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What Matters for Workforce Development: A Framework and Tool for Analysis



THE WORLD BANK

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Readers are welcome to send comments on the paper to the authors through Jee-Peng Tan at jtan@worldbank.org.

¹ The panels brought together individuals with relevant experience in education and training and in workforce development for discussion with the SABER-WfD team. One panel comprising retired World Bank staff met face-to-face with us on January 20, 2011; its members were: Arvil Van Adams (chair), Birger Fredriksen, John Middleton, Peter Moock, Juan Prawda, Michelle Riboud, Shashi Shrivastava, and Saint William. The other panel is made up of experts around the world who met with us through two staggered video conferences on October 26, 2010; it included the following individuals: David Ablett, Kenneth King, Song Seng Law, Young-Hyun Lee, Wong Fook Low, Peliwe Lolwana, Bianca Rohrbach, and Phillip Toner); and Hernan Araneda, David Ashton, Michael Axmann, Dan Baffour-Awuah, Renato Caporali, Gordon Nixon, Charlene Nunley, and Dan Vogler.

Executive Summary

Equipping the workforce with job-relevant skills is a continuing challenge around the world. In developing and emerging economies, mismatches in skills demand and supply are a persistent concern. Many school leavers and graduates are unable to find jobs commensurate with their education and training while employers complain of difficulty in filling their vacancies. Employers also bemoan the scarcity of “soft skills” which are considered essential for business productivity in today’s global economy. More broadly, skills constraints are making it difficult for companies to innovate and move into more lucrative areas of economic activity. The inability to integrate into and ascend the value chain in global production networks keeps countries in a low-skills trap and impedes their efforts to accelerate economic growth and poverty reduction. The persistence of these problems suggests that workforce development in most low- and middle-income countries is not functioning as well as might be desired.

The World Bank seeks to enhance its support to partner countries in addressing challenges in workforce development, in part through the creation of new analytical tools to inform policy dialogue. This paper elaborates on the analytical framework and practical design of one such tool: the Systems Approach for Better Education Results (SABER) tool for assessing workforce development (WfD) systems. The tool is part of a whole suite of SABER diagnostic tools created following the May 2011 launch of the World Bank’s Education Strategy 2020. These SABER tools share a common purpose: to enable systematic documentation and assessment of the policy and institutional factors that influence the performance of education and training systems. The focus of SABER-WfD is on how well the system is equipping individuals to meet the demand for skills in the labor market.

The SABER-WfD tool places explicit focus on three functional dimensions of WfD policies and institutions: (a) strategy; (b) system oversight; and (c) service delivery. Strategy refers to the alignment between workforce development and a country’s national goals for economic and social development. System oversight refers to the governance arrangements that shape the behaviors key stakeholders involved, including individuals, employers, and training providers. Service delivery refers to arrangements for managing the provision of services in order to achieve results on the ground. The tool’s pilot testing in five countries—Chile, South Korea, Ireland, Singapore, and Uganda—suggest that the three broad functional dimensions are indeed the right ones to focus on in workforce development. As the tool’s application expands beyond the pilot countries, it is hoped that the comparative data thus generated would create a new knowledge asset on promising policies to advance workforce development in the World Bank’s partner countries.

Introduction

This paper presents a diagnostic tool for assessing a country's institutions, policies and praxis for workforce development (WfD). The tool is part of a broader suite of analytical resources associated with a new World Bank initiative called the Systems Approach for Better Education Results (SABER) which covers multiple policy domains, among them WfD (World Bank 2012a).² An experimental version of the SABER-WfD tool was tested in five countries (Chile, Ireland, Singapore, South Korea, and Uganda) and lessons from the pilot phase have helped to improve the tool. The purpose of this paper is to explain the motivation for creating the tool and to offer insights into its analytical and operational design.³

A tool such as SABER-WfD is especially appropriate at this juncture in the World Bank's work. Many of the institution's partner countries have invested in education and training and have made good progress in expanding coverage at all levels. They are also paying more attention to learning outcomes, to the broader array of skills beyond academic achievement, and to technical and vocational education and training.⁴ Yet, a growing pool of better educated and qualified labor has not always produced the expected results. Many countries experience the paradox of having large numbers of graduates that are unable to find jobs commensurate with their education and training (or indeed any job at all) while employers complain of skills shortages and mismatches. These challenges highlight the need for a re-examination of the age-old issue of skills supply and demand. The World Bank's 2013 World Development Report (2013) offers a comprehensive perspective on jobs, including the relation between skills and jobs.

For the purpose of this paper, suffice it to note that rapid technological progress is changing not only the types of jobs available but also their content. Autor et al. (2003), for example, document the role of information and communication technology in shifting the pattern of work in the U.S. in favor of jobs requiring higher order skills at the expense of those needing only repetitive manual skills. The influence of technology on jobs is not limited to advanced countries. By weaving countries more tightly into the global economy, technology is exposing them all to opportunities for new sources of growth as well as to threats to the status quo (Memedovic 2004; Milliron 2007). These trends are part of what Schumpeter (2003) call the process of "creative destruction" which increases the likelihood of economic restructuring as firms push into new areas of businesses with higher returns while abandoning activities for which they are no longer competitive in the global marketplace.⁵

An increasingly inter-connected global economy has implications for all countries. Countries with youthful populations face the daunting task of equipping large numbers of first-time job seekers with the skills needed to make a smooth transition from school to work. To realize their ambition for economic growth and development, these countries must insert their industries into global value chains

² The SABER initiative is elaborated in the next section.

³ The SABER-WfD tool comprises a conceptual framework and an accompanying data collection instrument (DCI) that generates qualitative data for assessing countries' institutions, policies and praxis for workforce development. The DCI is currently in version 2.5 and is available upon request to the authors. Tan et al. (2012) contains an explanation of the pilot version of the analytical framework and data collection instrument.

⁴ One reflection of the increasing focus on learning outcomes is the prevalence of international projects to measure learning outcomes. Examples include Trends in International Mathematics and Science Study (TIMSS), Program for International Student Assessment (PISA), and Programme for the International Assessment of Adult Competencies (PIAAC).

⁵ See Nadvi (2012) for a fascinating account of the pressures of globalization and technological change on the soccer ball manufacturing industry in Pakistan.

and production networks (Memedovic 2004). This means equipping their workforce with the business and technical capabilities required to produce and sell more in global markets (World Bank 2003). In other countries, population aging is the more important problem. As part of reforms to manage the fiscal viability of pension systems, the mandatory retirement age is likely to rise even as economic restructuring increases the prospect of multiple job transitions for incumbent workers. The combination of these factors implies that life-long learning will grow in relevance and importance as working adults seek new or better skills to remain employable throughout their (longer) working lives.

The growing interest in workforce development thus provides an important motivation for the creation of the SABER-WfD tool. The rest of the paper contains six sections. The two sections immediately below elaborate on the purpose and intended audience of this new diagnostic tool; and situate it in relation to other resources for skills-related work at the World Bank. The section that follows clarifies two terms used throughout this paper: workforce development (WfD) and benchmarking. The next four sections present the paper's substantive core: the conceptual framework, key propositions on the link between policies and institutions and outcomes in workforce development, the design of the data collection instrument and the strategy for data collection and analysis. The last section concludes the paper.

Purpose and Audience

As a member of the development community, the World Bank assists partner countries to advance socioeconomic progress, including in the area of workforce development.⁶ Its involvement takes many forms, which for simplicity may be categorized under three broad spheres of activity: knowledge generation, policy dialogue, and operational support. For country-specific engagement, these categories are often combined to provide customized packages of services and financial support. This paper aims to enhance the first two categories of assistance.

To elaborate, the paper presents and explains the design of a new diagnostic tool for systematic collection and analysis of data on key functional dimensions of workforce development policies and institutions. The tool is intended to shed light on an important part of the “black box” that separates tangible inputs from outcomes. It seeks to help bridge the gap between analysis of problems in workforce development—as captured in various indicators of outcomes or performance—and the solutions required for improvement. While the search for solutions has been a staple of policy dialogue, the tool provides all who engage in the process with a more systematic way to assess institutional impediments to better outcomes in workforce development. Furthermore, the tool’s application in multiple countries is expected to culminate in a comparative database of good practices that can be mobilized easily to foster cross-country exchange and learning.⁷

Relation to Other Skills-Related Work

The new tool fills a niche in the broad range of World Bank resources available to enhance its support for workforce development in partner countries. Besides the numerous regional and country-specific

⁶ The World Bank’s partner countries refer to low- and middle-income countries as well as fragile states.

⁷ Lessons from the pilot phase have informed the specification of protocols for data collection and analysis. Adherence to these protocols is helping to enhance the comparability of cross-country qualitative data.

studies, these resources include four major conceptual resources that are noteworthy.⁸ The most recent of these is the World Bank's 2013 World Development Report on Jobs (World Bank 2012b). While the Report addresses broad issues about jobs beyond workforce development, it highlights several key ideas relevant to the concerns of this paper. The Report reiterates the importance of literacy, numeracy, as well as social skills for jobs; it notes that job opportunities increase the demand for education and skills building; it highlights that having a job enables people to learn and build skills; and it draws attention to the fact that the availability of skills can attract jobs, particularly where countries are undergoing rapid urbanization and integration into the global economy.

The second conceptual resource is the World Bank's Skills toward Employability and Productivity (STEP)⁹ framework. Created in 2010, it highlights a holistic model for considering the role of human development in supporting socioeconomic progress. The model encompasses five components: (a) starting right in early childhood; (b) laying a strong foundation in basic and secondary education; (c) building and upgrading job-relevant skills; (d) fostering innovation and entrepreneurship; and (e) matching skills demand and supply. Workforce development focuses on—but is not strictly limited to—the third of these five components.

A third conceptual resource is the 2012 “The Right Skills for the Job?” study which elaborates on the STEP framework. It updates our understanding of the sources of market and government failures in equipping workers with job-relevant skills through initial and continuing education and training, as well as targeted services to vulnerable populations through active labor market programs. The book recognizes that in today's modern economy innovation and entrepreneurship are two critical competences required to boost individual and firm productivity. The important role of market intermediation to match skills demand and supply also receives attention in the book.

Completing the set of conceptual resources now available is the World Bank's Education Strategy 2020 which was published in May 2011 following approval by its Board of Governors.¹⁰ The document reaffirms the institution's mission in the education sector of supporting partner countries to invest in people's knowledge and skills to promote development. To implement the Strategy, the Bank is prioritizing two specific aspects of its work: strengthening systems to deliver better results and building a knowledge base to inform policy and project design. Accordingly, it launched the Systems Approach for Better Education Results (SABER) Initiative to systematize the documentation and analysis of countries' policies and institutions in education and training (Rogers 2013 forthcoming). Workforce development (WfD) is among the policy domains addressed in the SABER Initiative.¹¹

The creation of the SABER-WfD tool is consistent with the growing emphasis on measurement and evidence in the World Bank's work on skills. With regard to measurement, recent studies have pointed to the inadequacy of common indicators such as educational attainment and related details on fields of study, type of training, and so forth (see, for example, Hanushek and Wößmann 2006; Sondergaard and Murthi 2012).¹² These indicators also neglect the “soft” skills valued by employers (see, for example, di

⁸ As of this writing, regional flagship reports on skill-related themes have been completed in five of the World Bank's administrative regions, while the report for the Africa Region is underway as of this writing. See XXX to access these reports.

⁹ For more details on the STEP framework, see World Bank 2010a.

¹⁰ See World Bank (2011) and <http://go.worldbank.org/DTQZ9EKJW0> (accessed on November 9, 2011).

¹¹ See World Bank (2012) and the resources at <http://go.worldbank.org/NK2EK7MKV0> (accessed on November 9, 2011).

¹² While useful, these indicators are insufficient for policy development, given their generally weak link to individuals' labor market outcomes and to countries' rate of economic growth.

Gropello et al. 2010 and 2011) and rewarded by market forces (see, for example, Heckman et al. 2006). To narrow the measurement gap, the World Bank is currently implementing a multi-country project known as the Skills for Employment and Productivity (STEP) Skills Measurement Study.¹³ This survey is expected to add to our understanding of the nature of skills gaps and mismatches and to motivate in-depth policy dialogue. Complementing the STEP Skills Measurement study, the SABER-WfD tool is expected to enhance such dialogue through its systematic documentation and analysis of likely institutional barriers to better outcomes.¹⁴

With regard to strengthening the evidence base of the World Bank's work on skills, the tool bears a more tangential relationship: it seeks merely to document the practice of impact evaluation in a given setting rather than delve into the details of such evaluations. Rigorous impact evaluation is a separate line of work at the World Bank that is now gaining increased attention in light of significant knowledge gaps about what does and does not work in skills development (e.g., Betcherman et al. 2004 and 2007).¹⁵ On a more limited and selective basis, the World Bank also fosters South-South exchanges in order to mobilize evidence from the perspectives of practitioners. These include study visits that enable policy makers in partner countries to gain first-hand exposure to and engage in dialogue and exchange with their peers in other countries.

A Note on Terminology

Workforce development and benchmarking are two terms that are used frequently in this paper. Because they bear different meanings to different people, it is useful to clarify at the outset how we use them in the content of the SABER-WfD project.

Workforce development has attracted growing interest in recent years from a wide range of researchers and policy makers, many of whom are concerned with the implications for skills development associated with five major factors: globalization, technology, the role of knowledge and innovation in the “new economy,” political change, and demographic shifts (Jacobs and Hawley 2008). Although the term raises issues at the level of individuals, organizations, and societies, we use it in this paper to refer to the challenges faced by a national, regional, provincial, or sector-based system in responding to two expectations:

- *Enabling individuals* to acquire the knowledge, practical skills, and attitudes for gainful employment (including self-employment) or improved work performance in a particular trade or occupation; and
- *Providing employers* with an effective means to communicate and meet their demand for skills.¹⁶

¹³ Results from the study are expected in 2013.

¹⁴ Several of the countries (e.g., Laos and Sri Lanka) that are implementing the STEP measurement study are thus also engaged in a parallel study using the SABER-WfD tool.

¹⁵ For more information on ongoing evaluations of skills-related initiatives, see www.worldbank.org/sief (accessed on November 9, 2011).

¹⁶ This dual expectation is shared by the U.S. National Governors Association, which notes that to develop the skilled and knowledgeable workforce required for economic competitiveness in the global economy, “state workforce and education systems are designed to provide the skilled workers employers need to thrive and the education and training individuals need to prosper in today’s labor market.” See <http://www.nga.org/cms/home/nga-center-for-best-practices/center-issues/page-ehsw-issues/page-workforce-development.html> (accessed on August 12, 2012).

With regard to the first expectation, it is clear that job-relevant skills are acquired through diverse pathways: some are established in early childhood education (for example, language skills) and reinforced through subsequent general schooling at the primary and secondary levels (for example, literacy and numeracy); others rely on pre-employment vocational training at the secondary and post-secondary levels; and still others through apprenticeships, on-the-job training via formal and non-formal arrangements, and informal learning. A complete evaluation of workforce development thus requires a comprehensive assessment of the entire education and training system and its effectiveness with regard to the skills of both incumbent workers and the future pipeline of workers. Such a comprehensive assessment is beyond the scope of the SABER-WfD project. Instead we narrow our focus to those parts of the system with an explicit mission of enabling individuals to acquire job-relevant skills, either through initial preparation or continuing education and training. The tool thus places little focus on early childhood education, primary education, and general secondary schooling, even though these are all clearly essential in laying a strong foundation for skills acquisition. To avoid overlap with the SABER tools addressing higher education, SABER-WfD focuses on the segment of the workforce filling mid-level positions (for example, skilled craftsmen, technicians, production supervisors, and so forth). Formal training in the skills associated with such positions typically begins at the secondary or post-secondary non-university levels and can progress up to the tertiary level in some fields.¹⁷

The second expectation of workforce development puts the spotlight on employers as users of skills. As such, their involvement in WfD is essential to ensure a responsive system for skills supply. In a well-functioning WfD system, employers are able to meet their demand for skills and compete successfully in product and service markets while individuals are able to acquire the knowledge and skills to prosper in the labor market. Such a system can help boost economic productivity and growth; creating and maintaining its performance is thus a key concern of policy makers pursuing skills-intensive strategies for economic development.

Benchmarking is another term used in this paper. The concept gained prominence in 1979 in light of what Xerox Corporation did to stem the loss of its photocopier business to Japanese competitors (Camp 1989). The company undertook a systematic assessment of its business practices, in the process identifying ways to improve manufacturing design, boost production efficiency, and lower costs, all of which enabled it to regain its competitive edge. The concept and practice of benchmarking have since become widespread as a well-regarded and versatile tool for evaluating organizational and institutional performance (Dattakumar and Jagadeesh 2003).

Often used as a continuous process for enhancing outcomes, benchmarking now finds wide application in the public and private sectors throughout the developed world.¹⁸ An organization that embarks on benchmarking assesses various aspects of its processes in relation to those of leading organizations, usually from a peer group defined for the purposes at hand. The exercise poses such questions as the following for self-examination: (a) how do we compare to others in the same business; (b) how good do we want to be; (c) who is doing it the best; (d) how do they do it; (e) how can we learn from and adapt what they do to suit our circumstances and needs; and (f) how can we excel and become a standard of

¹⁷ University-level training typically supplies workers with advanced technical and research skills that are essential for fostering the development of knowledge-intensive economic sectors. It is the focus of a separate domain in the SABER project and is therefore examined more fully there.

¹⁸ See, for example, <http://www.well.com/user/benchmar/germany/Germany.html> (accessed on November 9, 2011).

performance for others to aspire to?¹⁹ The process allows an organization to develop plans for adapting specific best practices to improve its own performance.

For our purpose, national or subnational systems of WfD rather than companies are the relevant units of analysis.²⁰ Conceptually, the foregoing questions relating to the benchmarking of companies remain relevant when considering systems of WfD. Many countries are interested in knowing how well their policies, institutions and praxis compare to those in nations with more effective systems for workforce development. To systematize the comparison, we develop performance metrics for key aspects of WfD policies and institutions and define the corresponding stages of development based, whenever possible, on the experiences of nations with successful WfD systems. Where data are scarce, the benchmarks are based on a review of the relevant literature and on the logic of practical progression as a system improves. Finally, it is important to emphasize that the purpose of benchmarking is not to rank countries but to create a common frame of reference for policy discussion and to facilitate self-diagnosis as a basis for improvement.

Conceptual Framework

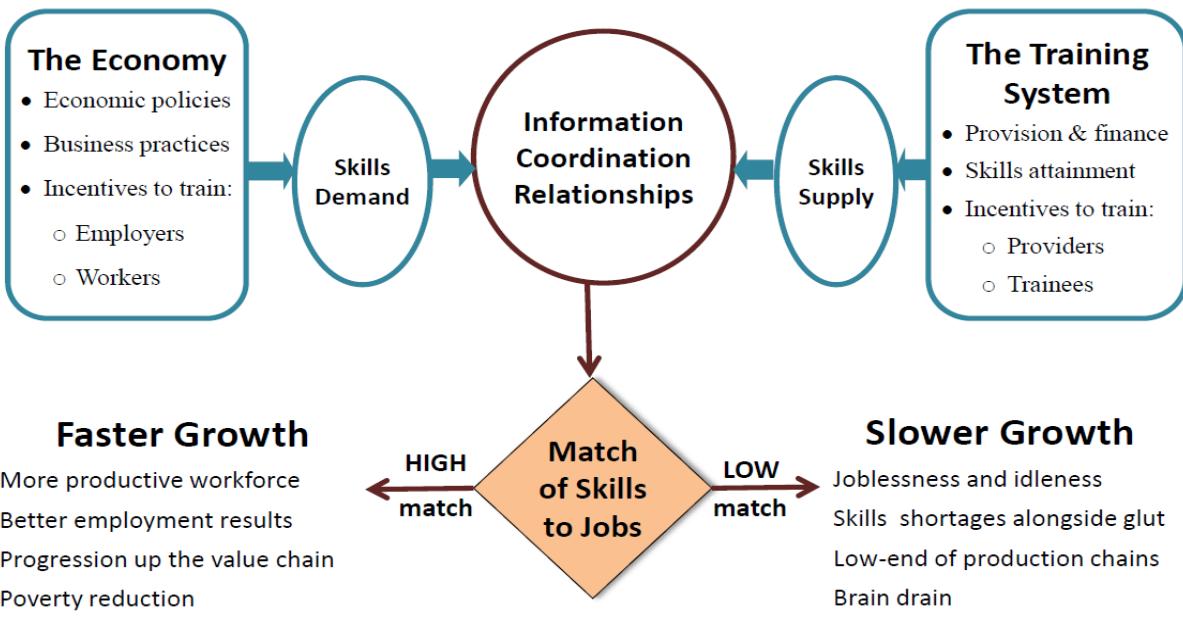
Figure 1 illustrates the key elements of the conceptual framework for the SABER-WfD project.²¹ The framework recognizes that achieving coherence in WfD policies requires a simultaneous consideration of the demand for skills as well as the supply. A well-functioning WfD system with a high degree of coherence between skills demand and supply achieves faster economic growth by: (a) improving trainees' employability; (b) supplying the workers needed by firms to improve productivity, product quality, and competitiveness; and (c) enabling firms and entrepreneurs to expand their technological capability and move up value chains where profit margins are often more attractive. Where this match is poor, slower growth and the associated problems of joblessness and underemployment, brain drain and technological stagnation or laggardness are an ever-present prospect.

¹⁹ Adapted from Alstete (1995).

²⁰ See O'Lawrence (2007) for an application of the benchmarking approach to a system for skills development in the state of California in the United States. Although the approach may be used to evaluate specific programs for skills development (for example, adult worker retraining and re-employment schemes, formal industry-based apprenticeship schemes, or disadvantaged youth employment/training schemes), the SABER-WfD project will focus on national or subnational systems.

²¹ The proposed benchmarking approach complements the World Bank's MILES framework, which is used by some to evaluate employment issues through five lenses: Macroeconomic conditions, Investment climate and infrastructure; Labor market regulation and institutions; Education and skills development; and Social protection, where the capitalized letters are used to form the acronym MILES (see Banerji et al. 2008).

Figure 1: Conceptual Framework for Workforce Development



Source: Authors' construction.

In developed countries, the economic crisis of 2008 and its aftermath have increased the urgency of addressing WfD issues (see, for example, OECD 2010a). In less-developed countries, skills to increase the employability of youth and to help accelerate overall growth also feature regularly in both national and international dialogue (see, for example, World Bank 2010a; World Bank 2012b). Below we elaborate on the main components of the framework relating to skills demand and supply and to the linkages between these two parts of a WfD system.

The demand for skills. The government's economic policies set the overall context for skills demand in multiple ways. Wage policies and related legislation, for example, influence the flexibility of the labor market, the hiring practices of firms, and the aggregate demand for labor and its distribution between formal and informal sectors.²² Tax policies affect firm and worker behavior, including their incentives to train. The spending policies of governments often have a significant impact on skills demand. Large infrastructure investments, for example, create a demand for various construction, engineering, and specialized skills. In some countries, governments also make strategic investments to nurture or grow selected sectors and these may call for new skills beyond what is available in the current labor pool (see, for example, UKCES 2009). In countries where the government takes a proactive approach to economic management, its policies may also affect firms' business strategies and the incentives for innovation and adoption of new technologies. These forces in turn shape the demand for skills that may be required for technology absorption and advancement.

²² In Mexico, for example, Levy (2008) notes that the government requires firms to provide health insurance, pensions, and other social benefits directly to salaried workers, whereas non-salaried workers get these services through government pension and insurance programs. The difference in policy effectively puts a tax on salaried workers but offers a subsidy to their peers in the informal arrangements. Levy estimates that salaried benefits in Mexico are 30–35 percent less than their actual value to workers; and that the gap is sufficiently large to keep workers in low-productivity work in the informal sector, thus slowing overall economic growth.

Forward-looking policies must obviously take into account global trends and practices and evaluate their implications for the local economy. Demographic changes, globalization and technological advances, urbanization, and climate change are some of the key influences on the dynamics of skills demand. The world's population is aging as a result of declining fertility and rising life expectancy.²³ In developed economies, the trend is already translating into a growing demand for health and personal care services and for related skilled workers, often imported from abroad.²⁴ In less-developed economies, the share of youth in the labor force—many of them new entrants and often in the midst of starting their families—is increasing rapidly. They represent both a pool of potential employees and a market for consumer goods and services and the associated demand for skilled workers to produce and sell these products. In most countries, however, the potential has yet to translate into tangible results in the form of jobs and sustainable income growth.

Globalization and technology, particularly in information and communication, are an even more obvious influence on the demand for skills. Firms everywhere face increasing pressures to innovate and diversify into newer and more lucrative markets, as profit margins in traditional industries are squeezed by intense global competition and the shortening of product shelf life. Among the more dynamic firms that compete in export markets, skills bottlenecks are a chronic complaint, even in countries with highly educated workforces.²⁵ Rapid urbanization, a trend that some countries actively promote in order to foster dynamic clusters of economic activity, is also ratcheting up the demand for talent and skilled workers, including service workers to build and maintain lively and livable urban spaces. In some settings, the lure of overseas jobs has fueled the demand for skills, encouraging potential migrants to obtain training to improve their prospects abroad. Climate change is yet another global trend with important implications for skills demand. As countries scale up mitigation or coping responses, they will require workers skilled in a wide range of “green” technologies.

These global trends combine with conditions in a particular sector or a locality to shape the demand for specific skills. In the United States, for example, a 2009 survey of manufacturing businesses found emerging skills shortages in three sectors (aerospace and defense, life sciences and medical devices, and energy and resources) and highlighted bottlenecks for skilled production workers, and for scientists and engineers (DMIO 2009). In Europe, WfD policies are being informed by detailed analyses conducted by the European Center for the Development of Vocational Training for the 27 countries of the European Union.²⁶ In India, the boom in information technology (IT) and IT-enabled services is increasing the demand for technicians—estimated at 500,000 a year—as well as for English language skills (Sudan et al. 2010). One careful study shows that each new call center raises enrollments in English-language schools in the center’s vicinity by nearly six percent (Oster and Millett 2010).

²³ In developed economies, 33 percent of the population in 2050 is projected to be at least 60 years old, compared with just 22 percent in 2010. In developing economies, the corresponding percentages are 20 percent and 9 percent. Africa has the youngest population, but even there, the share of the population 60 years and above is projected to rise from 5 percent in 2010 to 11 percent in 2050 (UN 2009).

²⁴ At the same time, older workers in developed economies are finding it necessary to postpone their retirement and seek new skills in an effort to remain employable and productive. As a result the concept of lifelong learning has gained growing relevance in public policy debates.

²⁵ See, for example, data from the World Bank’s Enterprise Surveys at <http://enterprisesurveys.org>.

²⁶ According to CEDEFOP (2010), projections for 2020 suggest a net loss of some 2.5 million jobs in the primary sector (mainly agriculture) and 2.0 million in traditional manufacturing, balanced against gains of some 7.0 million jobs in business and other services, 3.4 million in distribution, transport, hotels and catering, and 1.0 million in education, health, and other non-marketed services. Demand is expected to rise for highly- or medium-skilled workers, while it will shrink for workers in clerical services, crafts, and related trades and agriculture.

The demand for quality skills. A large number of surveys confirm that employers value not just a worker's ability to perform specific technical tasks, but also his or her possession of "soft" skills or behaviors (Ferrier et al. 2003a; UKCES 2009). In the United States, manufacturers have consistently ranked highly skilled and *flexible* workers as one of two top drivers of performance (the other is new product innovation).²⁷ Employer surveys conducted in 2008 in the Philippines and Indonesia revealed a high demand for three "soft" skills for managers and production staff alike: problem-solving, leadership, and communication skills. In Vietnam, the top behavior prioritized by employers in a 2009 survey was punctuality. The same survey also highlighted that employers valued workers' practical and technical knowledge more highly than theoretical knowledge. A recent survey of Indian employers highlighted deficiencies in the "soft" skills of the graduates from engineering colleges (Blom and Saeki 2011). The importance placed on "soft" skills is not surprising given the nature of work in today's economy.

An increasingly integrated global economy with intense competition, a growing body of scientific and technological knowledge, and widening access to knowledge via digital media are reinforcing the demand for skills that go beyond simple book learning and/or the competence to execute only specific tasks. The ability to solve problems, to learn new skills, and to adapt to new conditions, all of which require a solid foundation in literacy and numeracy, are especially valuable in contexts of rapidly evolving business conditions (Wang 2012).²⁸ These profound changes are transforming today's jobs, increasing the premium on workers that can perform non-routine tasks as a normal part of their jobs (Autor, et al. 2003; Autor 2010; Levy and Murnane 2005). In settings where most school leavers must find their livelihood in the informal sector, having the flexibility, entrepreneurship, and initiative to find sufficiently productive work must also be added to the list of core skills that young people will require for a successful transition from school to work (for example, Adams 2007).

The supply of skills. The technical and vocational education and training (TVET) system is frequently perceived as the main source of workforce skills development.²⁹ While the perception is understandable in light of the government's often significant role in providing TVET, it often does not reflect reality. In many, particularly developing countries, private formal and informal TVET are also major sources of TVET (Janjua and Naveed 2009; King and Palmer 2010). In middle- to high-income nations, and especially in large industrialized nations such as the United States, Germany, and Japan, employer-based training programs are the main suppliers of middle- to higher-level skills training. Because such training activities and programs are fragmented across the sector, typically funded by and often unpublicized outside the firms, their national contribution to WfD is not always well-understood or recognized.

The wide range of sources for skills acquisition creates a complex landscape. The various formal, nonformal, and informal programs may each require different levels of prior educational attainment and may operate under different institutional homes, typically though not exclusively, the ministries of

²⁷ See DMIO 2009.

²⁸ Because of the importance of these cognitive skills, the World Bank recently embarked on the STEP Skills Measurement project, which involves administering tests to individuals aged 15–64 as part of the effort to document the levels and distribution of such skills in the workforce and to relate the possession of these skills to individuals' earnings and employability (among other outcomes).

²⁹ It is useful to note that the acronym TVET represents the first letter of four words with specific meanings: "technical" and "vocational" typically refer, respectively, to technician-level and craftsmen-level programs; "education" refers to exposure to the world of work and preparation for further studies in technical and vocational fields; and "training" refers to preparation for entry into, or upgrading in, specific occupations or clusters of occupations.

education and of labor. While both formal and nonformal TVET refer to structured programs, they often fall under the mandate of different parent ministries. *Formal programs* usually take place in the education system and end with formal certification or qualifications; *nonformal programs* often occur outside the education system (hosted by such ministries as labor, social welfare, industry, and so forth), in or outside the workplace, and may or may not lead to an accredited qualification. Where granted, the qualification may not relate to the certification system hosted by the education ministry. *Informal TVET* comprises unorganized and unstructured learning that is seldom the responsibility of any single agency; it often occurs in the workplace, for example, when a junior worker learns the ropes simply by working alongside or shadowing more experienced colleagues.³⁰ Despite their informality, these arrangements can be a significant source of learning for tacit skills; their prevalence often depends on firms' workplace practices and organizational culture.

To add to the complexity, the system for skills provision may also include such programs as: (a) formal, industry-based apprenticeships, usually for training in advanced skills; (b) training partnerships involving organized labor and firms, often with formal curricula taught by training providers; (c) technical training for and within the military; and (d) special needs training (that is, skills training for select populations, such as prisoners, persons with disabilities, and the disadvantaged).

In all TVET systems, government policies influence to varying degrees the way the system is organized, governed, and financed and how skills attainment is certified and recognized. They therefore affect the efficiency of service provision, the effectiveness of the system in producing quality and relevant skills, and the accessibility of training opportunities, particularly among disadvantaged population groups. They also shape the incentives for both training providers and learners, and influence the aggregate supply of skills and its diversity by level and specialization.

The impact of policies on the role of employers in WfD planning and implementation—at both the strategic and operational levels—warrants close attention. In well-performing systems, policies are in place to improve the responsiveness of training providers by encouraging them to view employers, both public and private, as critical partners whose input and feedback help ensure the continued relevance of training services against evolving labor market conditions. Such systems are demand-led (Middleton et al. 1993; Elkins et al. 2012). It is important to clarify that being demand-led does not always mean that the system is driven by employers alone. For countries trying to move into higher value-added production, politicians' policies regarding the economy's strategic direction also influence the demand for skills. A demand-led system would be sensitive to such demand as well. By contrast, in systems where the relation between training providers and employers is weak, the risk of mismatches in both the quantity and quality skills is ever present. In such *supply-driven* systems, employers that face critical skills gaps may resort to addressing the problem themselves, as in India in such sectors as information technology and communication and pharmaceuticals (as documented, for example, in Tan and Nam 2012).

Alignment of skills supply and demand. A key challenge in all WfD systems is to sustain a good match between skills demand and supply even as conditions in the labor market evolve and alter the demand for skills. Where the match is good, significant benefits can accrue in the form of a dynamic and more productive workforce, higher rates of employment and labor utilization, progress in the fight against poverty and tangible movement up the value chain of economic activity for the economy as a whole

³⁰ Informal TVET refers to a method of training and should not be confused with TVET programs that are intended to equip trainees for jobs in the informal sector of the economy.

(see, for example, Ferrier et al. 2003b; Gereffi et al., 2011). The alternative scenario is that of a weak system delivering a poor match between skills demand and supply. In such systems, the risks include high unemployment and underemployment, often coexisting with chronic skills gaps felt by employers, emigration of skilled workers, and an economy showing few signs of diversifying and upgrading of its technological capabilities.

In reality, skills misalignment is a common problem in most countries. Numerous surveys of employers consistently reveal concerns about skills constraints on business performance and about the lack of certain types of skills among employees (for example, di Gropello et al. 2010 and 2011). These problems stem to a large extent from what economists describe as market and government failures. Below we elaborate on an analytical strategy to benchmark the policies that governments might use to overcome such flaws and enhance outcomes in workforce development.

Linking Policies to System Performance

While we focus on government actions to promote a closer connection between skills demand and supply, this emphasis does not mean that the government is the most important actor among those with a role in WfD. Rather, it is intended to facilitate dialogue on how the government might be more effective, whether acting directly or through the intermediation of other actors, in advancing its goals for workforce development. Below we begin by elaborating on three broad areas where weaknesses in policies and related institutions and praxis might arise; we then state three hypotheses to guide our strategy for data collection and analysis.

Impediments to Better Outcomes

Economic theory about market and government failures identifies several conceptual obstacles to a well-functioning WfD system. In their comprehensive review, Almeida et al. (2012), for example, discuss failures stemming from: (a) imperfections in capital markets which prevent individuals and firms from borrowing for training investments; (b) limited information, uncertainty, and myopia that distort the actions of individuals and firms with regard to training investments; (c) coordination failures arising from weak linkages among key stakeholders (for example, employers and training providers); and (d) labor market imperfections (for example, firms demanding suboptimal levels of training for their workers for fear of losing their trained workers to competitors).

Theoretical considerations alone are insufficient, however, for designing policies to improve the system's performance. Also needed is a deeper understanding of the specific policies and institutions that matter and the circumstances under which they matter. The evidence on this score is, unfortunately, sparse at present, particularly as it pertains to the experience of developing and emerging economies. We can nonetheless begin to contribute to the dialogue by creating and testing a new methodology that documents existing policies and institutions systematically and benchmarks them against practices in systems that have made significant progress over time. This approach is characteristic of the overall SABER initiative. Its application in multiple countries creates a comparative database that can be analyzed to narrow gaps in our knowledge about effective policies and institutions.

Our data collection effort focuses on three areas where we believe market and government flaws are particularly relevant as impediments to better outcomes in workforce development: governance,

finance, and information. We briefly elaborate on them below to set the stage for discussing the design of our data collection instrument.

Governance. Workforce development is a complex policy arena. It involves multiple stakeholders at different levels of decision-making whose goals, roles, and responsibilities may overlap or be in conflict (for example, ADB 2009 and 2010). At least four sets of stakeholders can be discerned: (a) public officials representing different ministries and levels of authority; (b) employers in their role (individually and through their trade associations) as a source of jobs, market intelligence, expertise, and advice to inform the training curricula, and possibly also of gifts and advocacy to support training programs; (c) training providers (again individually and corporately) who offer pre-employment, on-the-job and targeted training and career development services, networking among trainees, and a pool of potential recruits for employers; and (d) individuals who have dual roles, as trainees and as incumbent or future workers (who may be represented through unions), whether working for others or in self-employment. In this complex environment, appropriate governance arrangements can help clarify roles, responsibilities, and accountabilities among the stakeholders and enhance the quality of key relationships among them.

Finance. All WfD systems depend on adequate and well-deployed resources, financial and non-financial, to function effectively. Funding arrangements—how money is mobilized, allocated, and channeled—shape incentives and therefore the decisions made by individuals, training providers, as well as employers and firms in their capacity as trainers and users of skills. Key design choices include: (a) the aggregate level and pattern of distribution in budget allocations; (b) the criteria for deciding on funding allocations, and on recipients' access to and continuation of funding; and (c) diversity in the sources mobilized to support investments in WfD. Funding arrangements can exert an influence through channels on both the demand side and supply side and thus have the potential to help narrow gaps in skills supply and demand. In-kind resources, such as employers' contribution of machinery or staff time for training purposes, are often difficult to document, but their presence is an important indicator of engagement of a key group of stakeholders.

Information. Reliable and timely information provide signals that condition the behaviors of key actors on both the demand and supply sides in the market for skills. Useful information include the following: the skills gaps faced by employers; the menu and quality of training options and their costs; the employment and earnings of the graduates of training programs; the sources and availability of funds for training; and the trustworthiness of the formal certification of skills attained. The availability of such information can help influence the decisions of both individuals and training providers in aligning them to the demand for skills in the labor market. However, if an important economic goal of the country is to grow and upgrade into new and emerging areas of economic activity that require new technological, managerial, and operational capabilities, then passive information flows alone may not suffice to minimize skills gaps and mismatches. In such settings proactive coordination to bring the behaviors of the relevant parties into closer alignment with the areas of emerging skills demand may be appropriate.

Hypotheses on Improving WfD Outcomes

Improving the performance of the WfD system is akin to moving up the rungs of a ladder. For example, four rungs on the ladder corresponding to poor, modest, good, or great outcomes may be characterized as follows:

- Poor outcomes:
 - Few employers value the WfD system; and
 - Interest in hiring graduates from the system is low.

- Modest outcomes:
 - System produces some useful outputs in terms of individuals trained;
 - Trainees and employers are generally dissatisfied; and
 - Access to training is limited and quality of skills imparted is poor.
- Good outcomes:
 - System trains large numbers;
 - Most trainees and employers are satisfied with the system;
 - Some scope exists for continuous learning and skills upgrading; and
 - System lags behind in skills for innovation and technology upgrading.
- Great outcomes:
 - System makes a difference and enjoys employers' and trainees' confidence;
 - Employers participate actively to provide feedback and support;
 - Graduates secure gainful employment;
 - System encourages continuous learning and skills upgrading; and
 - System adapts quickly to new economic conditions and opportunities.

The challenge for policy makers is to situate their WfD system in the continuum of outcomes and to determine a context-appropriate strategy for progressing to the next rung of performance. Their task is arduous, given our current incomplete knowledge about effective institutions, policies, and praxis. An important objective of the SABER-WfD initiative is therefore to help narrow this knowledge gap by accumulating and analyzing the evidence in this regard. To guide our data collection effort and analytical strategy we start with three hypotheses on the links between policies and institutions in WfD and the system's performance.

Hypothesis 1: We contend that well-functioning WfD systems require mutually reinforcing policies that simultaneously address weaknesses in governance, finance, and information at multiple levels of decision-making. Policy gaps in any of these areas compromise outcomes in a consistent and similar way across countries. Accordingly, examining WfD policies in countries that have improved the performance of their WfD systems will provide insight into priorities for reform and suggest strategies for plugging the most damaging gaps at a given level of system development.

Hypothesis 2: We suggest that good policies on their own are insufficient to improve WfD outcomes. Effective institutions for implementation and efficient feedback mechanisms are also critical in a dynamic reform agenda that delivers desired outcomes. These features combine to create a virtuous cycle of informed policy design, follow-up action, and self-correcting adjustments to minimize skills gaps and mismatches in a timely fashion. Suboptimal outcomes stem, on the other hand, from any or all of the following: weak or incomplete policy design, lack of attention to institutions and implementation, or disjointed feedback mechanisms.

Hypothesis 3: We assert that a “learn-to-do and do-to-learn” approach is essential in the search for better outcomes in workforce development. It minimizes what some writers have referred to as the risk of “borrowing” policies that may have worked in one context and applying them in another with little adaptation or consideration of local conditions (for example, Allais 2010). The approach reinforces the notion that, in a field of still evolving knowledge, successful reforms will require intentional learning by national policy makers through systematic efforts to build domestic capacity for policy design and implementation.

The three hypotheses influence our approach in designing the SABER-WfD tool. The first explains the tool's focus on the collection of comprehensive yet specific data on policies and institutions associated with various levels of decisions addressing market or government failures in governance, finance, and information. The second motivates the collection of evidence on institutions and policy implementation, the existence of policies on paper, as well as evidence on the scope of action. The third hypothesis leads us to document the use of feedback mechanisms and evidence of intentional learning in the process of policy reform and implementation. Through carefully crafted questions and answer options, the SABER-WfD instrument generates data for assessing a country's WfD policies, institutions, and praxis against predefined rubrics (as explained in a later section and in Appendix 2). Suffice it to say that the rubrics describe a progression in scores corresponding to increasing evidence of institutionalized processes, of policy implementation informed by robust analysis, and of continuous learning through strong feedback mechanisms.

Data for Benchmarking WfD Policies and Institutions

The SABER-WfD tool uses a survey-like data collection instrument (DCI) to gather information on policies on workforce development, including formal training programs, non-formal programs and informal TVET, whether public or private, as well as employer-based training.³¹ Because the respondent is not a person but a country (or subnational entities), an immediate question concerns the perspective from which the questions are meant to be answered. Keeping in mind the tool's purpose of supporting policy dialogue, primarily among interlocutors in the human development sector, the most appropriate perspective is that of the line ministries responsible for WfD. These parties would typically be ministries of education and of labor, although other special agencies may also be relevant. Below we elaborate on the overall structure of the dataset generated by the DCI, explain its content, and summarize its key features.

Overall Structure of the SABER-WfD Data Collection Instrument

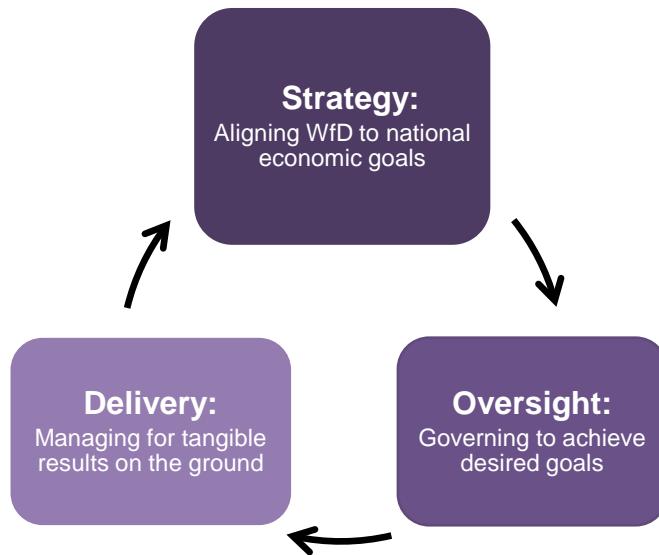
The DCI uses a cascading structure to organize the questions included in the tool. It first groups the questions into three broad functional dimensions. Each dimension is separated into policy goals that correspond to important thematic aspects of WfD institutions, policies and praxis. The questions under each policy goal are further grouped by topic, in order to create an efficient and natural flow in the line of inquiry during data collection. Details of key features of the DCI follow below.

Three functional dimensions of WfD institutions, policies and praxis. The three dimensions are: (a) *strategic framework*, which sets the direction for WfD in relation to national goals for economic growth and productivity, and defines its authorizing environment; (b) *system oversight*, which relates to the governance of the WfD system and the arrangements that support its operational functions; and (c) *service delivery*, which pertains to the management of the provision of services, whether by public or

³¹ The use of a survey-like DCI adds to the toolkit for economic and sector work on WfD and facilitates cross-country exchanges; it also differentiates the SABER-WfD tool from other analytical approaches. For example, the European Training Foundation's Torino Process (ETF 2012) shares SABER-WfD's overall objective of informing policy dialogue. It offers a common analytical framework for country-specific analyses; and provides explicit guidance on the issues to be addressed and on the indicators for which data should be mobilized to prepare reports as a basis for dialogue. However, the Torino Process does not use a survey to collect data, nor does it rate countries' WfD institutions and policy processes.

private provider, to achieve desired WfD outcomes on the ground (figure 2).³² From the perspective of the line ministries, strategy is about sensing, influencing, and responding to the external environment for WfD; oversight is about defining the “rules of the game” for all stakeholders that have a direct interest and part in WfD activities; and delivery is about supervising the entities responsible for training provision.

Figure 2: Functional Dimensions of WfD Policies and Institutions



Source: Authors' construction.

The three functional dimensions are interconnected, as the figure suggests. The quality of the strategic framework depends on the role that WfD is expected and enabled to play in fostering the economic success and well-being of individuals, businesses, and the country as a whole. The authorizing environment thus established sets the stage for defining specific institutions and mechanisms to guide the behaviors of the various parties involved—policy makers, employers, training providers, trainees. In turn, these oversight arrangements create the operational context for training provision by public as well as private providers. These service providers’ success in equipping trainees with skills for employment and productivity provides the feedback that closes the policy-making loop.

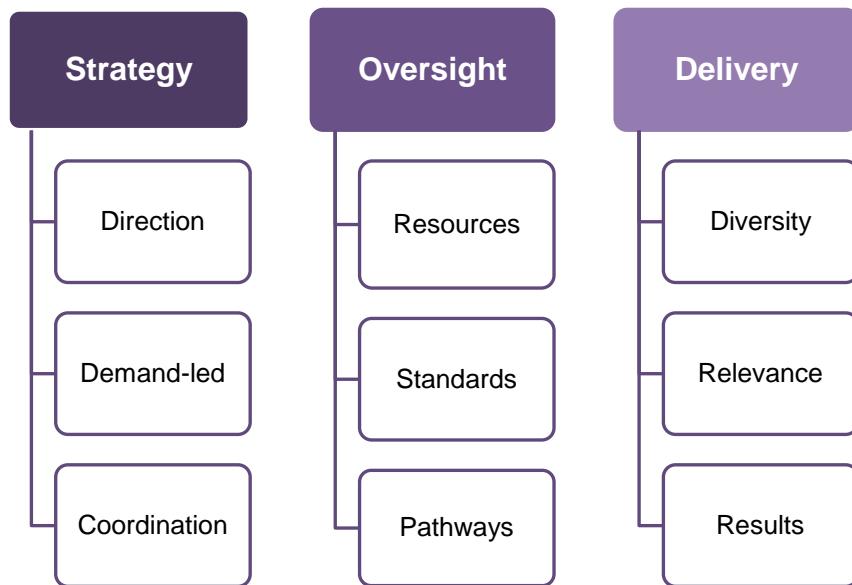
In essence, the DCI collects data that describe the WfD institutions and policies through which governments act to enhance the workings of two markets: “the [labor] market in which employers and individuals trade work for wages [or earnings]; and the training market in which individuals obtain training [and therefore acquire skills] from training providers” (Karmel 2011). The instrument includes questions on the basis of their likely relevance in most developing and emerging economies.

³² The functional dimensions of policies in figure 2 bears some resemblance to the threefold challenge that the UKCES (2009) believes the United Kingdom faces in its attempt to create a better, more responsive, demand-led, and effective WfD system. The three challenges are: (a) “a ‘policy gap’, where a stronger emphasis on the ‘demand’ side is required to bring about better balance to the policy agenda”; (b) “a ‘measurement gap’, where developing a more appropriate suite of ‘success measures’ for the system would help better align policy with the 2020 Ambition, and policy with delivery”; and (c) “a ‘policy to practice gap’, where delivery and arrangements on the ground do not always fulfill the ambition of the policy promise.”

Drilling down to the policy goals. The DCI's questions about WfD institutions, policies and praxis are grouped into nine policy goals (figure 3), three each for the three functional dimensions. While other ways exist to organize the DCI, the chosen structure satisfies the criteria of simplicity and natural sequencing of the questions.

It is useful to note briefly here some improvements to the instrument based on feedback from the pilot phase. DCI Version 2.5 excludes or consolidates questions found to be duplicative, and it rewards questions for greater precision where this is required. The answer options have also been adjusted in this spirit. The added precision and parsimony led to a slight reordering of the policy goals under the functional dimensions relating to oversight and delivery (see note to figure 3 below for details). It also prompted a reduction in the number of policy actions to 18 from the 27 in the pilot version of the tool. Appendix 1 provides a succinct summary of the organization of these 18 actions and the associated 47 topics for which data are collected. Below we explain the motivation for the specific questions posed in the DCI.

Figure 3: Policy Goals under Each Dimension



Source: Authors' construction.

Note: The single-word labels for the nine policy goals have specific meanings that are explained in the text below. The policy goals for two of the three function dimensions (viz., oversight and delivery) are arranged slightly differently here than in version 1.2 of the DCI used in the pilot phase. For oversight, the previous version ordered the policy goals as follows: pathways, resources and standards; for delivery, the previous order was: relevance, diversity and results. Readers are advised to keep these differences in mind in reading the reports from the pilot phase of the project.

Dimension 1: Strategic Framework

WfD is not an end in itself but an input toward broader goals—of boosting employability and productivity; of relieving skills constraints on business growth and development; and of advancing overall economic growth and social wellbeing. Its multidimensional nature poses complex challenges and tradeoffs. For example, when policy makers refer to skills for growth, they are typically concerned about skills that can help the economy diversify, innovate, and upgrade its technological capability.

However, because these skills pertain, by and large, to formal sector jobs they may be irrelevant to the majority of workers in developing countries who earn their living in the informal sector.

A second source of complexity is that all jobs call for a combination of skills. Bloom's (1976) classic taxonomy makes a distinction among cognitive, affective, and psychomotor skills.³³ Development of these skills typically involves different periods of gestation; the sequencing and timing of investments also depends on the specific skills required in different jobs. Some skills (for example, basic literacy and numeracy) entail sustained effort from relatively young ages (for example, through early childhood education and general basic education); others call for specific programs that meet employers' more immediate needs. On a fundamental level, WfD strategies entail trade-offs between short- and longer-term objectives, often because resources are limited and because of differences in the pattern of costs and benefits across investments in skills development.

A third reason for the complexity of WfD is that outcomes depend on the actions of multiple stakeholders, including individuals, employers, training providers, and government officials (often from several ministries or agencies). Asymmetric access to credit, imperfect or incomplete information, misalignment of incentives and weak cooperation among these actors are some of the obstacles that can lead to suboptimal outcomes in WfD.³⁴

These complex objectives and challenges of WfD lead us to emphasize the following policy goals under the functional dimension relating to strategy: (a) the setting of a strategic direction for WfD in alignment to the country's goals for economic growth, poverty reduction and social development, (b) prioritization of a demand-led approach to WfD, and (c) facilitation of critical coordination among the actors at the leadership level of decision-making. Bringing together these elements requires visible leadership and advocacy based on an understanding of and conviction about the role and nature of WfD in national development. It necessitates sound judgment in identifying strategic priorities and in mobilizing collaborative effort to solve critical short-run challenges while keeping an eye on longer-run ambitions for WfD and national socioeconomic goals. This calls for effort to remove practical roadblocks to cross-sector cooperation among diverse stakeholders where such cooperation is vital for achieving critical breakthroughs. The DCI builds on these ideas and includes questions that are grouped under three policy goals, as elaborated below.

Policy Goal 1: Setting a strategic direction for WfD. In reviewing the pattern of economic growth over the past few decades, the Commission for Growth and Development (2008) has emphasized the importance of "leaders who are committed to achieving growth and who can take advantage of opportunities from the global economy."³⁵ In the area of workforce development to support growth,

³³ Cognitive skills refer to a person's grasp of academic disciplines such as English, mathematics, as well as various pure and applied sciences, history, and so forth. Affective refer to his or her perceptions about work, concept of self and others, and attitudes toward timeliness, accuracy, quality, and performance. Psychomotor skills refer to the possession of skills required to perform the tasks or duties involved in an occupation, job, or business (for example, operating a lathe, preparing architectural plans, installing equipment, and so forth). The *Dictionary of Occupational Titles* (DOT) in the United States makes a distinction among jobs according to the degree of involvement with *Data, People, and Things* (see <http://www.oaj.dol.gov/PUBLIC/DOT/REFERENCES/DOTAPPB.HTM> (accessed on October 10, 2011). The O*NET's Content Model, which replaced the DOT in 1998, continues to emphasize the multifaceted skills requirements of jobs (for more information, see <http://www.onetcenter.org/content.html> (accessed on October 10, 2011)).

³⁴ See Almeida et al. (2012) for an elaboration of various market and government failures that can lead to suboptimal outcomes in workforce development.

³⁵ See http://www.growthcommission.org/index.php?Itemid=169&id=96&option=com_content&task=view (accessed on November 9, 2011).

East Asia's fastest growing economies over the past 50 years—South Korea; Taiwan, China; and Singapore among others—provide the clearest examples of the role of leaders in shaping the skills agenda (Commission on Growth and Development 2010). These nations have built a strong foundation in basic skills through general education for all and now consistently appear among the top-performing nations in international assessments (OECD 2010b; Mourshed et al. 2010). At the same time, they have also taken decisions to develop training systems that effectively equip workers with job-relevant skills to expand their own technological capabilities (see, for example, Abe 2006; Ashton et al. 2002; Green et al. 1999; Kuruvilla et al. 2002). The increasing sophistication of the exports from these countries is one sign of success. In South Korea, for example, electronic, electrical, and other high-technology products made up nearly 40 percent of the country's exports in 2006, up from less than 5 percent in 1980 (Yusuf and Nabeshima 2010).

Bearing in mind the important role of leaders, the DCI's questions for this policy goal seek information on the advocacy for WfD by top-level national leaders, whether in government or the private sector.³⁶ Such advocacy turns the public's attention onto WfD and helps to legitimize WfD as a priority for economic development. It also ensures that the subject receives due consideration in policy dialogue and in the implementation of agreed policies. The focus of top-level leaders may relate to broad challenges in WfD that are long term in nature (e.g., investing in early childhood development) or to more specific and immediate concerns with technical and vocational skills (e.g., skills required to support moving up the value chain in a few strategic economic sectors). The commitment of top-level leaders to any particular cause is admittedly difficult to quantify. For WfD, we document it through questions that reveal: (a) the extent of collaboration on shared strategic priorities among the champions of WfD; (b) the specificity of their action to advance the agenda for WfD; and (c) the attention to follow-up through systematic monitoring and tracking of implementation progress.

Policy Goal 2: Prioritizing a demand-led approach to WfD. To be effective, advocacy for WfD must be based on credible assessments of the demand for skills in light of a country's economic prospects (ILO 2008). It also recognizes that employers can provide an important source of reality check on such assessments. The specific ways by which the government brings these elements together in prioritizing a demand-led approach to WfD depends on the country's circumstances. To illustrate, in 1996 Costa Rica's President led the country on an eventually successful bid to persuade Intel, a global computer chip manufacturer, to set up the firm's newest plant in the country (Spar 1998; World Bank/MIGA 2006). Part of the deal included the introduction of new courses in technical training and new curricula.³⁷ In subsequent years, the country continued to align its education and training programs to meet the needs of employers in the information technology industry.³⁸ The IT industry is today a major part the

³⁶ The previous version of the DCI also included under this policy goal questions on evaluation of the economic prospects for skills and on policies to align skills demand and supply. These questions are now consolidated in DCI Version 2.5 with those for the next policy goal, in order to streamline the instrument.

³⁷ The Technological Institute of Costa Rica (ITCR) introduced a one-year certificate (for high school graduates), and a one-year associate degree and English language training programs. The technical courses focused on new fields such as semiconductor manufacturing and microelectronics, and later also included materials science (Spar 1998; World Bank/MIGA 2006).

³⁸ These demand-responsive efforts included, for example, the following: (a) new technical programs and enhanced curricula at the country's leading educational institutions—ITCR, the University of Costa Rica (UCR), and the National Training Institute (INA), especially during 1999–2003; (b) an English reinforcement program at ITCR; (c) links between UCR's School of Physics and technical and vocational schools for electronics; and (d) outreach programs in technology and science for teachers and students in primary, middle, and high schools.

economy, accounting for nearly 19 percent of exports in 2009, compared with just 4 percent in 1997.³⁹ Mexico's Integral Quality and Modernization (CIMO) program is another example of government effort to foster skills upgrading among firms.⁴⁰ In South Korea, the introduction in 2010 of a high-profile government initiative involving "meister" high schools exemplifies an effort to address emerging shortages of technicians for the country's priority sectors (for example, electricity, media, logistics, shipbuilding, IT, and automotive).⁴¹

Two aspects of a demand-led approach to WfD receive emphasis in the questions included in the DCI. The first pertains to the clarity on the demand for skills and areas of critical constraint. The questions seek evidence on the existence of and basis for formal assessments of the country's economic prospects and their implications for skills. They also document more specific skills constraints in the country's priority economic sectors. The second aspect of a demand-led approach to WfD focuses on the extent to which employers, including those in the informal sector, are involved in shaping the country's strategic priorities for WfD and in supporting skills-upgrading for workers. Besides seeking confirmation of employers' involvement, the DCI's questions also gather information on the incentives available to employers to upgrade the skills of workers. Such information sheds light on the extent to which the ambition of skills-led economic development is in fact backed up by policies to intensify employers' and firms' demands for more and better skills to help raise productivity.

Policy Goal 3: Strengthening critical coordination. WfD involves a wide range of activities and an extensive web of stakeholders with diverse interests, roles, and responsibilities. Ensuring that the combined effort of these partners is consistent with the country's key priorities for WfD is therefore an important goal of strategic coordination. Such coordination typically requires leadership at a sufficiently high level to overcome barriers to cross-sector or cross-ministerial cooperation that is often impossible to resolve among peers with similar levels of decision-making authority. Fundamentally, the core issues pertain to the "interactions among institutions, processes and traditions that determine how power is exercised, how decisions are taken on issues of public and often private concern, and how citizens and other stakeholders have their say" (Abrams et al. 2003). An arrangement that clarifies roles and responsibilities and fosters communication among the relevant WfD stakeholders sets the stage for coherent and well-coordinated actions by these players (see, for example, ADB 2009).

Coordinated effort is particularly relevant for major initiatives in WfD that are breaking new ground, that involve new or nontraditional partners, and that possibly also introduces new operational procedures. Such coordination at both the strategic and operational levels can help avoid duplication—or worse, misalignment or conflict—of effort and ensure that the most critical initiatives receive the necessary moral and material support for experimentation, consolidation, and maturation. Ireland's experience with the establishment of new regional technical colleges (RTCs) beginning in the late 1960s is an example of coordinated effort to supply mid-level technicians for the country's emerging industries

³⁹ Data from World Development Indicators (see <http://data.worldbank.org/data-catalog/world-development-indicators/wdi-2011>, accessed November 27, 2011).

⁴⁰ For more information about CIMO, see Tan et al. 2004.

⁴¹ These shortages stem from the preference of young Koreans and their families for studies at the universities. The "meister" high schools were created to offer students an attractive non-university route to the labor market. These schools offer new curricula that provide high quality technical training and explicitly cultivate "21st century skills." A personal visit in May 2011 by three of this paper's authors to Sudo Electric High School in Seoul, one of the first "meister" schools that the country's President inaugurated in March 2010, found the following: (a) a student-centered pedagogy; (b) inclusion of training for personality development; (c) opportunities for students to study abroad; (d) English used as the medium of instruction by teachers who are competent in the language; and (e) strong linkages with specific employers.

(O'Hare 2008).⁴² The Indian government's decision to create several new bodies in a three-tiered governance arrangement for WfD—the National Council on Skill Development, chaired by the Prime Minister; the National Skill Development Coordination Board, chaired by the deputy chairman of the Planning Commission; and the National Skill Development Corporation, headed by an eminent private sector industrialist—exemplifies a more recent effort of strategic coordination at the highest level of government.⁴³

To document the status of coordination among key parties involved in WfD, the DCI's questions probe for information on the roles played by government and non-government stakeholders and on the mechanisms for coordination among them. They also seek evidence of coordinated effort among the advocates of WfD on major strategic priorities and of explicit mechanisms for tracking implementation progress.

Dimension 2: System Oversight

The second functional dimension of WfD systems addressed by the SABER-WfD tool concerns the arrangements for oversight. These arrangements define the “rules of the game” for key stakeholders in WfD, including individuals, training providers and employers. Although WfD systems cover, by definition, all levels and types of training provision, the SABER-WfD tool focuses on oversight of those parts of the system that equip individuals with the vocational and technical skills necessary for semi-skilled and skilled jobs. Typically, training is offered at the secondary and post-secondary levels; in more mature and sophisticated economies, it is also offered at the tertiary levels, including in technical universities. These levels may be included, as appropriate, when using the SABER-WfD tool to document the system’s oversight arrangements. The tool recognizes that skills acquisition occurs through a variety of channels and modalities, including: (a) pre-employment or initial technical and vocational education and training; (b) continuing training and skills upgrading for those already in the workforce, through formal apprenticeships and other on-the-job training, formal course work, or nonformal or informal methods; and (c) training components in active labor market programs designed for target populations.

The main objectives of oversight are to facilitate efficient and effective skills acquisition by individuals to improve their employability and productivity, and to enable employers to meet their demand for skilled workers in a timely manner. The goal is to minimize mismatches in skills supply and demand, thereby enhancing the contribution of WfD to economic growth and social progress. In countries with large informal sectors where most people are self-employed, the oversight function also entails ensuring that individuals are able to access training services that are effective in enhancing their earning power.

If the markets for skills functioned perfectly there would be a limited role for oversight. Individuals could easily mobilize the funds required to pay for their training; they would have access at no cost to accurate and timely information about the types of skills in demand; they would know where and how to get trained, including the pre-requisites for enrolling in a desired program; and once trained, they would be able to send accurate and credible signals to potential employers regarding the skills they

⁴² O'Hare (2008) elaborates that the Ireland Development Authority (renamed since 1994 as the Industrial Development Agency (Ireland)), in its effort to convince foreign businessmen to invest in the country, used a portfolio of incentives to encourage a greater output of skilled technicians throughout Ireland, while simultaneously involving the leaders and staff of the training institutions to participate actively in its promotional efforts (for example, by attending functions where foreign businessmen were gathered, and travelling to events in potential investor countries).

⁴³ For more details of the arrangements in India, see Planning Commission, Government of India (2012); <http://labour.nic.in/upload/uploadfiles/files/Policies/NationalSkillDevelopmentPolicyMar09.pdf> (accessed January 7, 2013).

possess. Likewise, employers would have reliable and timely information about the skills of prospective and incumbent employees; they would be able to make accurate choices among possible training options for their workers; and they would face no constraints in organizing or purchasing training. Training providers, for their part, would be fully aware of the skills that are in demand and would tailor their programs accordingly; and they would have the information to create efficient pathways for skills acquisition for their clients, for example, through articulation agreements with providers that offer complementary services.

This scenario is unrealistic and highly unlikely to emerge on its own. Financial constraints are an obvious barrier, particularly for disadvantaged individuals or small firms, which are likely to prevent potential beneficiaries of training from making the investment, thus leading to suboptimal investments in WfD (Almeida et al 2012; Finegold 1995). Information is also costly to generate and acquire, and it may not be complete, relevant, accurate, or timely (see, for example, Woods and O’Leary 2007). Individual firms often cannot spare the time to codify their skills requirements, particularly if they employ few people or operate in a fast-changing business climate. Other distortions may arise from individuals succumbing to the temptation to overstate their knowledge and skills in order to land a desirable job or a promotion. Likewise, training providers may be motivated to mask the quality of their program offerings in the interest of attracting and retaining their clientele.

In light of the foregoing ideas, the SABER-WfD tool’s questions on the oversight dimension of its analytical framework are organized around the following three policy goals: (a) ensuring efficiency and equity in funding WfD investments, which fosters the system’s long-term financial sustainability; (b) assuring relevant and reliable standards for quality in service provision and skills acquisition, which creates more efficient signals in the market for skills; and (c) diversifying pathways for skills acquisition, which encourages lifelong learning as a basis for adapting to evolving labor market conditions.

Policy Goal 4: Ensuring efficiency and equity in funding for WfD. In practice, funding is a ubiquitous concern in WfD systems (see, for example, Wolf and Erdle 2009). In poorly funded systems, providers are hard pressed to satisfy the expectations of employers who in turn distance themselves from the providers; the result is to reinforce providers’ tendency toward supply-driven program offerings, which further undermines their ability to respond to employers’ needs. These conditions reduce the potential for productive partnerships in WfD. Many systems in developing and emerging economies fall victim to this vicious circle because governments simply do not have enough resources to prioritize TVET when other parts of the education system, such as primary and secondary schooling, are also poorly funded (see, for example, Atchoarena 2002; Dunbar 2011). Support for TVET is moreover often weakened by the fact that most students come from poor families that typically lack the political clout to influence budget allocations, as well as by the general perception of TVET as a “second-class” route to the labor market with doubtful impact in equipping students with job-relevant skills.

Some countries have nonetheless successfully tackled some of these problems. In Switzerland, for example, TVET tracks at the secondary level offer excellent programs and flexible pathways to tertiary level courses, which attract a sufficiently meaningful share of the country’s top students to overcome public bias against such programs (OECD 2010a; FOPET 2012). In Singapore, sizable investments in a high-quality TVET system over the years, coupled with sustained attention to the employability of graduates, have lowered social resistance to the TVET programs that the less academically inclined students enter after 10 years of general schooling (Law 2008).

With regard to funding for the training of incumbent workers, a common arrangement involves collecting a tax or levy from firms, often in relation to the size of the payroll, and using the proceeds to reimburse firms that train (Johanson 2009). Some observers cite Malaysia and South Korea as examples of successful schemes (for example, Lee 2009; Tan 2001). As for allocating funding to achieve results, having transparent and explicit allocation criteria and ensuring that the criteria themselves are reviewed and adjusted in light of experience, are a *sine qua non* of good oversight of WfD resources. Accordingly, some recent World Bank operations that support TVET, for example in Pakistan and India, seek to foster these practices.⁴⁴ Regarding partnerships, the relationship between Costa Rica's training institutions and Intel mentioned earlier exemplifies arrangements that have been sustained over time because they generate benefits for all parties: the firm, the participating training institutions, and the trainees (e.g., Linburg 2009).

The underlying policy design challenge is to influence WfD catalytically through the government's role in resource mobilization and funding WfD, ensuring efficient and effective use of the available funds, and in fostering partnerships that can multiply the resources, pecuniary and otherwise, that are available to encourage and support investment in WfD by individuals and employers. Governments fund WfD in part to counteract possible under-investment because of credit constraints (for example, as experienced by individuals from poor families), myopia on the part of prospective trainees and firms, incomplete information, or other imperfections in the market for training. Because funding for WfD is required on a continuing basis while public budgets are often limited and subject to intense competition from other competing projects, a clear strategy for sustaining support for WfD, one that benefits from continuous assessment and adjustment, can help ensure that funding is stable, sustainable, and sufficient to achieve the most important goals at reasonable cost. Such a strategy would recognize that besides public budget allocations, resources for WfD may also come from fees paid by trainees or their sponsors, and contributions by private entities, nongovernmental organizations, local communities, and/or external donors. Some of the contribution may take the form of in-kind donations of inputs that are essential for effective training programs (e.g., equipment and the services of experienced skilled workers).

To keep the DCI parsimonious, its questions for the policy goal of ensuring efficient and equitable funding for WfD seek to shed light mainly on: (a) the overall landscape of financing for initial and continuing technical and vocational education as well as the financing of targeted services for disadvantaged groups; (a) the prevalence of criteria-based allocations; (c) the practice of routine monitoring of the impact of funding arrangements on efficiency and equity; and (d) the nature and effectiveness of partnerships with employers to enhance the system's financial sustainability.

Policy Goal 5: Assuring relevant and reliable standards for quality in WfD. The underlying issue is trust in the skills acquired by individuals and relatedly, in the services offered by training providers. Allais (2010) notes that at present, more than 100 countries are in the process of establishing a national qualifications framework.⁴⁵ Her review of experiences in 16 of these countries cautions against overly

⁴⁴ For example, the Sindh Skills Development Project and the India Vocational Training Improvement Project; more information can be found on these projects at, respectively, the following sites:
<http://web.worldbank.org/external/projects/main?pagePK=64283627&piPK=73230&theSitePK=40941&menuPK=228424&ProjectID=P118177>; and

<http://web.worldbank.org/external/projects/main?pagePK=64283627&piPK=73230&theSitePK=40941&menuPK=228424&ProjectID=P099047> (accessed on October 13, 2011).

⁴⁵ Part of the interest stems from employers in countries that employ foreign workers. For these employers, the qualifications framework in the sending countries is a tool for gauging the quality of potential recruits from these countries. Another

ambitious expectations in the short run. Success requires significant resources and patient work by skilled personnel over many years—conditions that are often absent in developing and emerging economies. Ganzglass et al. (2011) stress the importance of stakeholder involvement in setting standards, of benchmarking standards to employers' requirements, and of reliable processes for validating standards and assessing learning. The system adopted by the National Institute for Metalworking Skills in the United States is an example of the application of these principles.⁴⁶ In less developed nations, where the informal sector dominates the economy, the testing and certifying of skills present special challenges, in part because many skills are acquired through traditional apprenticeships and standards are often tacit and probably uneven across practitioners (Atchoarena 2002; de Largentaye 2009; Janjua and Naveed 2009). Nonetheless, in the Indian government's nationwide Modular Employable Scheme, launched in 2010, a key feature is to codify the standards for skills acquisition and certification for a wide spectrum of jobs, many of them in the informal sector.⁴⁷

Like qualifications frameworks, accreditation is also about standards, but its focus is on training providers or programs. The process of accreditation typically involves an authorized accrediting body certifying, usually on a term-limited and renewable basis, that the training provider has met externally established standards for excellence or quality in service delivery (Vlăsceanu et al. 2007). The relevance of accreditation has grown in recent years against a backdrop of rapid expansion of enrollments at all levels of education and training in developing countries. The trend has overburdened public institutions and stimulated an explosive growth of nonstate providers (see, for example, King and Palmer 2010). The diversity in options for WfD investments is a positive development, but in the absence of adequate standards or regulation it could also mean a proliferation of substandard providers and programs (see, for example, Atchoarena 2002; Dunbar 2011). Specifying minimum standards is one way to weed out the worst operators while allowing others to reach for a higher bar, if desired—for example, by obtaining accreditation with internationally recognized bodies such as the International Standards Organization (ISO).⁴⁸

To document the institutions and policies that a country has put in place to advance the goal of assuring relevant and reliable standards, the SABER-WfD DCI contains questions covering three broad areas of interest: (a) the scope and robustness of qualifications frameworks; (b) the protocols for and credibility of skills testing and certification; and (c) the specification and enforcement of accreditation standards and the support and incentives available for training providers to meet the desired standards.

Policy Goal 6: Diversifying the pathways for skills acquisition. Technological advances affect how economic activity and work is organized in an increasingly integrated global economy. Among other impacts, they are likely to make job markets more volatile, notably by destroying jobs in sectors that are no longer competitive and creating new ones elsewhere in the economy, all within shorter and shorter time intervals. Because the new jobs are likely to require new skills and competencies, workers will need to keep their skills up-to-date and attuned to fast-changing economic conditions in order to remain employed. In aging societies, where retirement may be delayed to keep pension schemes financially solvent, these trends mean that more and more people can no longer count on working in a single job or even in a single career over the course of their (extended) working lives (see, for example, Kiley and

source of interest stems from the growing demand for intercollegiate credit transfers and articulations across programs and institutions.

⁴⁶ National Institute for Metalworking Skills. Undated. "Skills Standards." <https://www.nims-skills.org/web/nims/> (accessed June 17, 2011).

⁴⁷ See <http://dget.nic.in/mes/sectors.htm> (accessed on July 30, 2011).

⁴⁸ Singh and Sareen (2006) note the rising popularity of ISO 9000 certification among Indian educational institutions.

Cannon 2000; Wang 2012). For growing numbers of people, therefore, life-long learning is not merely an attractive concept but an economic necessity.

Lifelong learning receives the greatest support when clear pathways exist for skills acquisition and when students are able to transfer across courses, progress to higher levels of training, or gain access to programs in other fields (MacKenzie and Plovore 2009). In reality various barriers restrict the available pathways. An important barrier is the “dead-end” status of some courses of pre-employment education and training.⁴⁹ In many countries, students who pursue technical and vocational courses of study often earn credentials that receive little or no recognition for admission into courses of further studies. Often the problem is not just the poor image of these courses but also their intrinsic poor quality. Switzerland is an example of a country with an effective arrangement to address this problem. Its system of technical and vocational secondary schools is sufficiently attractive that they enroll some of the best students. Further, the baccalaureate certificate that students earn at the end of their studies is valid for admission to the country’s various universities (FOPET 2012). In the United States, the arrangements are less formal, but many community colleges offer flexible pathways through such practices as: (a) giving students credit for work experience in industry; (b) collaborating with high schools on preparatory courses that allow students to fulfill the prerequisites for full-time enrollment in a community college; and (c) entering into agreements with universities and other colleges, most often within their respective states, to provide students with the option to continue on to four-year college- or university-level programs once they have proven themselves in a community college program.⁵⁰

A second barrier to lifelong learning, especially for those already in the workforce, is the absence of arrangements to recognize prior learning. Individuals without the formal credentials for admission into their chosen training programs are assumed to have no relevant skills and must thus start their training at a more basic level than necessary. The result is to prolong training time and increase costs for prospective trainees, which may in turn discourage them from embarking on plans to learn new skills or build on existing ones. Thus, even for the motivated, lifelong learning may be haphazard or even impractical under these circumstances. Ireland is an example of a country where recognition of prior learning has been institutionalized through a well-structured national qualifications framework.⁵¹ The public is informed about the relations among qualifications and certificates earned at various levels of instruction, from the pre-secondary to the university; and individuals can obtain help with qualification recognition from the agency in charge.⁵² Disadvantaged population groups face bigger challenges in pursuing lifelong learning and may therefore require targeted services, such as special outreach programs or customized information.

Reflecting the foregoing considerations, the DCI’s questions for the policy goal of diversifying pathways for skills acquisition seek information that would permit an assessment of the following three broad aspects of the system: (a) the extent that it promotes educational progression through multiple learning pathways, including for students in TVET streams; (b) the facilitation of lifelong learning through the

⁴⁹ For discussion of this issue in developed and developing country contexts, see, for example Mupinga et al 2006, Sliwka 2010, and Wolff 2011.

⁵⁰ For example, the community colleges in the states of Virginia and Maryland have such agreements with their respective state colleges and universities.

⁵¹ Its system fits what is described by Hanf and Hippach-Schneider (2005): the framework essentially “takes all of ... the formally recognized qualifications and arranges them in a clearly defined structure.... [Qualifications are] understood as sets of certified or documented skills, with no regard given to the respective learning path.”

⁵² See <http://www.qqi.ie> and <http://www.qualificationsrecognition.ie/>, accessed December 21, 2012.

recognition of prior learning and related mechanisms; and (b) the availability of support services to encourage lifelong learning, particularly among the disadvantaged.

Dimension 3: Service Delivery

This functional dimension of the WfD system shifts our focus from the strategic and systemic to the operational. It addresses implementation challenges in WfD that stand between a country's ambition for WfD to support economic development and what materializes in reality. Training providers, both government and nonstate, are the main channels through which the country's strategic and systemic policies are translated into operational applications. Thus, we disaggregate this policy dimension into the following three policy goals: (a) promoting diversity and excellence in training; (b) fostering relevance in public training programs; and (c) enhancing accountability for results in WfD throughout the system.

Policy Goal 7: Enabling diversity and excellence in training provision. Because the demand for skills is impossible to predict with a high degree of precision, a top-down approach to training provision is often ineffective. Instead, having a diversity of providers that are appropriately motivated to meet the demand for skills is arguably more promising (see, for example, Booth and Snower 1996). Most systems indeed include both state and nonstate providers, thus offering individuals and firms a range of choices in the training market. Encouraging excellence in training provision requires different interventions, however, for state and nonstate providers.

Among nonstate providers, financial viability is a powerful incentive that conditions their behavior. Providers that depend largely on fees paid by individuals or firms (typically on behalf of their employees) have strong incentives to explore the specific skills required by employers and tailor their training programs accordingly. By working closely with employers and developing a reputation for responsive and effective training, these providers can improve the attractiveness of their services, thereby assuring the commercial viability of their business. A downside of the profit motive, however, is that providers may cut corners to save costs or hide serious flaws in their operations that are difficult for a poorly informed public to detect. In some countries, weak regulation of standards in a context of rapid expansion has led to a proliferation of private sector providers, many of them offering substandard services (see, for example, Atchoarena 2002; Dunbar 2011).

User-driven models of financing are one way to promote diversity in training provision while muting the potential adverse effects of the profit motive on quality. In Australia, the state of Victoria introduced a model that the government argues would "drive greater competition (thereby achieving increased accountability, accessibility and quality) and respond more effectively to changing labour market needs" (Skills Victoria 2011). In Kenya, a large-scale voucher program for workers in the informal sector (also known as the "Jua Kali" sector) led providers to tailor their programs to the unique needs of informal sector workers (Johanson and Adams 2004). More recently, in 2008, another experiment with vouchers in Kenya suggests that institutions enrolling voucher winners were more likely to expand their course offerings compared to those that enrolled no voucher recipients (Hicks et al. 2011). In Chile, only providers registered with the National Training Authority (*Servicio Nacional de Capacitacion y Empleo—SENCE*) are eligible to bid for publicly-funded training programs (Johanson 2009).

Among publicly-funded providers of training, a key aspect of quality is their responsiveness to the demand for skills from employers and students (ADB 2009; Dunbar 2011). In many developing and emerging economies, weakness in this area stems in part from chronic shortages of public funding, a constraint that limits the range and quality of programs that providers are in fact able to offer. Rigidity

in other areas, such as bureaucratic decision-making, compounds the challenges. The result is often a vicious circle of overly centralized controls which stifle initiative and institutional flexibility and weaken employer interest in the training programs. The loss of employer engagement means that training providers will, at best, be slow in addressing employers' demands for skills and, at worst, be uninformed about competencies desired by employers.

The governance of publicly-funded providers is at the core of the issue here. Granting autonomy to publicly-funded institutions is one approach taken by various countries to improve the performance of public institutions. In India, under an ongoing modernization program of the country's more than 1,800 industrial training institutes, institute-level management committees, each chaired by a prominent local industry leader and comprising government and industry members, are being set up and granted academic and financial autonomy to operate the institutions (Prasad 2012). In the United States, most of California's community colleges have institutionalized advisory boards with industry representatives as members. The colleges rely on their respective boards for guidance and inputs to ensure that course offerings are relevant to industry needs (Lindburg (2009)). In Singapore, the Institute of Technical Education is constituted as a statutory board under the Ministry of Education; the Institute enjoys a high degree of management autonomy (e.g., over staffing and course offerings) and is accountable for achieving targets agreed with its parent ministry (Law 2013 forthcoming).

In light of the ideas discussed above, the SABER-WfD tool's questions for assessing the goal of promoting diversity and excellence across training providers cover the following: (a) the role of nonstate training provision, arrangements for quality assurance and evidence of continuing reviews of policies toward nonstate training providers; and (b) the autonomy and accountability of public training providers.

Policy Goal 8: Fostering relevance in public training programs. Making this an explicit policy goal recognizes the fact that the government in many countries directly operates publicly-funded training institutions. The scope of government involvement varies widely: in Chile, for example, government-run training institutions exist only at the secondary level while in Costa Rica such institutions offer training at both the secondary and post-secondary levels.

The market relevance of public training programs depends on providers' access to reliable sources of up-to-date information on current and emerging skills demands. Employers and industry associations are a key source of such information. Without systematic arrangements, however, it may be difficult and probably too costly for individual training providers to gather the desired information on a continuing basis. In the Netherlands, the problem is solved through an institutionalized arrangement that involves an umbrella organization connecting training providers to specific employer-led sector skills councils that define occupational standards and competencies to shape the curriculum used by the training providers (Ashton 2006).

Another source of information, particularly in relation to future skills needs, is research institutions. Such institutions are at the forefront of developing, adapting, and introducing products and services new to the country or region; their activities can therefore offer useful insights into the future demand for skills. In Australia, the training of technicians for the wine industry benefits from a close connection between the providers serving this industry and the relevant research institutions (Ferrier et al 2003; Anderson 2010). In China, the Beijing Agricultural School (BAS) disseminates the fruits of agro-technology research in the agricultural sector and upgrades the technological competencies of farmers through formal and nonformal training programs (UNESCO 2002).

Getting the curriculum right is only half the battle. Also needed to deliver market-relevant public training programs are instructors and administrators with relevant exposure, if not actual work experience, as well as access to facilities, equipment, and instructional materials. Because the costs of hiring staff with industry experience are high, possibly unaffordable for most institutions, it is important to pursue a variety of arrangements to make training as relevant to industry needs as possible. In-service training to help administrators and instructors keep their knowledge of industry trends up to date is an important part of the solution (ILO 2011; Toze et al 2009). The inclusion of workplace training is also important. In some systems, publicly-funded training colleges deliver theoretical off-the-job training while employers provide the on-the-job component, through such arrangements as apprenticeships, internships, or other work place opportunities for learners to gain authentic experience in performing jobs or in handling production equipment. Germany's dual training system is perhaps the best known example of such arrangements (e.g., Bosch 2012). Workplace training also features in other well-developed WfD systems (e.g., the Netherlands and Australia) although the specific arrangement may differ from Germany's.

The relationship between the Korea University of Technology and Education (KUT) and Samsung illustrates an arrangement where various elements work together to enhance the relevance of training programs in a public institution.⁵³ KUT hosts the Employee Vocational Education Program, which offers short courses to Samsung's own workers as well as those from the firm's subcontractors. KUT provides the premises, and the teaching and administrative staff. Samsung, for its part, leads in defining the course curricula, provides the equipment, and lends in-house experts to co-teach the courses. The collaboration benefits all parties. Samsung gains from having subcontractors that can meet its product specification and quality standards; its subcontractors gain from being able to retain or expand their business with the company. Most importantly, the university gains from the opportunity to involve its faculty in organizing and teaching the courses. This involvement enhances the competence of its administrators and instructors in the design and delivery of industry-relevant training programs.

The foregoing examples motivate the inclusion of questions in the SABER-WfD tool designed to gather information on: (a) the existence and nature of the links between public training institutions and industry partners, and between training and research institutions; (b) industry's role in defining training curricula and other related matters; and (c) the criteria for staff recruitment and the availability and practices regarding in-service staff development.

Policy Goal 9: Enhancing evidence-based accountability for results. Systematic monitoring and evaluation of service delivery are hallmarks of a strong WfD system. The types of data collected and how they are used are indicative of the commitment to ensuring that training providers and the WfD system as a whole are delivering on expected outcomes.

Requiring training providers to report administrative information about their operations fills a basic and useful purpose for the government authority mandated to oversee service provision. Even simple reporting on enrollments, staffing, budgets and main accomplishments, if done routinely, serves as a tool for accountability. In Singapore, public sector training providers typically issue annual reports in this spirit.⁵⁴ If all providers, whether state or nonstate, report on their operations, the information,

⁵³ This information is based on a personal visit to KUT in May 2011 by three of the authors of this paper.

⁵⁴ For examples, see the annual reports of the Singapore Workforce Development Authority at <http://www.wda.gov.sg/content/wdawebsite/L209-001About-Us/L209D-AnnualReports.html> (accessed August 12, 2012).

when consolidated into an accessible database, can clarify key features of and trends in training provision, including differences in performance across training providers. South Korea is an example of a country where policy makers have access to a compilation of comprehensive and up-to-date data from administrative and other sources to inform policy design (see, for example, KRVET 2007).

Beyond information on training provision, overseers of the WfD system also need data on the demand for skills and the nature of skills gaps and mismatches. In many developing and emerging economies, educational attainment and self-reported literacy are often the only available measures of "skills." International cognitive tests provide additional insights but the data typically pertain only to school-age youth; they also ignore the importance of non-cognitive skills for workplace success in the twenty-first century (for example, di Gropello et al. 2010 and 2011; Sondergaard and Murthi 2012). To close the information gap, countries in the Organization for Economic Co-operation and Development (OECD) have embarked on new surveys under the Programme for the International Assessment of Adult Competencies (PIAAC) to document and analyze the skills of the working age population (Schleicher 2008). A similar effort by the World Bank, the Skills toward Employment and Productivity (STEP) Measurement Study, is currently underway in 13 low- and middle-income countries to document and analyze both the cognitive and non-cognitive skills of adults.

Finally, assessing promising innovations in WfD is also a desirable aspect of monitoring and evaluation. Mulgan and Albury (2003) postulates that the process of innovation typically passes through four phases: (a) generating possibilities through new ideas; (b) incubating and prototyping the most promising of the new ideas; (c) replicating and scaling up the best ideas (i.e., most cost-effective and most relevant to the local context); and (d) distilling and codifying lessons to institutionalize knowledge and foster a culture of continuous learning and improvement. While many countries lack such a systematic process, a welcome trend is the growing practice of rigorous impact evaluation in the field of skills development. Recent examples include evaluations of youth training programs in several Latin American countries (for example, Ibarraran and Shady 2009; Orazio et al 2011) and of programs targeted at adolescent girls in countries around the world.⁵⁵

In light of the ideas discussed above, the SABER-WfD tool assesses the goal of enhancing accountability for results by gathering information on practices relating to monitoring and evaluation, including the following: (a) the reporting of administrative data by training providers; (b) the prevalence and nature of complementary data collection on skills-related topics; and (c) the use of data to monitor and improve the performance of programs and the system as a whole.

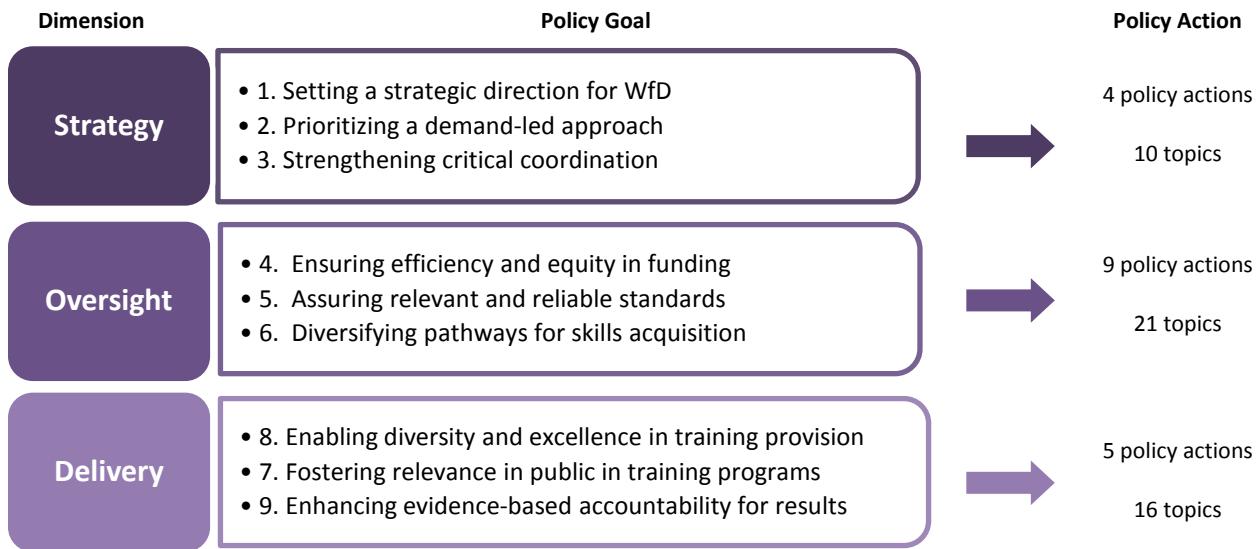
Summary of the Functional Dimensions and Related Policy Goals

In summary, the SABER-WfD tool collects data on three functional dimensions of institutions, policies and praxis for workforce development: strategy, oversight, and service delivery. For each dimension, the data focus attention on policy goals that address market and government failures in governance, finance, and information. Figure 4 recapitulates the policy goals explained above while Appendix 1 provides additional details.

and of one of Nanyang Polytechnic, at <http://www.nyp.edu.sg/about-nyp/media-centre/publications/annual-report> (accessed August 12, 2012).

⁵⁵ For more details on the Adolescent Girls Initiative at the World Bank see <http://go.worldbank.org/ 5PYHEZS360> (accessed on November 9, 2011).

Figure 4: Summary of the Functional Dimensions and Policy Goals in the SABER-WfD Dataset



Source: Authors' construction.

Note: See Appendix 1 for details on the policy actions.

Design Features of the SABER-WfD Data Collection Instrument

The idiosyncrasy and complexity of WfD systems present challenges for the design of the SABER-WfD data collection instrument (DCI). They make a persuasive case for gathering detailed information on all aspects of the WfD system. Yet the essentially qualitative nature of the data would make gathering such data too time-consuming and costly. Moreover, these data would need to be standardized in order to facilitate self-evaluation and cross-country learning. Below we highlight our approach to addressing some of these challenges and explain the protocols for data collection.

Balance between diagnostic and comprehensive data. The SABER-WfD data collection instrument (DCI) is parsimonious by necessity. It thus focuses on key WfD institutions, policies and praxis, such as: the presence of particular policies and their scope; the institutions through which the policies operate; the involvement of and engagement with stakeholders; and evidence of policies being implemented and of feedback loops used to adjust and improve policies and implementation. To standardize information across countries, all the questions in the DCI are answered by choosing from a closed menu of options, and substantiated by documentary evidence or information from credible informants. As appropriate, the data collector may provide additional information to qualify the answer option selected, thus avoiding the loss of potentially important country-specific information.

A more difficult challenge relates to the complexity of WfD systems. Such systems typically involve multiple authorities, often with complementary as well as overlapping responsibilities. The training programs that are available may target clients at different levels of instruction, and training providers are likely to serve a diversity of employers from different sectors of the economy. In large countries, the WfD system may be highly differentiated across regions. Under the circumstances, the temptation is to

collect information on all aspects of the system. Yet, such comprehensive data may provide too much detail for the diagnostic purpose of the SABER-WfD initiative.

As a practical strategy to address the complexity of WfD systems, we assume that WfD institutions, policies and praxis may be benchmarked based on information associated with the system's most salient or dominant components. This approach puts all systems in the best possible light, thus removing some of the ambiguity in the benchmarking exercise. Unless a single WfD authority oversees both pre-employment and in-service training, the DCI requests information about the ministries most likely to be involved in oversight and service delivery functions; in most cases, the ministry of education and the ministry of labor are the key WfD authorities. To take into account country specificities, the DCI includes an option for the data collector to include other ministries should these play an important role in the system.

The DCI addresses complexity in training provision by requesting information separately for two levels of instruction: secondary and post-secondary. For a few questions in the DCI, meaningful answers are possible only in relation to particular economic sectors (for example, regarding the linkages between training provision and industry) or occupations (for example, the organization of skills testing). In such cases, the DCI requests information for the two most dominant or fastest-growing sectors or occupations. For large countries, data collection through the DCI is more feasible and meaningful at the subnational level rather than for the country as a whole.

Data on the *de jure* and the *de facto* situation. An important concern with the type of qualitative data collected by the DCI is that they may reflect the *de jure* situation rather than the reality on the ground. For example, many low-income countries have well-written plans to make WfD a key asset for economic development and some even report plans for sophisticated funding systems for WfD (for example, vouchers for individuals to pay for skills development). Yet, for a variety of reasons, including weak capacity and lack of resources, the plans are often not implemented. In such situations, it would be inappropriate to benchmark the system based entirely on the intended policies rather than on actual practice. A full-fledged data collection effort would help verify implementation of the stated plans and policies but may be impractical because of cost and time considerations.

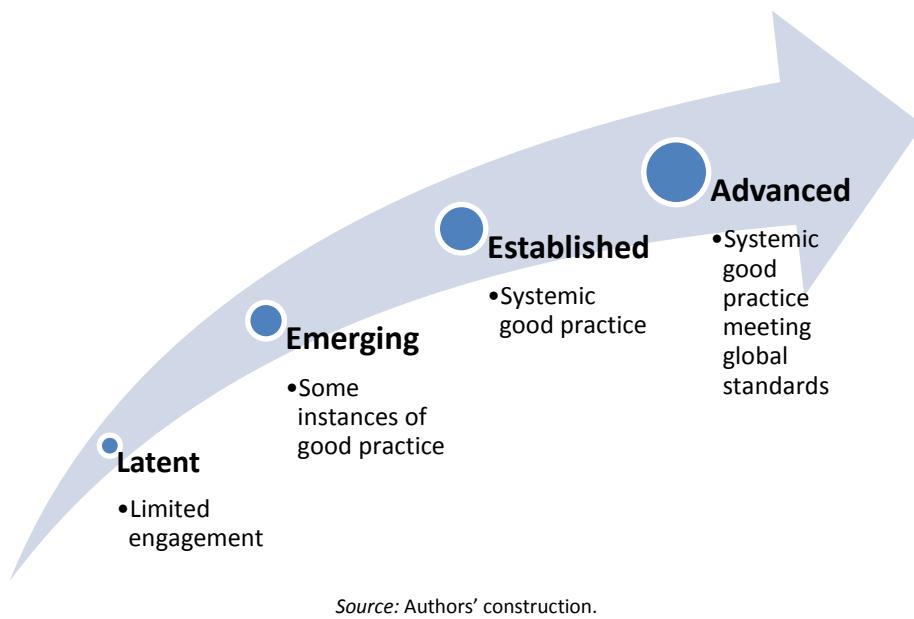
To strike a balance, we adopt the strategy of adding a few more questions under each topic of inquiry in the DCI to find out if the most important plans, policies, or programs among those listed, typically no more than the top two, have been implemented, and evaluated for impact, and if the recommendations from the evaluations have led to follow-up actions. The information clearly does not fully capture the *de facto* situation and it is certainly no substitute for a more comprehensive documentation of the status of policy implementation. The approach nonetheless provides sufficient information to make it possible to situate the policy goal being benchmarked in relation to the four stages of development used in our benchmarking exercise.

Analyzing the SABER-WfD dataset

The SABER-WfD dataset consists of qualitative information on various aspects of a WfD system. Below we explain how the data are analyzed to obtain scores that rate the maturity of the system's institutions and policy processes.

Generic scoring rubrics. Following the practice adopted in the World Bank's overall SABER initiative, we use a four-point scale for scoring the data collected by the DCI: latent, emerging, established, and advanced. The generic meaning of the scale appears in Figure 5 while its application to each aspect of WfD institutions, policies and praxis documented by the tool is conditioned by the specific questions posed.

Figure 5: Generic Benchmarking Rubrics



Rubrics for scoring topic level data. The DCI contains questions organized by topic. Although each question generates a data point, the information is more substantive when combined with other information under the same topic. For example, on the first topic in the DCI—"advocacy for WfD to support economic development"—a total of eight questions are posed, to seek such information as: (a) whether or not there are visible champions that advocate for WfD; (b) who these champions are; (c) how the champions have provided advocacy for WfD; and so on. Analyzing the information taken together rather than separately for each question provides a fuller picture of the existence and nature of high-level advocacy for WfD. For this reason, in defining the scoring rubrics for data analysis, we treat the topic as the basic unit of analysis, not the individual questions for each topic. In this sense, the topic-level rubrics might be described as the foundational rubrics in our analytical approach. For each of the 47 topics in the DCI, the rubric is customized by adapting the generic rubric to the specificities of the topic under consideration. As an example, table 1 below shows the rubrics for the first two topics in the DCI.⁵⁶

⁵⁶ See Appendix 2 for additional examples.

Table 1: Examples of Customized Rubrics for Scoring Topic-Level Data

Topic	Scoring Rubrics ^{a/}			
	Latent (1)	Emerging (2)	Established (3)	Advanced (4)
<u>Topic 1:</u> Advocacy for WfD to Support Economic Development	No visible champions advocate for WfD to support economic development.	Some visible champions advocate for WfD to support economic development on an <i>ad-hoc</i> and limited basis.	Government leaders exercise sustained advocacy for WfD with occasional, <i>ad-hoc</i> participation from non-government leaders; their advocacy focuses on the WfD policy agenda for selected industries or economic sectors.	Both government and non-government leaders exercise sustained advocacy for WfD, and rely on routine, institutionalized processes to collaborate on a strategic, economy-wide WfD policy agenda.
<u>Topic 2:</u> Strategic Focus and Decisions by the WfD Champions	WfD champions have taken no specific action to advance strategic WfD priorities.	WfD champions have taken specific action on strategic WfD priorities through a few interventions, but no arrangements exist to monitor and review implementation progress.	WfD champions have taken specific action on strategic WfD priorities through a range of interventions, and implementation progress is monitored, albeit through <i>ad-hoc</i> reviews.	WfD champions have taken specific action on strategic WfD priorities through well-integrated interventions, and implementation progress is monitored and reviewed through routine, institutionalized processes.

a/ Numbers in parentheses correspond to the scores assigned to each point on the rubrics used to analyze the SABER-WfD data.
Source: Authors' construction.

The data for each topic in the DCI are scored against the rubric for that topic, using a four-point scale. The scores are calibrated based on available knowledge on global good practice and reflect the principles reflected in the generic rubrics. The qualitative nature of the data and the fact that multiple data points are involved mean that a certain amount of ambiguity is unavoidable in the scoring process. We minimize the problem in several ways. One approach is to identify for each topic, a few critical conditions among all the ones listed that must be satisfied in order to earn a given score; failing to meet these critical conditions automatically pushes the score to the next lower level even if all other conditions for that score are satisfied. The choice of these critical conditions differs by topic, but they would often pertain to the scope of policies or engagement with relevant stakeholders, or to the degree of institutionalization of key policy processes.

Other measures to minimize ambiguity in the scores involve strengthening the scoring process itself. At the start of the process, a typical approach is to arrange for separate scoring of the data by several individuals, all using the same scoring rubric. Their scores are then compared and either confirmed or rationalized to remove inconsistencies following discussion among the scorers and, if needed, between them and those responsible for filling in the DCI. A process of consultation with knowledgeable in-country stakeholders offers yet another measure to remove ambiguity and validate the scores. The

main goal of all these approaches is to ensure that the scores provide a sufficiently accurate picture of the state of the WfD system's institutions, policies and praxis.

Aggregate scores and “composite” rubrics. In the SABER-WfD analytical framework, the topics feed into higher levels of aggregation, first to the level of policy actions, then to the level of policy goals, and finally to the level of functional dimensions. This structure simplifies the complexity of WfD institutions, policies and praxis to more manageable components. It also means that the topic-level scores can be used to compute scores for the higher levels of aggregation in the framework. Scores at the policy action level are thus simply the unweighted averages of the underlying topic-level scores; those at the policy goal level are the unweighted averages of the underlying action-level scores; and those at the dimension level are the unweighted averages of the scores for the underlying policy goals. This algorithm yields scores on a 1-4 scale for every level of aggregation in the data. However, since the composite scores are averages of the underlying foundational scores, they are rarely whole numbers.⁵⁷

To interpret the aggregate scores we develop composite rubrics which are based on the topic-level rubrics. These composites are almost always less precise than the rubrics on which they are based. A key reason is the inevitable increase in the number of permutations of conditions, so that the same score may be consistent with many combinations of underlying conditions at the topic level. Yet by reducing the large amount of detailed information at the topic level to a digestible volume, the composite rubrics remain meaningful for assessing the maturity of WfD institutions, policies and praxis. To take the example of the two topics in the previous table, the composite rubric for the policy action into which they feed (viz. “provide sustained advocacy for WfD at the top leadership level”) is shown in table 2 below.⁵⁸

Table 2: Example of a policy action-level composite rubric^{a/}

	Latent (1)	Emerging (2)	Established (3)	Advanced (4)
Policy Action: provide sustained advocacy for WfD at the top leadership level Note: this action is a consolidation	Visible champions for WfD are either absent or take no specific action to advance strategic WfD priorities.	Some visible champions provide ad-hoc advocacy for WfD and have acted on few interventions to advance strategic WfD priorities; no arrangements exist to monitor and review implementation progress.	Government leaders exercise sustained advocacy for WfD with occasional, ad-hoc participation from non-government leaders ; their advocacy focuses on selected industries or economic sectors and manifests itself through a range of specific interventions;	Both government and non-government leaders exercise sustained advocacy for WfD, and rely on routine, institutionalized processes to collaborate on well-integrated interventions to advance a strategic, economy-wide WfD policy agenda; implementation progress

⁵⁷ In order to conform to standardized presentation across all policy domains in the overall SABER initiative, the composite SABER-WfD scores may sometimes need to be converted to whole numbers mapped to a generic rubric with a four-point scale corresponding to latent, emerging, established and advanced. For this purpose, the following conversion table is used:

Composite score	$1.00 \leq X \leq 1.75$	$1.75 < X \leq 2.50$	$2.50 < X \leq 3.25$	$3.25 < X \leq 4.00$
Generic rubric and score	Latent	Emerging	Established	Advanced
	1	2	2	4

⁵⁸ See Appendix 3 for the composite rubrics for all 18 policy actions in the SABER-WfD framework.

of the two topics in the previous table		implementation progress is monitored, albeit through ad-hoc reviews.	is monitored and reviewed through routine, institutionalized processes.
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a/ This composite rubric is a consolidation of the rubrics shown in the previous table for the two topics which feed into the policy action of “provide sustained advocacy for WfD at the top leadership level. The bolded words draw the reader’s attention to key differences across the scores defined by the rubric.

Source: Authors’ construction.

The scores at the policy action level contain rich information but they also risk slicing reality too finely and preventing a more holistic assessment to emerge from the data. Scores at the next higher levels of aggregation at the policy goal and policy dimension levels address this concern. However, the inevitable increase in the number of permutations that fit a particular score implies a corresponding loss of precision in the composite rubrics. As a compromise between precision and brevity in reporting the findings, SABER-WfD reports would generally present the scores aggregated at the policy goal and dimension levels. The rubrics for the nine policy goals appear in Appendix 4.

One final note on aggregated scores is noteworthy. As the reader may recall, the DCI does not collect comprehensive data. Yet where the WfD system involves more than one government ministry or more than one level of instruction, it gathers data separately for each relevant ministry or agency and for each level of instruction. For such data, the topic-level information is first scored separately by ministry and by level of instruction, based on the relevant rubric for that topic; these scores are then aggregated, again by simple averages, to obtain the composite topic level score. The aggregation to higher levels of aggregation follow the same procedure as described above.

The scoring algorithm has been kept intentionally simple. The straightforward calculations have an important advantage: they allow easy unpacking of each score to reveal the underlying topic-level scores; they also mean that scores can be disaggregated, if needed, by agency and level of instruction. These features make it relatively easy to explore the reasons behind a high or low score, thus drawing attention to specific areas of strength or potential weaknesses in the system’s institutions or policy processes.

Conclusion

Workforce development is a topic of growing interest among the World Bank's partner countries. Many policy makers in these countries acknowledge that skills gaps and mismatches can potentially cripple efforts to boost economic growth and reduce poverty. Yet it is unclear what specific approaches and options for skills development might help advance desired socioeconomic goals. Given the cross-cutting nature of WfD challenges, policy makers need an appropriate analytical framework for clarifying and facilitating dialogue on these challenges. They also need information on the how the WfD system is functioning and performing, not only in their own countries, but also elsewhere, particularly in countries that are making progress in equipping the workforce with job-relevant and productivity-enhancing skills. The SABER-WfD package of resources was created to meet both of these needs.

The package contains an analytical framework that brings into focus both the supply and demand sides of the skills equation. Accompanying the framework is a data collection instrument, now in version 2.5, which gathers data on key aspects of WfD institutions, policies and praxis. This type of information complements other data, such as those from the World Bank's STEP Skills Measurement study and the OECD's PIAAC initiative, which provide focus on measuring the skills of adults across countries, on documenting the nature of gaps and mismatches, and on exploring the links between skills, jobs and productivity. The SABER-WfD tool focuses instead on the mechanisms through which government interventions might influence outcomes in workforce development. Its niche is to systematize the collection and analysis of typically qualitative information on WfD institutions, policies and praxis.

Experience thus far with the SABER-WfD tool is promising. Its analytical framework is helping to draw attention to the importance of taking a cross-sector and holistic approach to addressing WfD challenges. The systematic documentation of WfD institutions and policies is shedding light on the inner workings of WfD systems, a feature that often receives limited or only *ad-hoc* attention in analytical work. By enabling the accumulation of comparable data across countries on these aspects of WfD systems, the SABER-WfD tool is also enabling the accumulation of cross-country information on promising approaches to strengthen WfD systems. These benefits make the tool an important component of the World Bank's implementation strategy for its Education Strategy 2020. While it is premature to evaluate the tool's impact, the early results are positive and encourage its use to support and stimulate dialogue on the design and implementation of WfD policies.

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Appendix 1: Functional Dimensions, Policy Goals, and Actions in SABER-WfD

Policy Goal			Policy Action	Topic in DCI 2.5		
Dimension 1 Strategic Framework	G1	Setting a Strategic Direction	Provide sustained advocacy for WfD at the top leadership level	T1	Advocacy for WfD to Support Economic Development	
	G2	Fostering a Demand-Driven Approach	Establish clarity on the demand for skills and areas of critical constraint	T1	Overall Assessment of Economic Prospects and Skills Implications	
				T2	Critical Skills Constraints in Priority Economic Sectors	
			Engage employers in setting WfD priorities and in enhancing skills-upgrading for workers	T3	Role of Employers and Industry	
	G3	Strengthening Critical Coordination	Formalize key WfD roles for coordinated action on strategic priorities	T4	Skills-Upgrading Incentives for Employers	
				T5	Monitoring of the Incentive Programs	
				T1	Roles of Government Ministries and Agencies	
Dimension 2 System Oversight	G4	Ensuring Efficiency and Equity in Funding	Provide stable funding for effective programs in initial, continuing and targeted vocational education and training	T2	Roles of Non-Government WfD Stakeholders	
				T3	Coordination for the Implementation of Strategic WfD Measures	
				T4	Overview of Funding for WfD	
	G5	Assuring Relevant and Reliable Standards		T2	Recurrent Funding for Initial Vocational Education and Training (IVET)	
		Monitor and enhance equity in funding for training	T3	Recurrent Funding for Continuing Vocational Education and Training Programs (CVET)		
			T4	Recurrent Funding for Training-related Active Labor Market Programs (ALMPs)		
			T5	Equity in Funding for Training Programs		
		Facilitate sustained partnerships between training institutions and employers	T6	Partnerships between Training Providers and Employers		
			T1	Competency Standards and National Qualifications Frameworks		
			T2	Competency Standards for Major Occupations		
			T3	Occupational Skills Testing		
			T4	Skills Testing and Certification		
			T5	Skills Testing for Major Occupations		
Dimension 3 Service Delivery	G6	Diversifying Pathways for Skills Acquisition	Broaden the scope of competency standards as a basis for developing qualifications frameworks	T6	Government Oversight of Accreditation	
				T7	Establishment of Accreditation Standards	
				T8	Accreditation Requirements and Enforcement of Accreditation Standards	
				T9	Incentives and Support for Accreditation	
			Develop and enforce accreditation standards for maintaining the quality of training provision	T1	Learning Pathways	
				T2	Public Perception of Pathways for TVET	
	G7	Enabling Diversity and Excellence in Training Provision		T3	Articulation of Skills Certification	
				T4	Recognition of Prior Learning	
		Promote educational progression and permeability through multiple pathways, including for TVET students	T5	Support for Further Occupational and Career Development		
			T6	Training-related Provision of Services for the Disadvantaged		
			T1	Scope and Formality of Non-State Training Provision		
			T2	Incentives for Non-State Providers		
Dimension 3 Service Delivery	G8	Fostering Relevance in Public Training Programs	Encourage and regulate non-state provision of training	T3	Quality Assurance of Non-State Training Provision	
				T4	Review of Policies towards Non-State Training Provision	
				T5	Targets and Incentives for Public Training Institutions	
			Combine incentives and autonomy in the management of public training institutions	T6	Autonomy and Accountability of Public Training Institutions	
				T7	Introduction and Closure of Public Training Programs	
				T1	Links between Training Institutions and Industry	
	G9	Enhancing Evidence-based Accountability for Results	Integrate industry and expert input into the design and delivery of public training programs	T2	Industry Role in the Design of Program Curricula	
				T3	Industry Role in the Specification of Facility Standards	
				T4	Links between Training and Research Institutions	
			Recruit and support administrators and instructors for enhancing the market-relevance of public training programs	T5	Recruitment and In-Service Training of Heads of Public Training Institutions	
				T6	Recruitment and In-Service Training of Instructors of Public Training Institutions	
				T1	Administrative Data from Training Providers	
			Expand the availability and use of policy-relevant data for focusing providers' attention on training outcomes, efficiency and innovation	T2	Survey and Other Data	
				T3	Use of Data to Monitor and Improve Program and System Performance	

Appendix 2: Examples of Benchmarking Rubrics for Topic-Level Data

Functional Dimension 1					
Policy Goal	Topic	Level of Development			
		Latent	Emerging	Established	Advanced
Policy Goal 1: Setting a Strategic Direction for WfD	G1_T1: Advocacy for WfD to Support Economic Development	No visible champions advocate for WfD to support economic development.	Some visible champions advocate for WfD to support economic development on an ad-hoc and limited basis.	Government leaders exercise sustained advocacy for WfD with support from non-government leaders , and collaborate on the WfD policy agenda for selected industries or economic sectors .	Both government and non-government leaders exercise sustained advocacy for WfD, and rely on routine, institutionalized processes to collaborate on an economy-wide WfD policy agenda .
	G1_T2: Strategic Focus and Decisions by the WfD Champions	WfD champions have taken no specific action to advance strategic WfD priorities.	WfD champions have taken specific action on strategic WfD priorities through a few interventions , but no arrangements exist to monitor and review implementation progress.	WfD champions have taken specific action on strategic WfD priorities through a range of interventions , and implementation progress is monitored, albeit through ad-hoc reviews .	WfD champions have taken specific action on strategic WfD priorities through a well-integrated range of interventions , and implementation progress is monitored through routine, systematic reviews .

Functional Dimension 1					
Policy Goal	Topic	Level of Development			
		Latent	Emerging	Established	Advanced
Policy Goal 2: Fostering a Demand-Driven Approach to WfD	G2_T1: Overall Assessment of Economic Prospects and Skills Implications	There is limited or no formal assessment of the country's economic prospects and their implications for skills.	Either the government or other WfD stakeholders conduct occasional assessments of the country's economic prospects and skills implications for a few industries , based on limited data .	Both the government and other WfD stakeholders conduct routine assessments of the country's economic prospects and skills implications for key growth sectors , based on multiple data sources .	The government and other WfD stakeholders, as well as independent organizations conduct routine assessments of the country's economic prospects and economy-wide skills implications , based on comprehensive data .

Functional Dimension 2

Policy Goal	Topic	Level of Development			
		Latent	Emerging	Established	Advanced
Policy Goal 2: Fostering a Demand-Driven Approach to WfD	G2_T2: Critical Skills Constraints in Priority Economic Sectors	The government or WfD stakeholders have not identified critical skills constraints in priority economic sectors.	The government or WfD stakeholders have identified critical skills constraints in priority economic sectors on the basis of ad hoc assessments ; measures to address the identified constraints are limited to the reform of existing courses .	The government or WfD stakeholders have identified critical skills constraints in the key priority economic sectors, based on formal, well-informed assessments; selected measures are being taken to address the skills constraints (e.g., reforming existing courses, dedicated budgets); WfD champions are associated with these measures to some extent .	The government or WfD stakeholders have identified critical skills constraints in the key priority economic sectors, based on formal, well-informed assessments; a wide range of measures to address the skills constraints benefit from visible and sustained support from WfD champions .
	G2_T3: Role of Employers and Industry	Industry/employers have limited or no role in defining strategic WfD priorities.	Industry/employers help define WfD priorities on an ad-hoc basis and are making limited contributions to address skills implications of major policy/investment decisions.	Industry/employers help define WfD priorities on a routine basis and are making some contributions in selected areas to address skills implications of major policy/investment decisions.	Industry/employers help define WfD priorities on a routine basis and are making significant contributions in multiple areas to address skills implications of major policy/investment decisions.
	G2_T4: Skills-upgrading Incentives for Employers	The government provides no incentives for formal and informal sector employers to develop and upgrade skills.	The government provides some incentives for skills upgrading for formal and informal sector employers. The levy-grant scheme, if included, is of limited coverage .	The government provides a range of incentives for skills upgrading for formal and informal sector employers, including a levy-grant scheme with broad coverage .	The government provides a range of incentives for skills upgrading for formal and informal sector employers, including a levy-grant scheme with comprehensive coverage for which an annual report is available.
	G2_T5: Monitoring of the Incentive Programs	There is no evidence of reviews of incentive programs to encourage skills upgrading by employers.	Incentive programs to encourage skills upgrading by employers are reviewed for impact, albeit not systematically .	Incentive programs to encourage skills upgrading by employers are systematically reviewed for impact; adjustments are made to the programs following the reviews, with a limited focus on skills and productivity .	Incentive programs to encourage skills upgrading by employers are systematically reviewed for impact; adjustments are made to the programs following the reviews, with an explicit focus on skills and productivity .

Appendix 3: Composite Rubrics for the Policy Actions

Functional Dimension 1: Strategic Framework

Policy Goal	Policy Action	Level of Development			
		Latent	Emerging	Established	Advanced
G1: Articulating a Strategic Direction	Provide sustained advocacy for WfD at the top leadership level	Visible champions for WfD are either absent or take no specific action to advance strategic WfD priorities.	Some visible champions provide ad-hoc advocacy for WfD and have acted on few interventions to advance strategic WfD priorities; no arrangements exist to monitor and review implementation progress.	Government leaders exercise sustained advocacy for WfD with occasional, ad-hoc participation from non-government leaders ; their advocacy focuses on selected industries or economic sectors and manifests itself through a range of specific interventions; implementation progress is monitored, albeit through ad-hoc reviews.	Both government and non-government leaders exercise sustained advocacy for WfD, and rely on routine, institutionalized processes to collaborate on well-integrated interventions to advance a strategic, economy-wide WfD policy agenda; implementation progress is monitored and reviewed through routine, institutionalized processes.

Functional Dimension 1: Strategic Framework

Policy Goal	Policy Action	Level of Development			
		Latent	Emerging	Established	Advanced
G2: Fostering a Demand-Driven Approach to WfD	Establish clarity on the demand for skills and areas of critical constraint	There is limited or no formal assessment of the country's economic prospects and their implications for skills; thus critical skills constraints have not been identified .	Either the government or other WfD stakeholders conduct occasional assessments of the country's economic prospects and skills implications for a few industries, based on limited data sources; some critical skills constraints have been identified through ad-hoc assessments and measures to address these constraints are limited (e.g., reform of existing training courses).	Both the government and other WfD stakeholders conduct routine assessments of the country's economic prospects and skills implications for key growth sectors , based on multiple data sources; critical skills constraints have been identified through formal, well-informed assessments; selected measures (e.g., reform of existing courses, dedicated budgets), supported to some extent by WfD champions, are taken to address the identified skills constraints.	The government and other WfD stakeholders, as well as independent organizations conduct routine assessments of the country's economic prospects and economy-wide skills implications, based on comprehensive data sources; critical skills constraints have been identified through formal, well-informed assessments; a wide range of measures, benefitting from visible and sustained support from WfD champions, are taken to address the identified skills constraints.

Functional Dimension 1: Strategic Framework

Policy Goal	Policy Action	Level of Development			
		Latent	Emerging	Established	Advanced
G2: Fostering a Demand-Driven Approach to WfD	Engage employers in setting WfD priorities and in enhancing skills-upgrading for workers	Industry/employers have limited or no role in defining strategic WfD priorities; the government either provides no incentives to encourage skills upgrading by employers or conducts no reviews of such incentive programs.	Industry/employers help define WfD priorities on an ad-hoc basis and make limited contributions to address skills implications of major policy/investment decisions; the government provides some incentives for skills upgrading for formal and informal sector employers; if a levy-grant scheme exists its coverage is limited ; incentive programs are not systematically reviewed for impact.	Industry/employers help define WfD priorities on a routine basis and make some contributions in selected areas to address the skills implications of major policy/investment decisions; the government provides a range of incentives for skills upgrading for all employers; a levy-grant scheme with broad coverage of formal sector employers exists; incentive programs are systematically reviewed and adjusted ; an annual report on the levy-grant scheme is published with a time lag .	Industry/employers help define WfD priorities on a routine basis and make significant contributions in multiple areas to address the skills implications of major policy/investment decisions; the government provides a range of incentives for skills upgrading for all employers; a levy-grant scheme with comprehensive coverage of formal sector employers exists; incentive programs to encourage skills upgrading are systematically reviewed for impact on skills and productivity and are adjusted accordingly ; an annual report on the levy-grant scheme is published in a timely fashion .

Functional Dimension 1: Strategic Framework

Policy Goal	Policy Action	Level of Development			
		Latent	Emerging	Established	Advanced
G3: Strengthening Critical Coordination for Implementation	Formalize key WfD roles for coordinated action on strategic priorities	Government ministries and agencies responsible for WfD have overlapping mandates and no mechanisms exist for coordinating WfD strategies and programs; non-government WfD stakeholders have no legally-defined roles and responsibilities .	Government ministries and agencies responsible for WfD have overlapping mandates and rely on ad-hoc mechanisms for coordination; non-government WfD stakeholders have no legally-defined roles and responsibilities and coordinate with government through ad-hoc mechanisms ; strategic WfD measures are accompanied by an implementation plan and budget with ad-hoc monitoring of progress .	Government ministries and agencies responsible for WfD have overlapping mandates in a few areas and rely on institutionalized mechanisms for coordination; a few non-government WfD stakeholders have legally-defined roles and responsibilities and coordinate with government through institutionalized mechanisms ; strategic WfD measures are accompanied by an implementation plan and budget with routine monitoring of progress .	Government ministries and agencies responsible for WfD have well defined mandates with hardly any overlap and rely on institutionalized mechanisms for coordination; key non-government WfD stakeholders have legally-defined roles and responsibilities and coordinate with government through institutionalized mechanisms ; strategic WfD measures are accompanied by an implementation plan and budget with routine monitoring of progress and successful features are mainstreamed into the WfD system.

Functional Dimension 2: System Oversight

Policy Goal	Policy Action	Level of Development			
		Latent	Emerging	Established	Advanced
G4: Ensuring Efficiency and Equity in Funding	Provide stable funding for effective programs in initial, continuing and targeted vocational education and training	Government officials determine funding for IVET, CVET and ALMPs based on ad-hoc budgeting processes; there are no government supported programs for OJT in SMEs; ALMPs are implemented through limited arrangements.	Budgeting processes for IVET is routine but based largely on the previous year's budget ; recurrent funding for CVET (including OJT in SMEs) relies on formal processes involving only government officials ; funding for ALMPs is determined through an ad-hoc process involving only government officials and targets selected population groups through a variety of implementation arrangements.	Budgeting processes for IVET is routine and based on multiple criteria that are occasionally reviewed ; recurrent funding for CVET (including OJT in SMEs) relies on formal processes involving government officials with input from key stakeholders and annual reporting with a lag ; funding for ALMPs is determined through a systematic process involving government officials with key stakeholders and targets diverse population groups through a variety of implementation arrangements; programs are reviewed for impact with limited follow-up.	Budgeting processes for IVET is routine and based on comprehensive criteria that are routinely reviewed and adjusted ; recurrent funding for CVET (including OJT in SMEs) relies on formal processes involving government officials with input from key stakeholders and timely annual reporting ; funding for ALMPs is determined through a systematic process involving government officials with key stakeholders and targets diverse population groups through a variety of implementation arrangements; programs are reviewed for impact and adjusted accordingly.

Functional Dimension 2: System Oversight

Policy Goal	Policy Action	Level of Development			
		Latent	Emerging	Established	Advanced
G4: Ensuring Efficiency and Equity in Funding	Monitor and enhance equity in funding for training	There are no recent formal reviews of the impact of funding on the beneficiaries of training programs.	Recent reviews considered the impact of funding on training beneficiaries, focusing mostly on training-related outcomes (e.g. enrollment, completion); the reviews stimulated dialogue among some WfD stakeholders.	Recent reviews considered the impact of funding on training beneficiaries focusing on both training-related and labor market outcomes ; the reviews stimulated dialogue among WfD stakeholders and some recommendations were implemented .	Recent reviews considered the impact of funding on training beneficiaries focusing on a full range of training-related and labor market outcomes ; the reviews stimulated broad-based dialogue among WfD stakeholders and key recommendations were implemented .

Functional Dimension 2: System Oversight

Policy Goal	Policy Action	Level of Development			
		Latent	Emerging	Established	Advanced
G4: Ensuring Efficiency and Equity in Funding	Facilitate sustained partnerships between training institutions and employers	The government does not facilitate formal partnerships between training providers and employers.	The government facilitates formal partnerships between individual training providers and employers, generating some benefits for both parties.	The government facilitates formal partnerships between training providers and employers at the institutional as well as at the regional or national levels, generating a range of mutual benefits for both parties.	The government facilitates formal partnerships between training providers and employers at all levels (institutional, regional, national), generating a broad range of mutual benefits for both parties and for the system as a whole .

Functional Dimension 2: System Oversight

Policy Goal	Policy Action	Level of Development			
		Latent	Emerging	Established	Advanced
G5: Assuring Relevant and Reliable Standards	Broaden the scope of competency standards as a basis for developing qualifications frameworks	Competency standards have not been defined ; policy dialogue on competency standards and/or the NQF is limited and occurs on an ad-hoc basis with limited engagement of stakeholders; training providers do not follow competency-based curricula.	Competency standards exist for a few occupations ; policy dialogue on competency standards and/or the NQF engages a few stakeholders and occurs on an ad-hoc basis ; some training providers offer programs utilizing competency-based curricula .	Competency standards exist for most occupations ; policy dialogue on competency standards and/or the NQF engages numerous stakeholders and occurs through institutionalized processes ; the NQF, if in place, covers a few occupations and a limited range of skill levels; some training providers offer programs utilizing competency-based curricula .	Competency standards exist for most occupations ; policy dialogue on competency standards and/or the NQF engages all key stakeholders and occurs through institutionalized processes ; the NQF, if in place, covers most occupations and a wide range of skill levels; training providers offer programs utilizing competency-based curricula aligned to the agreed standards.

Functional Dimension 2: System Oversight

Policy Goal	Policy Action	Level of Development			
		Latent	Emerging	Established	Advanced
G5: Assuring Relevant and Reliable Standards	Establish protocols for assuring the credibility of skills testing and certification	Skills testing for major occupations is mainly theory-based ; certificates awarded have little impact on employment and earnings and are only recognized by public sector employers .	Skills testing for major occupations is mainly theory-based ; competency-based testing is used to certify qualifications in a few skilled and semi-skilled occupations ; certificates awarded are recognized by public and some private sector employers and have little impact on employment and earnings.	Skills testing for major occupations assess both theoretical knowledge and practical skills ; competency-based testing follows standardized procedures and is widely used in most skilled and semi-skilled occupations ; certificates awarded are recognized by both public and private sector employers and may impact employment and earnings.	Skills testing for major occupations assess both theoretical knowledge and practical skills ; competency-based testing follows robust protocols for assuring credibility, including random audits, and is widely used in most skilled and semi-skilled occupations ; certificates awarded are valued by both public and private sector employers and consistently improve employment prospects and earnings.

Functional Dimension 2: System Oversight

Policy Goal	Policy Action	Level of Development			
		Latent	Emerging	Established	Advanced
G5: Assuring Relevant and Reliable Standards	Develop and enforce accreditation standards for maintaining the quality of training provision	No system is in place to establish accreditation standards.	A designated office in the ministry is responsible for defining accreditation standards; standards are not consistently publicized or enforced ; some incentives are offered to seek and retain accreditation and only private providers are required to do so.	An accreditation agency is responsible for defining accreditation standards with stakeholder input ; standards are reviewed on an ad-hoc basis and are publicized or enforced to some extent ; training providers are offered incentives and limited support to seek and retain accreditation and all training providers receiving public funding are required to do so.	An accreditation agency is responsible for defining accreditation standards through consultation with stakeholders ; standards are reviewed following established protocols and are publicized and enforced to a large extent ; training providers are offered incentives and support to seek and retain accreditation and all training providers are required to do so.

Functional Dimension 2: System Oversight

Policy Goal	Policy Action	Level of Development			
		Latent	Emerging	Established	Advanced
G6: Diversifying Pathways for Skills Acquisition	Promote educational progression and permeability through multiple pathways, including for TVET students	Students in technical and vocational education have limited or no options for further formal skills acquisition beyond the secondary level and the government takes no action to improve public perception of TVET.	Students in technical and vocational education can only progress to vocationally-oriented, non-university programs ; the government takes limited action to improve public perception of TVET, including efforts to diversify learning pathways.	Students in technical and vocational education can progress to vocationally-oriented programs, including at the university level ; the government takes some action to improve public perception of TVET, including efforts to diversify learning pathways, which are reviewed for impact on an ad-hoc basis.	Students in technical and vocational education can progress to academically or vocationally-oriented programs, including at the university level ; the government takes coherent action on multiple fronts to improve public perception of TVET, including efforts to diversify learning pathways, which are reviewed for impact on an routine basis and adjusted accordingly.

Functional Dimension 2: System Oversight

Policy Goal	Policy Action	Level of Development			
		Latent	Emerging	Established	Advanced
G6: Diversifying Pathways for Skills Acquisition	Facilitate life-long learning through articulation of skills certification and recognition of prior learning	Certificates for technical and vocational programs are not recognized in the NQF; qualifications certified by non-Education ministries are not recognized by formal programs under the Ministry of Education; recognition of prior learning receives limited attention.	Some certificates for technical and vocational programs are recognized in the NQF; few qualifications certified by non-Education ministries are recognized by formal programs under the Ministry of Education; policymakers pay some attention to the recognition of prior learning and provide the public with some information on the subject.	Most certificates for technical and vocational programs are recognized in the NQF; a large number of qualifications certified by non-Education ministries are recognized by formal programs under the Ministry of Education albeit without the granting of credits; policymakers pay some attention to the recognition of prior learning and provide the public with some information on the subject and there is a formal association of stakeholders dedicated to adult learning issues.	Most certificates for technical and vocational programs are recognized in the NQF; a large number of qualifications certified by non-Education ministries are recognized and granted credits by formal programs under the Ministry of Education; policymakers pay sustained attention to the recognition of prior learning and provide the public with comprehensive information on the subject and there is a national organization of stakeholders dedicated to adult learning issues.

Functional Dimension 2: System Oversight

Policy Goal	Policy Action	Level of Development			
		Latent	Emerging	Established	Advanced
G6: Diversifying Pathways for Skills Acquisition	Provide support services for skills acquisition by workers, job-seekers and the disadvantaged	The government provides practically no support for further occupational and career development, or training programs for disadvantaged populations.	The government supports a limited menu of services for further occupational and career development, which are available through stand-alone local service units or centers; training programs targeted to disadvantaged populations receive ad-hoc support.	The government supports a limited menu of services for further occupational and career development, which are available through an integrated network of centers; training programs targeted to disadvantaged populations receive systematic support and are reviewed for impact on an ad-hoc basis.	The government supports a comprehensive menu of services for further occupational and career development, including online resources , which are available through an integrated network of centers; training programs targeted to disadvantaged populations receive systematic support with multi-year budgets and are routinely reviewed and adjusted accordingly.

Functional Dimension 3: Service Delivery

Policy Goal	Policy Action	Level of Development			
		Latent	Emerging	Established	Advanced
G7: Enabling Diversity and Excellence in Training Provision	Encourage and regulate non-state provision of training	Training occurs through state provision only .	Non-state providers offer training, but few are registered and licensed; the government provides limited incentives to encourage non-state training provision and limited measures are in place to assure its quality; the government conducts occasional reviews of its policies on non-state training provision.	Non-state providers offer training and some are registered and licensed; the government provides a range of financial and non-financial incentives to encourage non-state training provision and takes systematic measures to assure its quality including some measures targeted to lagging institutions; the government conducts routine reviews of its policies on non-state training provision.	A diversity of non-state providers offer training and most are registered and licensed; the government provides comprehensive financial and non-financial incentives to encourage non-state training provision and takes systematic, robust measures, including regular reporting and random audits, to assure its quality; multiple measures are taken to address quality issues in lagging institutions; the government conducts routine reviews of its policies and adjusts them accordingly.

Functional Dimension 3: Service Delivery

Policy Goal	Policy Action	Level of Development			
		Latent	Emerging	Established	Advanced
G7: Enabling Diversity and Excellence in Training Provision	Combine incentives and autonomy in the management of public training institutions	Public training institutions have limited or no autonomy and performance targets are not specified ; the government approves and closes programs on the basis of ad-hoc processes that are not well-informed .	Public training institutions have some autonomy; some are governed by a management board, and are allowed to generate revenues; public training institutions are expected to achieve basic targets and are rewarded for doing so; the government uses ad-hoc processes informed by some assessment of implementation constraints (e.g. funding, capacity) to open and close programs.	Public training institutions have some autonomy including over some aspects of staffing; most are governed by a management board, and some are allowed to generate revenues; public training institutions are expected to and rewarded for achieving basic targets , with poor performing institutions receiving support ; the government uses systematic processes informed by some assessment of implementation constraints (e.g. funding, capacity) as well as formal analysis and stakeholder input to open and close programs.	Public training institutions have significant autonomy over admissions, operations and staffing; most are governed by a management board and generate revenues; public training institutions are incentivized to achieve a variety of targets through performance-based funding , public recognition and the closure of poor-performing programs ; the government uses systematic and time-bound processes informed by assessment of implementation constraints (e.g. funding, capacity) as well as formal analysis and stakeholder input to open and close programs.

Functional Dimension 3: Service Delivery

Policy Goal	Policy Action	Level of Development			
		Latent	Emerging	Established	Advanced
G8: Fostering Relevance in Public Training Programs	Integrate industry and expert input into the design and delivery of public training programs	Weak or no links exist between training institutions and industry and research institutions.	Informal links exist between training institutions and industry and research institutions; industry provides inputs on an informal basis into the design of program curricula and facility standards for publicly-funded training programs in some institutions.	Formal links exist between some training institutions and industry leading to collaboration in several areas; industry provides inputs through formal processes into the design of program curricula and facility standards for publicly-funded training programs in some institutions; formal links exist between training and research institutions.	Formal links exist between most training institutions and industry leading to significant collaboration in a wide range of areas; industry provides inputs through formal processes into the design of program curricula and facility standards for publicly-funded training programs in most institutions; formal links exist between training and research institutions leading to significant collaboration.

Functional Dimension 3: Service Delivery

Policy Goal	Policy Action	Level of Development			
		Latent	Emerging	Established	Advanced
G8: Fostering Relevance in Public Training Programs	Recruit and support administrators and instructors for enhancing the market-relevance of public training programs	Heads and instructors of public training institutions are not recruited on the basis of explicit standards ; they have few or no opportunities for in-service training.	Heads and instructors of public training institutions are recruited on the basis of minimum academic qualifications and they have some, albeit limited , opportunities for in-service training.	Heads and instructors of public training institutions are recruited on the basis of minimum academic qualifications in addition to industry or teaching experience , and receive regular in-service training.	Heads of public training institutions are recruited on the basis of minimum academic qualifications in addition to industry or teaching experience and receive regular, highly diverse in-service training; instructors are recruited on the basis of minimum academic qualifications in addition to industry and teaching experience , and have opportunities for regular in-service training, including periodic industry attachments .

Functional Dimension 3: Service Delivery

Policy Goal	Policy Action	Level of Development			
		Latent	Emerging	Established	Advanced
ce-based Accou	Expand the availability	There are no specific data collection and reporting requirements , but training providers maintain their own	Training providers collect and report administrative data and there are significant gaps in	Training providers collect and report administrative and other data (e.g., job placement statistics,	Training providers collect and report administrative and other data (e.g., job placement statistics,

and use of policy-relevant data for focusing providers' attention on training outcomes, efficiency and innovation

databases; the government **does not conduct or sponsor** skills-related surveys or impact evaluations and **rarely** uses data to monitor and improve system performance.

reporting by non-state providers; **some** public providers issue annual reports and the government **occasionally** sponsors or conducts skills-related surveys; the government **does not consolidate data** in a system-wide database and uses **mostly administrative data** to monitor and improve system performance; the government publishes information on graduate labor market outcomes for **some** training programs.

earnings of graduates) and there are **some** gaps in reporting by non-state providers; **most** public providers issue internal annual reports and the government **routinely** sponsors skills-related surveys; the government consolidates data in a **system-wide database** and uses administrative data and information from **surveys** to monitor and improve system performance; the government publishes information on graduate labor market outcomes for **numerous** training programs.

earnings of graduates) and there are **few** gaps in reporting by non-state providers; **most** public providers issue **publicly available** annual reports and the government **routinely** sponsors or conducts skills-related surveys and impact evaluations; the government consolidates data in a **system-wide, up to date database** and uses administrative data, information from **surveys** and **impact evaluations** to monitor and improve system performance; the government publishes information on graduate labor market outcomes for **most** training programs **online**.

Appendix 4: Composite Rubrics for the Policy Goals

Functional Dimension 1: Strategic Framework

Policy Goal	Level of Development			
	Latent	Emerging	Established	Advanced
G1: Setting a Strategic Direction for WfD	Visible champions for WfD are either absent or take no specific action to advance strategic WfD priorities.	Some visible champions provide <i>ad-hoc</i> advocacy for WfD and have acted on few interventions to advance strategic WfD priorities; no arrangements exist to monitor and review implementation progress.	Government leaders exercise sustained advocacy for WfD with occasional, ad-hoc participation from non-government leaders ; their advocacy focuses on selected industries or economic sectors and manifests itself through a range of specific interventions; implementation progress is monitored, albeit through <i>ad-hoc</i> reviews.	Both government and non-government leaders exercise sustained advocacy for WfD, and rely on routine, institutionalized processes to collaborate on well-integrated interventions to advance a strategic, economy-wide WfD policy agenda; implementation progress is monitored and reviewed through routine, institutionalized processes.

Functional Dimension 1: Strategic Framework

Policy Goal	Level of Development			
	Latent	Emerging	Established	Advanced
G2: Fostering a Demand-Led Approach to WfD	There is no assessment of the country's economic prospects and their implications for skills; industry and employers have a limited or no role in defining strategic WfD priorities and receive limited support from the government for skills upgrading.	Some <i>ad-hoc</i> assessments exist on the country's economic prospects and their implications for skills; some measures are taken to address critical skills constraints (e.g., incentives for skills upgrading by employers); the government makes limited efforts to engage employers as strategic partners in WfD.	Routine assessments based on multiple data sources exist on the country's economic prospects and their implications for skills; a wide range of measures with broad coverage are taken to address critical skills constraints; the government recognizes employers as strategic partners in WfD, formalizes their role, and provides support for skills upgrading through incentive schemes that are reviewed and adjusted .	A rich array of routine and robust assessments by multiple stakeholders exists on the country's economic prospects and their implications for skills; the information provides a basis for a wide range of measures with broad coverage that address critical skills constraints; the government recognizes employers as strategic partners in WfD, formalizes their role, and provides support for skills upgrading through incentives, including some form of a levy-grant scheme , that are systematically reviewed for impact and adjusted accordingly.

Functional Dimension 1: Strategic Framework

Policy Goal	Level of Development			
	Latent	Emerging	Established	Advanced
G3: Strengthening Critical Coordination for Implementation	Industry/employers have a limited or no role in defining strategic WfD priorities; the government either provides no incentives to encourage skills upgrading by employers or conducts no reviews of such incentive programs.	Industry/employers help define WfD priorities on an <i>ad-hoc</i> basis and make limited contributions to address skills implications of major policy/investment decisions; the government provides some incentives for skills upgrading for formal and informal sector employers; if a levy-grant scheme exists its coverage is limited ; incentive programs are not systematically reviewed for impact.	Industry/employers help define WfD priorities on a routine basis and make some contributions in selected areas to address the skills implications of major policy/investment decisions; the government provides a range of incentives for skills upgrading for all employers; a levy-grant scheme with broad coverage of formal sector employers exists; incentive programs are systematically reviewed and adjusted ; an annual report on the levy-grant scheme is published with a time lag .	Industry/employers help define WfD priorities on a routine basis and make significant contributions in multiple areas to address the skills implications of major policy/investment decisions; the government provides a range of incentives for skills upgrading for all employers; a levy-grant scheme with comprehensive coverage of formal sector employers exists; incentive programs to encourage skills upgrading are systematically reviewed for impact on skills and productivity and are adjusted accordingly; an annual report on the levy-grant scheme is published in a timely fashion .

Functional Dimension 2: System Oversight

Policy Goal	Level of Development			
	Latent	Emerging	Established	Advanced
G4: Ensuring Efficiency and Equity in Funding	The government funds IVET, CVET and ALMPs (but not OJT in SMEs) based on <i>ad-hoc</i> budgeting processes, but takes no action to facilitate formal partnerships between training providers and employers; the impact of funding on the beneficiaries of training programs has not been recently reviewed .	The government funds IVET, CVET (including OJT in SMEs) and ALMPs; funding for IVET and CVET follows routine budgeting processes involving only government officials with allocations determined largely by the previous year's budget ; funding for ALMPs is decided by government officials on an <i>ad-hoc</i> basis and targets select population groups through various channels; the government takes some action to facilitate formal partnerships between individual training providers and employers; recent reviews considered the impact of funding on only training-related indicators (e.g. enrollment, completion), which stimulated dialogue among some WfD stakeholders.	The government funds IVET, CVET (including OJT in SMEs) and ALMPs; funding for IVET is routine and based on multiple criteria, including evidence of program effectiveness; recurrent funding for CVET relies on formal processes with input from key stakeholders and annual reporting with a lag ; funding for ALMPs is determined through a systematic process with input from key stakeholders; ALMPs target diverse population groups through various channels and are reviewed for impact but follow-up is limited ; the government takes action to facilitate formal partnerships between training providers and employers at multiple levels (institutional and systemic); recent reviews considered the impact of funding on both training-related indicators and labor market outcomes; the reviews stimulated dialogue among WfD stakeholders and some recommendations were implemented.	The government funds IVET, CVET (including OJT in SMEs) and ALMPs; funding for IVET is routine and based on comprehensive criteria, including evidence of program effectiveness, that are routinely reviewed and adjusted ; recurrent funding for CVET relies on formal processes with input from key stakeholders and timely annual reporting ; funding for ALMPs is determined through a systematic process with input from key stakeholders; ALMPs target diverse population groups through various channels and are reviewed for impact and adjusted accordingly; the government takes action to facilitate formal partnerships between training providers and employers at all levels (institutional and systemic); recent reviews considered the impact of funding on a full range of training-related indicators and labor market outcomes; the reviews stimulated broad-based dialogue among WfD stakeholders and key recommendations were implemented.

Functional Dimension 2: System Oversight

Policy Goal	Level of Development			
	Latent	Emerging	Established	Advanced
G5: Assuring Relevant and Reliable Standards	<p>Policy dialogue on competency standards and/or the NQF occurs on an <i>ad-hoc</i> basis with limited engagement of key stakeholders; competency standards have not been defined; skills testing for major occupations is mainly theory-based and certificates awarded are recognized by public sector employers only and have little impact on employment and earnings; no system is in place to establish accreditation standards.</p>	<p>A few stakeholders engage in <i>ad-hoc</i> policy dialogue on competency standards and/or the NQF; competency standards exist for a few occupations and are used by some training providers in their programs; skills testing is competency-based for a few occupations but for the most part is mainly theory-based; certificates are recognized by public and some private sector employers but have little impact on employment and earnings; the accreditation of training providers is supervised by a dedicated office in the relevant ministry; private providers are required to be accredited, however accreditation standards are not consistently publicized or enforced; providers are offered some incentives to seek and retain accreditation.</p>	<p>Numerous stakeholders engage in policy dialogue on competency standards and/or the NQF through institutionalized processes; competency standards exist for most occupations and are used by some training providers in their programs; the NQF, if in place, covers some occupations and a range of skill levels; skills testing for most occupations follows standard procedures, is competency-based and assesses both theoretical knowledge and practical skills; certificates are recognized by both public and private sector employers and may impact employment and earnings; the accreditation of training providers is supervised by a dedicated agency in the relevant ministry; the agency is responsible for defining accreditation standards with stakeholder input; standards are reviewed on an <i>ad-hoc</i> basis and are publicized or enforced to some extent; all providers receiving public funding must be accredited; providers are offered incentives and limited support to seek and retain accreditation.</p>	<p>All key stakeholders engage in policy dialogue on competency standards and/or the NQF through institutionalized processes; competency standards exist for most occupations and are used by training providers in their programs; the NQF, if in place, covers most occupations and a wide range of skill levels; skills testing for most occupations follows standard procedures, is competency-based and assesses both theoretical knowledge and practical skills; robust protocols, including random audits, ensure the credibility of certification; certificates are valued by most employers and consistently improve employment prospects and earnings; the accreditation of training providers is supervised by a dedicated agency in the relevant ministry; the agency is responsible for defining accreditation standards in consultation with stakeholders; standards are reviewed following established protocols and are publicized and routinely enforced; all training providers are required as well as offered incentives and support to seek and retain accreditation.</p>

Functional Dimension 2: System Oversight

Policy Goal	Level of Development			
	Latent	Emerging	Established	Advanced
G6: Diversifying Pathways for Skills Acquisition	<p>Students in technical and vocational education have few or no options for further formal skills acquisition beyond the secondary level and the government takes no action to improve public perception of TVET; certificates for technical and vocational programs are not recognized in the NQF; qualifications certified by non-Education ministries are not recognized by formal programs under the Ministry of Education; recognition of prior learning receives limited attention; the government provides practically no support for further occupational and career development, or training programs for disadvantaged populations.</p>	<p>Students in technical and vocational education can only progress to vocationally-oriented, non-university programs; the government takes limited action to improve public perception of TVET (e.g. diversifying learning pathways); some certificates for technical and vocational programs are recognized in the NQF; few qualifications certified by non-Education ministries are recognized by formal programs under the Ministry of Education; policymakers pay some attention to the recognition of prior learning and provide the public with some information on the subject; the government offers limited services for further occupational and career development through stand-alone local service centers that are not integrated into a system; training programs for disadvantaged populations receive <i>ad-hoc</i> support.</p>	<p>Students in technical and vocational education can progress to vocationally-oriented programs, including at the university level; the government takes some action to improve public perception of TVET (e.g. diversifying learning pathways and improving program quality) and reviews the impact of such efforts on an <i>ad-hoc</i> basis; most certificates for technical and vocational programs are recognized in the NQF; a large number of qualifications certified by non-Education ministries are recognized by formal programs under the Ministry of Education, albeit without the granting of credits; policymakers give some attention to the recognition of prior learning and provide the public with some information on the subject; a formal association of stakeholders provides dedicated attention to adult learning issues; the government offers limited services for further occupational and career development, which are available through an integrated network of centers; training programs for disadvantaged populations receive systematic support and are reviewed for impact on an <i>ad-hoc</i> basis.</p>	<p>Students in technical and vocational education can progress to academically or vocationally-oriented programs, including at the university level; the government takes coherent action on multiple fronts to improve public perception of TVET (e.g. diversifying learning pathways and improving program quality and relevance, with the support of a media campaign) and routinely reviews and adjusts such efforts to maximize their impact; most certificates for technical and vocational programs are recognized in the NQF; a large number of qualifications certified by non-Education ministries are recognized and granted credits by formal programs under the Ministry of Education; policymakers give sustained attention to the recognition of prior learning and provide the public with comprehensive information on the subject; a national organization of stakeholders provides dedicated attention to adult learning issues; the government offers a comprehensive menu of services for further occupational and career development, including online resources, which are available through an integrated network of centers; training programs for disadvantaged populations receive systematic support with multi-year budgets and are routinely reviewed for impact and adjusted accordingly.</p>

Functional Dimension 3: Service Delivery

Policy Goal	Level of Development			
	Latent	Emerging	Established	Advanced
G7: Enabling Diversity and Excellence in Training Provision	<p>There is no diversity of training provision as the system is largely comprised of public providers with limited or no autonomy; training provision is not informed by formal assessment, stakeholder input or performance targets.</p>	<p>There is some diversity in training provision; non-state providers operate with limited government incentives and governance over registration, licensing and quality assurance; public training is provided by institutions with some autonomy and informed by some assessment of implementation constraints, stakeholder input and basic targets.</p>	<p>There is diversity in training provision; non-state training providers, some registered and licensed, operate within a range of government incentives, systematic quality assurance measures and routine reviews of government policies toward non-state training providers; public providers, mostly governed by management boards, have some autonomy; training provision is informed by formal analysis of implementation constraints, stakeholder input and basic targets; lagging providers receive support and exemplary institutions are rewarded.</p>	<p>There is broad diversity in training provision; non-state training providers, most registered and licensed, operate with comprehensive government incentives, systematic quality assurance measures and routine review and adjustment of government policies toward non-state training providers; public providers, mostly governed by management boards, have significant autonomy; decisions about training provision are time-bound and informed by formal assessment of implementation constraints; stakeholder input and use of a variety of measures to incentivize performance include support, rewards and performance-based funding.</p>

Functional Dimension 3: Service Delivery

Policy Goal	Level of Development			
	Latent	Emerging	Established	Advanced
G8: Fostering Relevance in Public Training Programs	<p>There are few or no attempts to foster relevance in public training programs through encouraging links between training institutions, industry and research institutions or through setting standards for the recruitment and training of heads and instructors in training institutions.</p>	<p>Relevance of public training is enhanced through informal links between some training institutions, industry and research institutions, including input into the design of curricula and facility standards; heads and instructors are recruited on the basis of minimum academic standards and have limited opportunities for professional development.</p>	<p>Relevance of public training is enhanced through formal links between some training institutions, industry and research institutions, leading to collaboration in several areas including but not limited to the design of curricula and facility standards; heads and instructors are recruited on the basis of minimum academic and professional standards and have regular access to opportunities for professional development.</p>	<p>Relevance of public training is enhanced through formal links between most training institutions, industry and research institutions, leading to significant collaboration in a wide range of areas; heads and instructors are recruited on the basis of minimum academic and professional standards and have regular access to diverse opportunities for professional development, including industry attachments for instructors.</p>

Functional Dimension 3: Service Delivery

Policy Goal	Level of Development			
	Latent	Emerging	Established	Advanced
G9: Enhancing Evidence-based Accountability for Results	<p>There are no specific data collection and reporting requirements, but training providers maintain their own databases; the government does not conduct or sponsor skills-related surveys or impact evaluations and rarely uses data to monitor and improve system performance.</p>	<p>Training providers collect and report administrative data and there are significant gaps in reporting by non-state providers; some public providers issue annual reports and the government occasionally sponsors or conducts skills-related surveys; the government does not consolidate data in a system-wide database and uses mostly administrative data to monitor and improve system performance; the government publishes information on graduate labor market outcomes for some training programs.</p>	<p>Training providers collect and report administrative and other data (e.g., job placement statistics, earnings of graduates) and there are some gaps in reporting by non-state providers; most public providers issue internal annual reports and the government routinely sponsors skills-related surveys; the government consolidates data in a system-wide database and uses administrative data and information from surveys to monitor and improve system performance; the government publishes information on graduate labor market outcomes for numerous training programs.</p>	<p>Training providers collect and report administrative and other data (e.g., job placement statistics, earnings of graduates) and there are few gaps in reporting by non-state providers; most public providers issue publicly available annual reports and the government routinely sponsors or conducts skills-related surveys and impact evaluations; the government consolidates data in a system-wide, up to date database and uses administrative data, information from surveys and impact evaluations to monitor and improve system performance; the government publishes information on graduate labor market outcomes for most training programs online.</p>

The Systems Approach for Better Education Results (SABER) initiative collects data on the policies and institutions of education systems around the world and benchmarks them against practices associated with student learning. SABER aims to give all parties with a stake in educational results—from students, administrators, teachers, and parents to policymakers, business people, and political leaders—an accessible, detailed, objective snapshot of how well the policies of their country's education system are oriented toward delivering learning for all children and youth.

This report focuses specifically on policies in the area of Workforce Development.

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