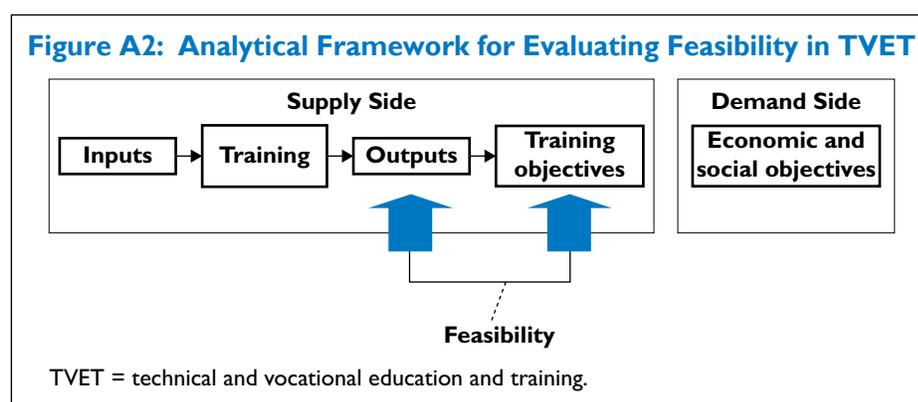
Source: Study team.

**Table A2: Checklist for Social Relevance—Access and Equity**

Area	Criterion	Check
Overall access to skills acquisition	<ul style="list-style-type: none"> <li>To what extent would the investment promote a reasonable “index of opportunity”, i.e., share of school leavers each year who can access skills development?</li> </ul>	
Income	<ul style="list-style-type: none"> <li>To what extent would the investment enable low-income segments of the population to develop skills?</li> <li>Are fee policies and student subsidies equitable between secondary and/or postsecondary and TVET?</li> </ul>	
Location	<ul style="list-style-type: none"> <li>To what extent would the investment enable people in rural or remote areas to develop skills?</li> </ul>	
Gender	<ul style="list-style-type: none"> <li>To what extent would the investment encourage greater gender equity in TVET enrollments, approaching parity?</li> <li>To what extent would the investment channel females out of traditional occupations and into those with good income prospects?</li> </ul>	
Target groups	<ul style="list-style-type: none"> <li>To what extent are priority target groups clearly identified, e.g., initial employment, worker upgrading, vulnerable groups in the informal sector, females, migrants, rural dwellers?</li> <li>To what extent are the particular needs and constraints of the target groups identified, and to what extent is content and delivery adapted to those needs?</li> <li>To what extent would the investment meet the skill needs of those target groups?</li> </ul>	

Source: Study team.

## Feasibility—Relationship of Likely Outputs to Objectives



Even the best concepts are useless unless they can be put into effect. The basic questions concerning feasibility are: Can the project be done? Can it be implemented as intended? Would it be able in fact to achieve its intended outputs? Does the project provide all the necessary inputs? Are these organized into a coherent design? Projects must show the capacity to produce high-impact and high-quality results and must be supported by sufficient resources to achieve these results, i.e., projects must clearly and completely represent sufficient plans and resources to achieve objectives.

Judgments of feasibility can be subdivided into its technical, financial, and administrative aspects. Each of these is discussed below.

### **Technical Feasibility**

Are the overall design and strategy effective ways to achieve the objectives? Would the inputs likely be available in the quantities and qualities required, as and when required? Are there any gaps in the proposed inputs? Table A.3 provides a checklist of the most important considerations.

## **Financial Feasibility**

Financial feasibility means whether the available resources will cover the costs. See Table A4.

**Table A3: Checklist for Technical Feasibility**

<b>Input</b>	<b>Criterion</b>	<b>Check</b>
Overall design	<ul style="list-style-type: none"> <li>To what extent are the project objectives clear and measurable?</li> <li>To what extent is the project design evident and well thought through?</li> <li>Does the design contain carefully articulated activities and sub-activities that are based on best practices in training, curriculum development, and adult learning?</li> <li>Are activities proposed of sufficient scope, duration, and potency to meet the project's goals, and are they articulated in a logical work flow?</li> <li>Is evidence provided that the planned activities are capable of achieving the objectives, such as pilot tests and past evaluations?</li> <li>To what extent does the project use new ways of allocating funds to recipients as means and incentives for better performance?</li> </ul>	
Training strategy and methods	<ul style="list-style-type: none"> <li>Is the project training strategy the best way, under the circumstances, to achieve the training goals?</li> <li>To what extent would the project test, develop, and disseminate effective training methods?</li> </ul>	

*continued on next page*

Table A3 (continued)

Input	Criterion	Check
	<ul style="list-style-type: none"> <li>• Does the project clearly move beyond present outdated training practices and narrow methods?</li> <li>• If competency-based training is proposed, are the staffing, training, and financial requirements adequately covered?</li> <li>• In informal sector projects, is post-training support (e.g., credit, business advice) provided to ensure use of skills?</li> </ul>	
Trainers, instructors, and staffing	<ul style="list-style-type: none"> <li>• Are instructors, trainers, and other staff hired on (short-term) contracts that allow changes of staff as market demands for skills change?</li> <li>• Are the qualifications and credentials of project staff relevant to, and sufficient for, the proposed training activities? If not, are adequate training and mentoring provided to bring staff up to standard?</li> <li>• Are there assurances that identified trainers are in fact able to carry out the proposed training, or that others can be easily located and hired?</li> </ul>	
Curricula and program content	<ul style="list-style-type: none"> <li>• Are occupational and training standards available and used as the basis for training programs? If not, to what extent would they be developed during implementation?</li> <li>• Are the proposed training programs up-to-date, and have they been tested for effectiveness?</li> </ul>	
Instructional materials	<ul style="list-style-type: none"> <li>• Do training and other materials exist that are relevant to the proposed training?</li> <li>• If not, how will they be procured or developed?</li> </ul>	
Qualified trainees	<ul style="list-style-type: none"> <li>• Are enough qualified trainees with sufficient education background and work experience readily available?</li> <li>• Is there sufficient incentive for them to attend and complete the proposed training? Is there sufficient demand for places in proposed training institutions? If not, are measures sufficient to stimulate demand?</li> </ul>	
Physical facilities and equipment	<ul style="list-style-type: none"> <li>• Are adequate, consistent, and up-to-date facilities, space, equipment, and technology available to support the training operations?</li> <li>• Are adequate procedures in place to secure the provided equipment?</li> </ul>	
Anticipation of obstacles	<ul style="list-style-type: none"> <li>• Does the project clearly identify potential obstacles to achieving project objectives, e.g., actual use of the skills in the workplace?</li> <li>• Are adequate measures proposed to address these obstacles and risks?</li> </ul>	

Source: Study team.

**Table A4: Checklist for Financial Feasibility**

Category	Criterion	Check
Cost estimates	<ul style="list-style-type: none"> <li>To what extent have projected investment costs been estimated thoroughly and accurately, with contingencies for unforeseen events and price increases?</li> <li>To what extent have recurrent cost implications been taken into account?</li> </ul>	
Spending processes	<ul style="list-style-type: none"> <li>To what extent are processes in place for proper accounting of expenditures?</li> <li>To what extent do procedures for spending money permit timely availability of funds without unduly delaying execution?</li> </ul>	
Financing	<ul style="list-style-type: none"> <li>Are sufficient funds provided to accomplish the goals?</li> <li>Does the government have the money to pay for cost-sharing requirements, and are the funds likely to be forthcoming on time?</li> <li>Is the government able to pre-finance all reimbursable expenses?</li> <li>Are plans for nongovernment resource mobilization realistic?</li> </ul>	
Sustainability	<ul style="list-style-type: none"> <li>Are there sufficient, reliable sources of money and inputs to sustain the investment beyond completion?</li> <li>Are adequate resources provided to maintain the physical plant and equipment over the medium to long term?</li> </ul>	

Source: Study team.

### ***Organizational, Administrative, and Political Feasibility***

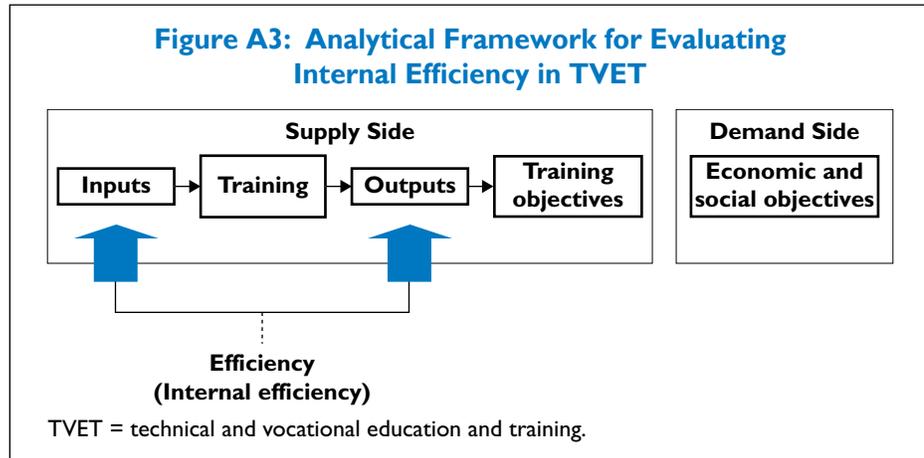
Whether a project can be implemented feasibly is a question of relationship between complexity of design and competency of implementing agencies, processes, and personnel. Capability to implement reforms and investments in training must be an overriding concern. Even more important, constraints often deal with political will. Inadequate understanding of these forces is perhaps the most powerful impediment to the success of investments in TVET (Castro 2009). Some of the key questions are shown in Table A5.

**Table A5: Checklist for Organizational, Administrative, and Political Feasibility**

Category	Criterion	Check
Political will	<ul style="list-style-type: none"> <li>Is there a sufficient configuration of political forces to ensure that policies and reforms can be put in place?</li> </ul>	
Strategy	<ul style="list-style-type: none"> <li>To what extent does the project make strategic organizational reforms in TVET?</li> <li>Does it call for, or strengthen, national training authorities?</li> <li>Does it devolve authority to training institutions within an agreed upon framework of safeguards?</li> <li>Does it provide incentives for management and staff to raise their performance?</li> </ul>	
Functions	<ul style="list-style-type: none"> <li>To what extent are implementation functions clearly spelled out and responsibilities assigned?</li> <li>To what extent does the implementing agent have the ability to carry out the project as intended and produce quality results?</li> </ul>	
Structures	<ul style="list-style-type: none"> <li>To what extent is there a clearly defined management structure for the project with adequate authority to make decisions?</li> </ul>	
Staffing	<ul style="list-style-type: none"> <li>Have the staffing implications of implementation been analyzed satisfactorily?</li> <li>Have the necessary technical and managerial capacity and expertise been assigned in sufficient numbers to carry out the project effectively?</li> <li>Is there sufficient previous project management experience?</li> <li>Are necessary support services (e.g., clerical, accounting, computer) available?</li> <li>Are qualified experts available and willing to work for the proposed rates of remuneration?</li> </ul>	
Processes	<ul style="list-style-type: none"> <li>To what extent have the necessary processes for implementation been thought through, e.g., contracting, procurement?</li> <li>To what extent have necessary tasks and sequences been identified in implementation plans?</li> <li>To what extent are the detailed implementation plans and schedules realistic based on previous experience?</li> </ul>	
Evaluation	<ul style="list-style-type: none"> <li>To what extent are targets clearly identified and quantified with milestones established for their achievement?</li> <li>To what extent has a satisfactory plan been prepared for monitoring and evaluation of the outcomes, and provision made for corrections for deviations during implementation?</li> <li>Does the project evaluation plan provide for the systematic collection and analysis of information to improve project operations and impact continuously?</li> </ul>	

Source: Study team.

## Internal Efficiency—Relationship of Inputs to Outputs



The efficiency criterion involves two alternative questions:

- To what extent would the project produce the intended outputs at least (and reasonable) cost?
- Or, to what extent would the project, given a fixed level of costs, maximize outputs?

The project should produce effective results with the least possible resource expenditure. There should be assurance that the project design plans for reasonable costs and has considered needs for efficiency, such as cost controls, linkages to other institutions that can achieve savings, methods of extending impact, and other means that can assure the greatest possible returns for a given expenditure. Judgments on efficiency should consider the topics in Table A6.

Finally, a risk analysis should be performed. A “pre-mortem” analysis should be conducted on the proposed TVET investment. Before it is approved, a projection should be made looking 5–7 years ahead when the project would be finished, and it should be imagined that it did not succeed fully. What could have gone wrong? What changes could be made now in the content, design, or procedures that would avoid such failures?

**Table A6: Checklist for Internal Efficiency Criteria**

Input	Criterion	Check
<b>Information systems</b>		
Expenditures	<ul style="list-style-type: none"> <li>• Are information systems in place to show the actual costs of training?</li> </ul>	
Accounts	<ul style="list-style-type: none"> <li>• Are appropriate accounting systems and procedures in place to track project expenditures?</li> </ul>	
<b>Least-cost approach</b>		
Unit costs	<ul style="list-style-type: none"> <li>• Are proposed trainee-instructor ratios reasonable?</li> <li>• Have proposed capital and recurrent unit costs (i.e., costs per trainee) been identified accurately? Are they reasonable, and do they conform to standard norms?</li> <li>• To what extent have economies of scale been realized?</li> </ul>	
Utilization rates	<ul style="list-style-type: none"> <li>• Have utilization rates for staff, physical facilities, and equipment been projected?</li> <li>• Are they reasonable and within standard norms?</li> </ul>	
Coordination	<ul style="list-style-type: none"> <li>• To what extent has the project identified and taken into account work already done in this field by others?</li> <li>• To what extent does the project make use of existing training structures and programs (rather than attempting to develop new ones)?</li> <li>• Have alliances and partnerships been formed to avoid duplication and overlap?</li> </ul>	
Overhead	<ul style="list-style-type: none"> <li>• To what extent is the proportion of expenditures on overhead (administration and services) reasonable in relation to expenditures on actual delivery of training?</li> </ul>	
<b>Maximizing results</b>		
Multiplier effects	<ul style="list-style-type: none"> <li>• Is the project designed to maximize the coverage for a given level of expenditure?</li> <li>• Are such interventions as training of trainers, distance learning, and franchising included?</li> </ul>	
Dissemination and leveraging	<ul style="list-style-type: none"> <li>• Does the project design show how the results would be disseminated to wider audiences, if appropriate?</li> </ul>	

Source: Study team.



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# Useful Websites

**European Training Foundation (ETF)**

[www.etf.europa.eu/](http://www.etf.europa.eu/)

**International Labour Organization. Skills and Employability Department (EMP/SKILLS)**

[www.ilo.org/public/english/employment/skills/index.htm](http://www.ilo.org/public/english/employment/skills/index.htm)

**Network for Policy Research Review and Advice on Education and Training (NORRAG)**

[www.norrag.org/](http://www.norrag.org/), and policy briefs:

[www.norrag.org/nonnn\\_article.php?id=32](http://www.norrag.org/nonnn_article.php?id=32)

**International Centre for Technical and Vocational Education and Training (UNEVOC)**

[www.unevoc.unesco.org/snippet.php](http://www.unevoc.unesco.org/snippet.php)

**World Bank website on Vocational Education and Training**

[web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTEDUCATION/0,,contentMDK:20223869~menuPK:624454~pagePK:148956~piPK:216618~theSitePK:282386,00.html](http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTEDUCATION/0,,contentMDK:20223869~menuPK:624454~pagePK:148956~piPK:216618~theSitePK:282386,00.html)

## Good Practice in Technical and Vocational Education Training

Many ADB developing member countries (DMCs) suffer from a shortage of qualified workers. Technical and vocational education and training (TVET) and skills development often provide a slow, inflexible, inadequate, and inefficient response to the needs of labor markets. This good practice guide supports ADB's education sector staff and other planners in their dialogue with governments and other stakeholders of education in the DMCs aimed at analyzing the TVET sector and its directions. The booklet highlights strategic questions and presents investment design issues, including the strengths and weaknesses of different forms of training and financing. It discusses the lessons learned from ADB's experiences in the sector and their implications for future TVET projects. Checklists provide a practical tool for evaluating proposed investments

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