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Transforming Technical and Vocational Education and Training

EDUCATION ON THE MOVE

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Unleashing the Potential

Transforming Technical and Vocational Education and Training

P.T.M. Marope, B. Chakroun and K.P. Holmes

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Foreword

I am pleased to present to our readers the third book in the *Education on the Move* series. This series was created in response to demands from policy-makers, educators and other stakeholders for state-of-the-art analyses of current and future challenges in education that require serious global dialogue and decisive attention. Indeed, as the United Nations' specialized agency on education, UNESCO is at the forefront of global debates on the future of education and learning.

The Organization uses as its platforms to host such global debates World Congresses and publications such as this one. The Third International Congress on Technical and Vocational Education and Training (TVET), held in Shanghai in 2012, was a global forum for the TVET community. For this event, UNESCO commissioned experts to prepare 'think-pieces' to provide insights into wide-ranging demands on TVET systems and examples of the dynamic reforms taking place in countries around the world.

The Congress made clear that external demands on TVET systems go far beyond the familiar call for TVET to contribute to economic growth, employment and competitiveness. Today, TVET is considered to be a crucial vehicle for social equity and inclusion, as well as for the sustainability of development. Many ministries of government, the private sector and other stakeholders, including communities, families and individuals, have an interest in TVET systems responding to these broad and intersecting demands.

Given the diversity of country contexts, it is remarkable how much consensus exists around the idea that skills development through TVET is a crucial vehicle for human progress. Yet, while TVET is steadily rising to the top of policy agendas, the capacity of TVET systems to respond to multiple and elevated demands and to shape the future is often limited. Simply scaling up TVET provision in its current forms is unlikely to prove adequate or feasible. Rather, the authors of this volume argue, the rethinking of the nature and roles of TVET systems in contributing to more equitable and sustainable holistic development will require their continuous transformation and expansion.

TVET, together with literacy and higher education, is one of three priority subsectors for UNESCO in our work to foster inclusive and equitable quality education and lifelong learning opportunities for all. As well as contributing to the global debate, promoting knowledge sharing and networking, the Organization works with Member States to develop the capacities needed to review, develop and implement policies aimed at transforming TVET.

This book will be of interest to the broad TVET community and beyond. It is intended as a resource for policy-makers to analyse contextual trends and intersecting demands on education and training systems. I hope that the experience shared and the integrated analytical approach proposed will help UNESCO Member States transform their TVET systems to more effectively meet the development needs of present and future generations.

Qian Tang, Ph.D.
Assistant Director-General for Education
UNESCO

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Introduction: TVET's Race to the Top

Technical and vocational education and training (TVET) is steadily emerging as a winner in the 'race to the top' of global debates and government priorities for education and national development agendas. TVET also features high in strategic and operational priorities of regional economic communities (RECs) such as the African Union, the Caribbean Community (CARICOM) and the European Union; of other multinational groups such as the G20, the Organisation for Economic Co-operation and Development (OECD), and of multilateral organizations such as the International Labour Organization (ILO) and UNESCO. The African Union's Second Decade of Education defines TVET as a high priority area for investment for Africa. The European Union is noteworthy for its sustained and influential work and initiatives in TVET, within and beyond Europe.

In 2012 the world converged in Shanghai to debate current trends and future drivers of the development of TVET. This global dialogue culminated in the Shanghai Consensus, a key message of which is that TVET systems need sustained transformation and revitalization if TVET is to realize its enormous potential to impact development (UNESCO, 2012*a*). The triennal meeting of the Association for the Development of Education in Africa (ADEA) made an urgent call on Africa to expand its investment in technical and vocational skills development if Africa is to generate the internal growth capable of addressing the unemployment and underemployment of youth and adults, and of creating businesses, jobs and substantial economic revenue. The triennal meeting recommended that Africa put jobs and growth at the heart of policies on technical and vocational skills development (ADEA, 2012). Within the same year, the European Commission put out a Communication on *Rethinking Education: Investing in Skills for Better Socio-Economic Outcome*s, a key part of which is the 'development of world-class vocational education and training to raise the quality of vocational skills' (European Commission, 2012). The OECD also published its new skills strategy in which it acknowledged that skills have become the global currency of twenty-first century economies. The strategy also outlines a systematic and comprehensive approach towards policies for meeting the skills needs of increasingly unpredictable labour markets (OECD, 2012).

A year later in 2013, the Caribbean Community (CARICOM) articulated a *Regional TVET Strategy*, a cornerstone of which is 'sustainable economic prosperity through the creation of a globally competitive regional workforce enabled by a market-responsive education and training system' (CANTA, 2013). The G20 leaders' declaration in Saint Petersburg also underscored the need for policy reforms that support higher employment and facilitate job creation and better matching of skills with job opportunities as central to growth strategies. Among others, they committed to invest in people's skills with quality education and lifelong learning programmes to enable skill portability and better prospects, and to facilitate mobility and enhance employability (G20, 2013). In the not so distant past, the 2009 Cha-Am Hua Hin declaration encouraged ASEAN countries to develop a 'common standard of competencies for vocational and secondary education as a base for promoting mutual recognition and the set-up of national skills frameworks in ASEAN Member States as an incremental approach towards an ASEAN skills recognition framework' (ASEAN, 2009). In a similar vein as the G20 and the ASEAN States, the Southern African Development Community (SADC) is in the process of developing a Regional Qualifications Framework (RQF) that includes among its objectives the mutual recognition of qualifications, the facilitation of free movement of skilled labour and the resultant mapping of skills supply to demand (SADC and UNESCO, 2011).

While, as shown above, TVET is racing to the top of global and regional priorities, the belief in TVET's potential contribution to the addressing of multiple development challenges is not universal. At the policy level, some critics highlight TVET systems as expensive, inefficient and unresponsive. Yet, others have argued that training for specific occupations belongs in the workplace and not in education and training institutions. As such, and given the cost of TVET programmes, critics contend that the best form of 'TVET' is actually good-quality general education that makes graduates trainable in and adaptable to the workplace. Problematically, in many countries the public in general do not favour TVET, and a significant number still regard TVET as second best or even a choice of last resort. Although this negative perception is slowly changing, and it does vary within the population and between different forms of TVET, many individuals and families still find some forms of TVET unattractive relative to general secondary education and academic tertiary education programmes. This is particularly so where TVET programmes are perceived as leading to less prestigious career paths, to lower prospects for higher earnings once employed, or to lower prospects for further education and training. Albeit quite slowly, these perceptions are changing, and in some

cases, TVET offerings at the post-secondary level are considered to provide a better preparation for employment than traditional academic university programmes.

Meanwhile the disconnect between the prioritization of TVET at global and regional levels and its deprioritization by many individuals and families can frustrate collective efforts to optimize the potential of TVET to support national development agendas and to articulate it into national lifelong learning frameworks as a pathway of choice.

All the same, a range of economic, social, geopolitical, environmental, humanistic, legal and other rationales have converged to propel TVET to the top of global debates and government priorities. While recognizing that TVET has its critics and limitations, and that TVET, in its various forms, is valued differently from place to place, this book, inspired by the *Bonn Declaration* (see Box 1), underscores the economic, social equity and sustainability rationales for recognizing TVET's importance to national development. It provides evidence supporting the call for sustained transformation and revitalization of TVET.

Box 1. An inspiring vision for TVET

Since education is considered the key to effective development strategies, technical and vocational education and training (TVET) must be the master key that can alleviate poverty, promote peace, conserve the environment, improve the quality of life for all and help achieve sustainable development.

Source: UNESCO-UNEVOC (2004).

The economic rationale

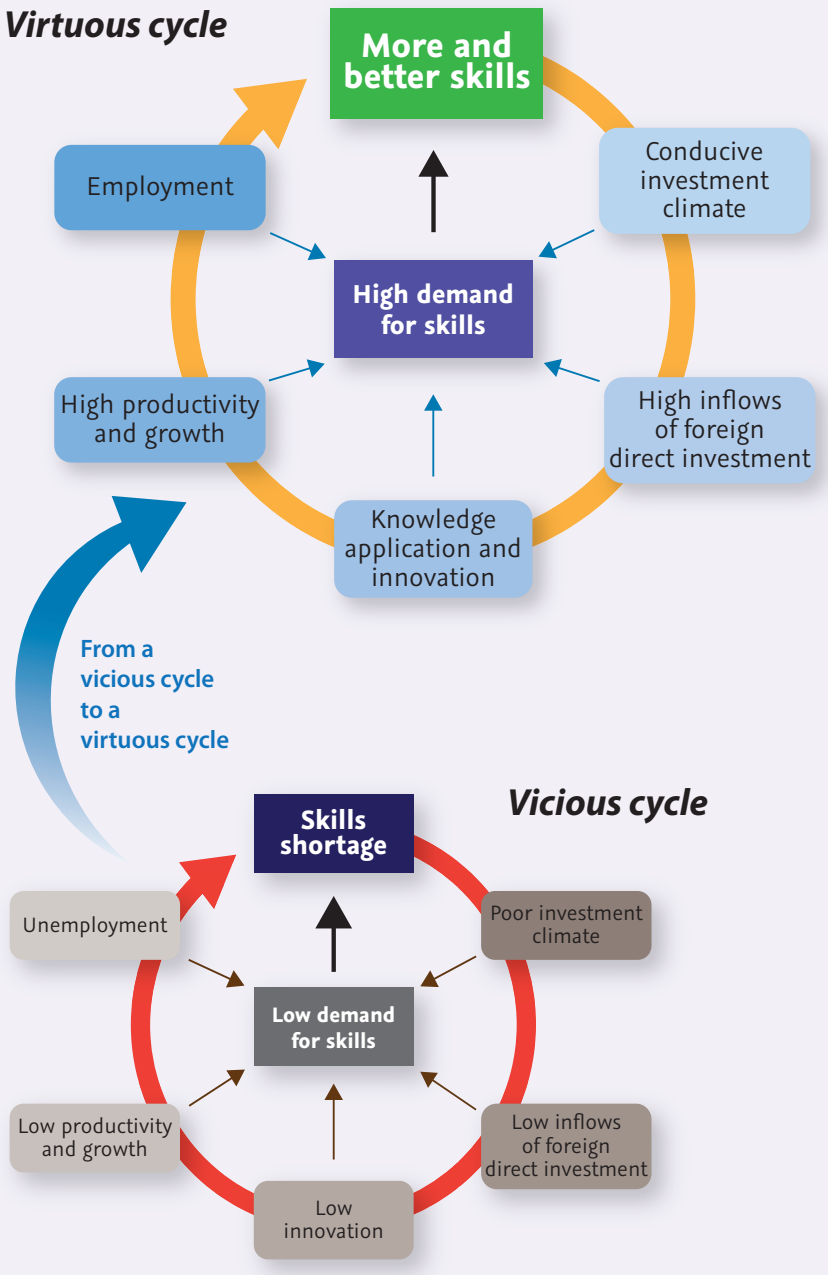
A strong economic rationale exists for investing in TVET. This rationale derives from the recognition of TVET as a source of the skills, knowledge and technology needed to drive productivity in the knowledge-based and transition societies of the twenty-first century. Productivity is the basis for sustained economic growth and wealth accumulation. Higher-level skills, knowledge and technology are indispensable for competitiveness in the global economy. Enhanced global competitiveness can lead to a better economic and political balance of power that will support global peace and stability. As indeed social equity is associated with peace and political stability at a national level (World Bank, 2005*a*), the aggregate effect is possible at a global level.

TVET has other potential economic benefits. Those with higher-level skills can also create work for those with middle to lower-level skills, thus increasing demand for the latter; and also demonstrating the complementarity of the mix of not only skill types but also skill levels (Marope, 2009). By virtue of straddling all levels of the education and training system, well-designed TVET systems can support the mix and levels of skills responsive to specific contexts. Moreover, skills can attract foreign direct investment (FDI) inflows, the backward and forward linkages of which can facilitate technology diffusion and fuel higher demand for skills, placing countries on a virtuous cycle of skills demand and supply (see Figure 1). TVET systems are therefore gaining significant attention because of their potential to contribute significantly to the development of the skilled, knowledgeable and technology-savvy people required to support higher value-added productivity; accelerated, sustained and shared growth; global competitiveness; and potentially global peace and stability through a better balance of economic power.

Beyond skilling world populations at large, TVET is accorded a high premium for its potential to equip youth with job/work-ready skills and for its potential for dealing with the global twin challenges of youth employability and unemployment. Moreover, job/work-ready skills are required to ease youths' transition from school/training to work and jobs. In 2010, one in six of the world's population were young people (aged from 15 to 24 years) and one in eight of them were unemployed (ILO, 2012*a*). Youth were three times more likely to be unemployed than adults. When they were employed, they were mostly in poor-quality and low-paying jobs. An estimated 152 million young people (a third of all young workers) earned less than US$1.25 per day (ibid.). Some 621 million youth suffered multiple disengagement from schooling, training, jobs, job-seeking (ibid.) and sometimes even family. Lack of opportunities to acquire skills for employability is one of the key reasons for high youth unemployment as well as for poor-quality and low-paying jobs. Although the functioning of national labour markets (involving factors such as rigidities, lack of transparency, and the power of established workers) is also influential, TVET systems have immense potential for creating opportunities for acquiring skills. This explains the high level of attention they have come to command.

Through its potential for employment creation, TVET can significantly contribute to addressing the second cause of youth unemployment. The slow recovery from the global economic and financial crisis of 2008 managed to cripple the ability of many countries to create good-quality jobs and work. Just to keep the ratio of employment to the working-age population constant will require about 600 million more jobs in 2020 than there were in 2005, a

Figure 1. From a vicious cycle to a virtuous cycle



Source: Marope, P. T. M. 2009. From a Vicious to a Virtuous Cycle: Global Perspectives on Skills, Innovation, Productivity and Shared Growth. Keynote address at the Big Skills Conference 2-5 March 2009. Sydney, Australia.

period of just fifteen years (ILO, 2012*a*). By 2010, the world's population of 15 to 24 year-olds had reached over 1 billion. The demographic pressure this created challenged the ability of many countries to meet the demand for employment. Because of the spatial distribution of youths, most of these jobs will have to be created in Asia and sub-Saharan Africa. By 2020, youths will constitute 26 per cent and 31 per cent of the population of the two regions respectively (Population Reference Bureau, 2013). Skills for agriculture and rural livelihoods are part of the solution, as they contribute not only to higher incomes but also to food security, as well as the health and nutrition of individuals and families in rural areas.

TVET entrepreneurship programmes combined with micro-financing can open the way to the creation of employment, especially in the informal sector, which has become a prominent feature of the economic landscape, particularly in sub-Saharan Africa (Adams et al., 2013). The uptake of employment in the informal sector tends to be predominantly by rural dwellers, women and youth. Providing skills through TVET to these groups opens the potential contribution of TVET to shared growth and inclusive development. Even when only a fraction of informal sector entrepreneurs succeed in creating a viable business with the potential to train and hire others, the aggregate effect on the employment and living standards of these marginalized groups can be substantial, since the informal sector accounts for a large share of the new jobs created off the farm. This potential impact makes a strong case for improving skills development in the informal sector and for expanding and deepening TVET entrepreneurship programmes. Interventions to support traditional apprenticeships can also be an effective and appropriate way to develop the skills needed to facilitate employment in and consolidate the informal sector. In West and Central Africa, for example, access to many trades in the informal sector is 'regulated' by local traditions and customs through apprenticeships.

Further to its potential response to the twin challenges of youth employability and unemployment, TVET systems can have the flexibility required to keep adults productive longer by keeping their skills current and by enabling them to adapt to the introduction of new production technologies in the workplace. This is especially important in contexts of ageing societies and of improving health, both of which can enable people to stay productive and hold their jobs longer. TVET, together with well-articulated standards and modularized courses that focus on the learning needs of the workplace and provide for just-in-time training, enables workers to acquire skills currently in demand. In doing so, TVET can help older workers realize their lifelong learning potential.

TVET standards and qualification frameworks are important to the efficient working of labour markets. By establishing clear qualifications and testing standards, skills can be assessed. Information about qualifications eases the movement of skilled labour within and across countries. This movement of skilled labour is particularly important, as because of the combination of demographic shifts and the differing employment-creation capacities of the world's economies, jobs are not always located where skilled labour resides. By enabling the recognition of qualifications, TVET systems can support the movement of skilled labour and thus improve the matching of labour supply and demand.

Where TVET systems are responsive to emerging markets and new modes of organizing work, they can facilitate the restructuring of labour in response to changes in demand. New modes of organizing work, which include flat structures, fast-changing task-teams, fast-changing mixes of skill types and levels, functional leadership, technology-based solutions and the outsourcing of tasks, are rapidly becoming the norm (Cheng and Marope, 2010). Fuelled by deepening globalization, these changes in the way of organizing work require agility for developing skill mixes that are equal to the task. Know-how is coming to be accorded a higher premium than positions held in organizations. Often this agility in itself depends on opportunities for just-in-time training and for the reskilling and upskilling best provided by effective TVET systems.

Because of their focused attention on work- and/or job-ready skills, effective TVET systems are valued for their attention to meeting the demands of employment and the fast-changing demands of the labour market and world of work. They typically achieve this better than general and even higher education. The relevance of the skills acquired through TVET is often enhanced by direct employer involvement in policy, strategy and programme development, delivery of training programmes, setting standards and assessing their attainment, governance and accountability structures, development of financing frameworks, financing through direct contribution and payroll levies, and in setting and observing regulatory frameworks. However, to be responsive, TVET relies heavily on the currency and accuracy of labour market information systems and on forecasts of labour market trends. These systems are not available in many countries. TVET also affects labour markets by producing graduates who have the entrepreneurial skills to create businesses, jobs and work opportunities.

TVET's potential relevance to the world of work is critical. This relevance, however, is challenged by skills mismatches, which are growing across the globe rather than shrinking. It is not uncommon for unemployment to coexist

with an unmet demand for skills alongside unfilled vacancies. For instance, in 2009, youth unemployment in Europe averaged 21.4 per cent. At the same time, about 36 per cent of firms in the European Union experienced difficulties in hiring staff for skilled jobs (Eurofound, 2010). This is common in dual economies (for example Colombia, India, Nigeria and South Africa) where structural changes in the economy fuel demand for high-level skills while delays in adjustment of the education and training system to these changes result in large proportions of job seekers without the requisite skills.

Skill-biased technological change adds to the challenge of relevance. New job growth in the immediate post-Apartheid South Africa, for example, had a distinct positive bias towards the skilled and the semi-skilled (Bhorat et al., 2002; Bhorat and Lundall, 2002*a*; Rodrik, 2006), while a disproportionately large base of job seekers was unskilled. From 1995 to 2003, the largest percentage increase (about 64 per cent) in measured employment was for the skilled. The demand for highly skilled workers significantly increased while the demand for the unskilled remained weak (Marope and Goldberg, 2009). Whatever the causes, the skills gap repeatedly surfaces in enterprise surveys as one of the critical constraints to the performance and efficiency of enterprises, especially in more dynamic environments (World Bank, 2010*a*) and in Africa's middle-income countries such as Botswana, Mauritius, Namibia and South Africa (World Economic Forum, 2008, pp. 34–35). TVET remains a hope for not only closing the skills and technology gap, but also narrowing the mismatch between the demand and supply of skills.

The social equity rationale

Although often less acknowledged than the economic rationale, TVET has a compelling social equity rationale. As noted above, TVET is a critical contributor to the human capital required for productivity, growth and wealth accumulation. Without productivity gains, it is difficult to tackle, let alone decisively eradicate, income and material poverty. Yet at the same time, productivity, growth and wealth often coexist with abject poverty and acute inequalities, at least in income and material terms. Quite often, reducing these inequalities through income redistribution and safety net programmes can be non-productive and unsustainable in the long run. Because labour is invariably the main asset of the poor, equipping them with skills, knowledge and technology not only improves the value and profitability of their main asset, but also enhances their contribution to and benefit from productivity and growth.

Expanding access to skills with TVET, especially for women, and facilitating their gainful employment is a more promising redistributive strategy. In contrast, allowing inequities in learning opportunities to persist can widen income and social inequalities, as the few with requisite skills command high salaries due to their scarcity premium, while the unskilled remain without income (Marope, 2009). The expansion of TVET opportunities that is cognisant of social diversity is therefore justifiable from a social equity perspective. Recent years have seen rising numbers of young women enrolling in TVET programmes, especially in service sector subjects. At times the challenge is to bring more males into female-dominated streams. However, beyond number games, the real gender parity test that TVET systems are yet to pass is balancing the gender participation in programmes that lead to employability, as well as to decent and high-paying jobs. Gender disparities in learning opportunities, and earnings, are a cause for concern. The persistent gender-typing of TVET requires concerted attention if TVET is to really serve a key facilitative role in shared growth, social equity and inclusive development.

The redistributive effects of TVET are not limited to tangibles such as income and material wealth. Widening TVET opportunities is a potent tool for addressing capability poverty and for a better distribution of associated intangibles such as intellectual, technical, creative, innovative, professional, social, cultural, moral, ethical and political capital. This is particularly important, as the world progressively accepts that the wealth of nations lies in intangibles (World Bank, 2006). Because of their regenerative capacity, inequities in these forms of wealth are even more challenging than those in tangible wealth (income and material), which can be redistributed operationally. Expanding opportunities for TVET can also enhance human development, for which education and training are central factors. As an educational process TVET is an enabler of other human development factors such as literacy, numeracy, health, nutrition and quality of life. Broad-based skills, knowledge and technology know-how therefore bear the promise of inclusive human development and more broadly conceived social equity.

From a human rights perspective, expanding TVET is an important means for realizing the right to equal learning opportunities. The success of the Education for All (EFA) movement in expanding access to basic education has put many countries under pressure to equitably provide opportunities for post-basic education and training as an inalienable right. If well developed, TVET could be a significant pathway to higher levels of education and training. It is, however, noteworthy that quality basic education is a prerequisite for the effective use of TVET in meeting the inalienable right to learn and to develop. Yet in 2011 some 123 million youths lacked basic literacy, which

is an entry point for further education and training (UIS, 2013). Sixty-nine million adolescents were not enrolled in junior secondary education with others of their age group (UNESCO, 2012*b*). Fifty-seven million children were not in primary education, and failing concerted interventions, were en route to becoming illiterate youth. Among those enrolled, 130 million were not acquiring competencies commensurate to their schooling because of the poor quality of their educational experience. Even in advanced economies, one in five Europeans were found to be functionally illiterate in 2012 (EU High Level Group of Experts on Literacy, 2012) and 160 million adults in OECD countries were regarded as functionally illiterate (OECD, 2009). Because of failures of the basic education system, these segments of the world's population are at risk of not being able to benefit fully from TVET's potential to realize their right to learning and development.

Refreshingly, for youth and even adults who are faced with poor-quality basic education or no chance for education at all, TVET still remains a viable avenue to their acquisition of skills for work and life. TVET systems are most advanced in the recognition of learning across formal, non-formal and informal settings, ranging from schools and training institutions, to workplaces of varying types, to even backyards of homes. Through systems for the recognition of prior learning (RPL), TVET certifies competencies acquired through diverse learning contexts, and ensures that the labour market and workplaces do not undervalue such skills for exploitative purposes and that merit is duly rewarded. Therefore, from the socio-economic perspective of knowledge and learning, TVET best responds to the age-old question, 'what knowledge is of most worth?' (Spencer, 1859). It recognizes not only the worth of diverse types of knowledge, but also diverse ways of knowing and forms of learning. Because most uncertified skills are acquired through the informal sector of the economy, and because the majority of informal sector participants are the poor, TVET's RPL systems are critical for social equity and justice. RPL systems can also recognize and consolidate the value of learning in the informal sector and wherever micro, small and medium enterprises are critical engines of growth, especially in developing countries.

The sustainability rationale

The sustainability rationale places certain demands on the economic and social equity rationales. From an economic perspective, the sustainability rationale recognizes the need to pursue sustained growth, but not to the detriment of the environment and of ecosystems. It therefore calls for sustainable

growth which ensures that future generations will continue to be able to use their environment to generate and sustain the growth required to meet their needs and enjoy a high quality of life. From a social equity perspective, the sustainability rationale propagates social equity not only at a moment in time, but as enduring. It requires the sustained sharing of growth and poverty eradication and the breaking of the intergenerational poverty cycle. It calls for a social equity rationale that adopts an intergenerational perspective by enabling young people from disadvantaged families to escape the poverty cycle and to achieve sustainable livelihoods for themselves and their own families. It promotes social equity that does not destabilize environments and make them fragile, but that protects intergenerational equity by handing down flourishing ecosystems to future generations.

Knowledge and technology-based economies are not the only direction toward which twenty-first-century societies and economies are transitioning. Even more importantly, these economies are in transition to sustainable and resilient societies, albeit slowly. In fact, the twenty-first century may well become the century in which 'sustainability' becomes integral to the development discourse and in which it is considered almost synonymous with development in its most holistic sense. The Brundtland report of the World Commission on Environment and Development described sustainable development as:

> *development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains two key concepts: the concept of needs, in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organisation on the environment's ability to meet present and future needs.*
> (World Commission on Environment and Development, 1987, p. 8)

Although 'sustainability' is still defined in various ways and a consensus is yet to emerge, 'most definitions include: living within the limits of what the environment can provide, understanding the many interconnections between economy, society and the environment, the equal distribution of resources and opportunities' (Government of New South Wales, 2013). Given the wide scope, complexity and context-specificity of the concept of sustainability, the articulation of the sustainability rationale in this book focuses only on a few areas that aptly demonstrate the high expectations for TVET systems to contribute to sustainability. As outlined above, these expectations continue to push TVET to the top of global debates and of national and sectoral policy priorities.

With the deepening collective conscience about the environmental impacts of development, of which climate change is perhaps the most dramatic, TVET systems are more incessantly expected to supply not only the skills that underpin economic growth, but green skills (UNESCO-UNEVOC, 2012). Whereas in the past the skills acquired through TVET focused mainly on production with little consideration for the sustainability of that production, green skills are expected to play a prominent role in greening economies and in enabling the sustainability of development in economic, environmental and social terms. TVET can supply the green skills that are required to catalyse the transition to low-carbon economies and to respond to the demands of sustainable energy transition while contributing to employment growth (CEDEFOP, 2013*a*, p. 65).

TVET prepares people for working in a range of sectors, including construction, waste management and agriculture, which consume enormous amounts of energy, raw materials and water. Sustainability requires that those working in these sectors be skilled workers who have knowledge of and commitment to sustainable development, as well as the requisite technical knowledge (UNESCO, 2012*a*). The transition to low-carbon high-efficiency economies represents a structural change in the labour market, which will see the emergence of new green jobs 'such as those related to the development, manufacture and operation of renewable energy generating equipment, green accounting, carbon trading and carbon-auditing' (Maclean et al., 2011, p. 16).

There are other examples of the skills base that green jobs may demand. These skills include the development of environmentally conscious policies and programme design, water conservation and management, sustainable planning, asset maintenance, renewable energy, wind power, low-carbon construction, low-carbon road freight, ecotourism, and land management, among many others. Specifically, TVET systems have the potential to nurture competencies for greening economies and societies, including among others economic literacy, sustainable consumption and managing small enterprises (Fien and Wilson, 2005). Given deep concerns about the sustainability of current development trajectories, the rationale for investing in green skills is clear, both with regard to the interests of future generations and because governments want to seize the potential for job creation offered by transitions to green economies and societies. More than ever, TVET learning is expected to support critical reflections on the attitudes and values needed for a more sustainable future.

The timeliness or lack thereof with which TVET systems respond to sustainability concerns, and the demand for green skills in particular, can put these systems in a virtuous interaction with the labour market, or alternatively, widen the

disconnect between the demand and the supply of skills. TVET systems are recognized and given priority for their potential to improve the skills base required for low-carbon economies because such learning supports overall economic performance (Brown, 2012). Where green sectors of the economy, such as renewable energy, prove successful this creates additional demand for green skills.

The transition to greener and more sustainable economies is not just about new jobs, but is also about changing modes of production. Because employers often prefer to retain existing employees rather than assume the risk of new and untried entrants (Martinaitis, 2012), TVET systems can therefore be under pressure to reskill existing employees even at a time when they are adjusting to these structural labour market shifts themselves.

TVET systems are gaining recognition for their capacity to catalyse and sustain innovation in workplaces through the introduction of new technical and broader skills, including green skills, and by empowering workers to be agents of innovation within enterprises so that they can keep pace with changing times and the sustainability imperatives. Enterprises demand this support from TVET systems because this capacity takes them to the cutting edge of sustainability while pushing up their profit margins. As part of education systems, TVET systems are well placed to foster a collective culture of sustainability within enterprises. The actions taken may range from simple habits like recycling, optimal use of recycled materials, recycling and the reuse of water, car-pooling, cycling and walking, turning lights off when not in use and reducing energy consumption, to the introduction of more complicated innovations. The close interaction between TVET systems and industry could be conducive to research and development (R&D) and the associated innovations in greening work environments, as well as sustainable modes of production. In turn, this interaction could also spur innovation within TVET systems in terms of their teaching and learning environments, delivery methods, learning technologies, and management information systems (MIS).

By becoming learning systems that are able to build on past experiences and adjust to future demands, TVET systems can secure their own sustainability. Their sustainability implies that TVET systems themselves become 'green', which means, among other things, TVET providers demonstrating and monitoring their own achievements with regard to sustainable policies and practices, for example by 'greening' TVET campuses.

TVET systems are progressively expected to provide education for sustainability as part of their core curricula (Woods, 2004). The 2009 Bonn Declaration on Education for Sustainable Development (ESD) states that:

> *ESD emphasises creative and critical approaches, long-term thinking, innovation and empowerment for dealing with uncertainty, and for solving complex problems. ESD highlights the interdependence of environment, economy, society, and cultural diversity from local to global levels, and takes account of past, present and future.* (UNESCO, 2009*a*, p. 2)

For UNESCO, education for sustainable development involves:

> *integrating key sustainable development issues into teaching and learning. This may include, for example, instruction about climate change, disaster risk reduction, biodiversity, and poverty reduction and sustainable consumption. It also requires participatory teaching and learning methods that motivate and empower learners to change their behaviours and take action for sustainable development. ESD consequently promotes competencies like critical thinking, imagining future scenarios and making decisions in a collaborative way.* (UNESCO, 2013*a*)

Attention to sustainability implies an international perspective for TVET. Serious environmental concerns, such as climate change, pollution, desertification and the depletion of fish stocks, transcend national borders. Addressing them requires people with a sense of social and environmental responsibility, and stewardship that is both local and global in scope. The realization that actions in one part of the world have consequences in another is an important starting point. However, given that economic growth fuels aspirations and demands by consumers for products and services that have significant environmental footprints, the pressure on resources including fossil fuels, minerals, land and water is growing. For instance, it is estimated that by 2025, an estimated 60 per cent of the world's population will live in water-stressed conditions (UNESCO, 2011*a*). The presence of social inequalities and competing claims to the same resources, and instances where the actions of one community have negative environmental impacts on another, increase the risk of disputes escalating into violent conflict or even war. There is therefore a strong rationale to utilize TVET to promote the values, attitudes and competencies for global citizenship so that its learners appreciate that equitable and sustainable resource use, and environmental responsibility, are a collective duty and are potentially related to the prospects for lasting global peace (UNESCO, 2013*a*).

The section above on the economic rationale points out that TVET systems have progressively widened their coverage of skill types to include generic, basic, cognitive, affective, and technical and vocational skills. Furthermore, TVET systems themselves often have a regional or international dimension, and language skills are needed for labour mobility. This positions TVET systems well for providing education for sustainable development and global citizenship, and for meeting the demand for an integrated approach to skill types and diverse fields of study. For instance, UNESCO identifies a wide range of fields of study – from biodiversity to peace and human security – that fall under ESD. Furthermore, when TVET systems work in close relation with the rest of formal, non-formal and informal learning, there is increased potential to reach populations that are normally left out of opportunities for ESD. TVET systems are well placed to play a leading role in ESD, with their location at the interface between education and the world of work. From this position TVET systems can identify skills that need to be learned, provide support to social entrepreneurship, and offer the wide coverage that TVET learning has in its multiple settings, within and beyond nation states.

Unleashing the potential

TVET is seen by a large number of countries as a key part of the solution to a myriad of challenges including sluggish growth, poverty, inequalities, employability and unemployment, particularly though not exclusively for youth and for women, and as a means to tackle human underdevelopment and climate change. However, for many of these challenges the potential of TVET remains unrealized. Moreover, the perception of this potential is often not shared by individuals and their families. For a range of reasons, not least of which are incentives and perceived status, individual and household demand for some forms of TVET remains low. The proportion of secondary school children enrolled in TVET programmes has remained at 11 per cent since 1999 (UNESCO, 2012*b*), partly because of the combined low capacity of TVET systems and low individual uptake of TVET learning opportunities. This book addresses the globally debated question: What would it take to unleash the potential of TVET systems? The book is based mainly on background reports and think-pieces that were prepared to guide global debates on this very question during the 2012 Third International Congress on TVET led by UNESCO in Shanghai, People's Republic of China. Entitled *Transforming TVET: Building Skills for Work and Life*, the Congress debated not only the main question but subsidiary questions pertaining to: What stands in the way of realizing the potential of TVET systems? And how can such obstacles be removed? In addressing these

questions, the book acknowledges that 'past is prelude'. It therefore looks back in order to look forward. It analyses past TVET policies and identifies potential future frontiers in the development of TVET.

From these analyses, the book underscores the reality that TVET systems are increasingly challenged to heighten their contribution to development in the twenty-first century, a hallmark of which is rapid and unpredictable change. In the effort to stay responsive TVET systems have been changing, albeit the change has not been as fast or as agile as their development contexts. The failure to keep pace with the changing context results in an expanding disconnect between the demand and the supply of skills supplied by TVET systems. This book also recognizes that the key markers of twenty-first century development include knowledge and technology driven growth, a deepening concern for youth unemployment, social equity and a deepening collective conscience about the need for sustainability. TVET systems are therefore under immense pressure to expand and increase the human capital base required to support knowledge and technology driven growth and the sustainability of development. At the same time, they are expected to enhance social equity and the associated peace and political stability, as well as ensure the human right to equal learning and development opportunities.

Against this background, the book endorses the need to expand TVET systems to meet the growing demands and expectations placed on them. However, the key message is that TVET systems should not simply be expanded in their current state of unrealized potential. The book calls for the transformation of current TVET systems to enable them to respond in a sustainable and effective fashion to the demands of their contexts. Because contextual demands in the twenty-first century are rapidly changing, this transformation should enable the systems to acquire the agility to stay current and responsive. Unleashing the potential of TVET systems will therefore require not only their expansion, but even more importantly, their dynamic and continuous transformation into lifelong learning systems.

Overview of the book

The book is organized in six chapters. The key message of Chapter 1 is that over the period of this review, from 1999 to 2012, the development of TVET systems was shaped by multiple, complex and rapidly changing contextual factors. At the same time, TVET systems shaped the development of these factors. The contextual relevance of TVET systems therefore emerges from their

dynamic interaction with factors in their geographic and temporal contexts. The chapter identifies contextual factors that have been critical in driving the development of TVET over the past decade. Among the factors identified are: i) a shift in the development paradigm, ii) demographic trends, iii) global education policies, iv) migration, v) labour market trends and demands, vi) technological advancements and innovation, vii) changing modes of work, and viii) shifts in the political landscape that have led to hidden and open crises. The chapter further organizes these factors into those broadly pertaining to the need for TVET systems to support accelerated and sustained growth, social equity and the sustainability of development.

Chapter 2 acknowledges the efforts of TVET systems to respond effectively to the contextual factors outlined in Chapter 1. It notes that these responses have mainly taken the form of policies, operational measures and implementable programmes. The chapter presents the policies and their associated measures in accordance with the grouping of the contextual factors in Chapter 1. They are therefore presented in clusters of policies and policy measures intended to improve TVET systems' contribution to productivity and economic growth, social equity and the sustainability of development. The chapter notes that, on a sliding scale, TVET systems' policy responses tended to focus mainly on economic demands, less so on social equity and even less so on sustainability. Even with this favourable bias, the attention to economic demands has been uneven, imbalanced and inadequate. Policy responses to the social equity imperatives have simply been inadequate, and those to the sustainability imperative have only begun to emerge.

Chapter 2 further notes that regardless of their focus, policy responses and policy measures have not always been responsive to the immediate geographic or temporal contexts of their respective TVET systems. In fact, the use of policies and policy measures borrowed directly from other contexts and without much adaptation has been a common practice. As such, policies and policy measures have not always advanced the relevance of TVET programmes to their immediate contexts. This policy borrowing and lending has actually undermined the potential development impact of TVET systems. Chapter 2 therefore concludes with a call for more balanced and contextually responsive policies and policy measures if TVET systems are to optimally contribute to holistic, humanistic and sustainable development, and if the systems are to meet expectations.

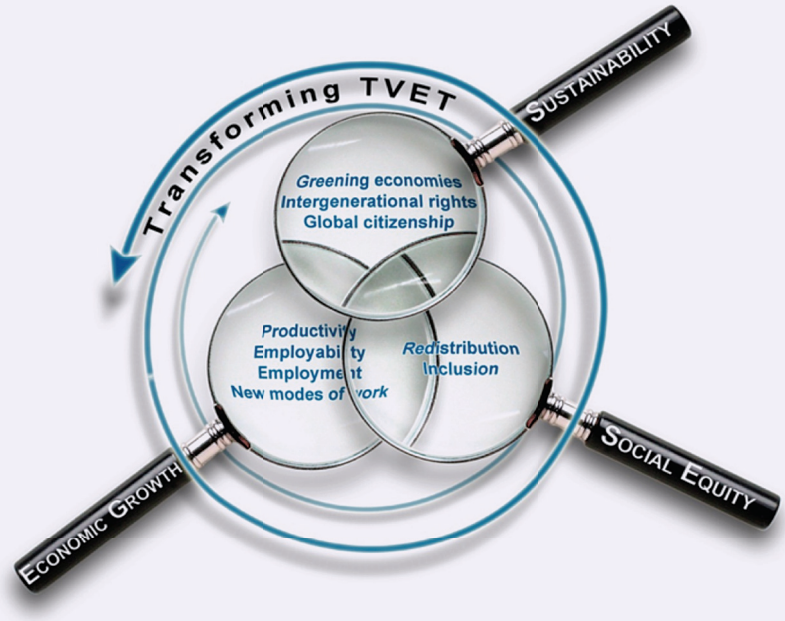
A response to contextual factors outlined in Chapter 1, and by implication the effective implementation of the policies and policy measures presented in Chapter 2, requires the presence of effective TVET systems. Chapter 3 therefore

outlines policies and policy measures that have been instituted over the period under review to strengthen the capacity of TVET systems to be more responsive to contextual demands. Key among these policies are those that have focused on: i) expanding and diversifying access; ii) expanding work-based learning and cooperation with businesses; iii) enhancing quality and relevance; iv) professionalizing TVET teachers and trainers; v) empowering learners; vi) strengthening the management of TVET institutions; vii) improving governance and stakeholder participation; viii) developing supporting frameworks for implementation; and ix) using funding to steer TVET. Unlike the policies and policy measures presented in Chapter 2, responding to external pressures, this cluster of policies and policy measures is responding to the internal demands of TVET systems themselves. All the same, they have been equally significant in shaping the development of TVET over the review period. In conclusion, Chapter 3 recognizes both the complexity of TVET policies and challenges to put them into practice. It points to progress in some countries in reinforcing the capacity of TVET systems to respond to external demands, but also highlights for others the challenges faced in building this capacity.

Chapter 4 builds on the broad categorization of contextual factors identified in Chapter 1. These factors encompass demands on TVET systems to support economic growth, social equity and the sustainability of development. It proposes an analytical approach (see Figure 2) to underpin and guide the transformation and expansion of TVET systems. These demands on TVET systems are referred to as lenses. The metaphor of lenses is used to suggest that the analyses of TVET systems must concurrently take into account these three principal demands. At the same time and for a range of reasons, the analysis may have to focus attention on one of these three demands or even certain aspects within these demands, as though it is looking at a TVET system through a single focused lens. Such a focus would imply a strategic rather than an exclusive attention at that point in time, be it on economic growth, social equity or sustainability. The choice of a lens through which to focus is determined by the specifics of a geographic and temporal context. As such, the three lenses are presented as overlapping and complementary.

Chapter 5 turns attention to the broader environment and enablers of the transformation of TVET systems. Three fundamental enablers are discussed. The first pertains to the importance of building alliances, partnerships and networks for the transformation of TVET. The second is about putting the culture of learning at the core of TVET transformation. The third is creating a knowledge base for evidence-based policies. The key argument is that the

Figure 2. Three analytical lenses for transforming TVET



Source: Authors.

potential of TVET depends on building sustainable strategic partnerships which themselves require a culture of learning, capacity-strengthening and strategic policy choices supported by a strong analytical knowledge base. The chapter underscores the need to strengthen the capacity of key TVET partners, particularly policy-makers, employers, unions and training providers. Such capacity should reinforce their respective roles and foster their alignment with desired transformation goals. Capacity-strengthening should also support policy-learning through the active and substantive engagement of national stakeholders to best enable them to develop their own policies and implement their own plans. The chapter underscores that building evidence-based knowledge and incentive and accountability systems requires the systematic and continuous collection and management of accurate and reliable information and data for both TVET systems and labour markets. Such data are indispensable for monitoring and evaluating the impact of policy decisions, policies and programmes, as well as for supporting the wider research required for the further development of TVET systems.

Chapter 6 presents the main conclusions of the review and provides key recommendations for TVET transformation to realize its potential to meet the triple demands (economic growth, social equity and sustainability). It recognizes that during the review period, a good many countries have achieved commendable results with respect to reforming TVET systems to respond to contextual factors. However, it also notes that a lot more countries have not been able to reform their TVET systems to achieve their full potential. In both cases, these reforms tended to take place without sufficient links with the growing concern for the sustainability of development. As international education and development agendas coalesce to shape the post-2015 world of education and training, there are new opportunities for TVET systems to play a larger transformative role in the lives and well-being of individuals, communities, countries and indeed the world. In this chapter transformation is conceived as a relevant approach to ensure all countries are able to position TVET as a key transition mechanism to sustainable development. In the conclusions, the authors consider that this is particularly challenging for national governments with limited resources, low institutional capacities and a weak private sector. The chapter, and the book, concludes with an indication of steps which government and decision-makers could take if TVET systems are to make an optimal contribution to this transition, and with recommendations for furthering these contributions within the framework of the emerging agendas for education and development beyond 2015.

Chapter 1

The Contextual Drivers of TVET Development

The development of TVET today is shaped by a complex and rapidly changing set of contextual factors. These factors in turn are influenced by the changes taking place in TVET. UNESCO has closely followed and often led the global dialogue on current and future developments of TVET. Invariably, this dialogue has taken place in International Congresses on TVET (Berlin 1987, Seoul 1999 and Shanghai 2012); in regional, national and professional forums; and in landmark publications such as this volume and others to be found in the UNEVOC International Library of TVET. This sustained dialogue continues to identify and even anticipate the contextual factors that underpin the current development of TVET systems, and those that will shape its future. Factors that have driven the development of TVET over the review period include : i) a shift in the development paradigm; ii) demographic trends; iii) global education policies; iv) migration; v) labour market trends and demands; vi) technological advancements and innovation; vii) changing modes of work; viii) and shifts in the political landscape.

A shift in the development paradigm

The economic and material view of development that dominated the past century has been forcefully challenged by scholars who take a holistic and humanistic approach to development. Sen (1999), for example, emphasized the human element of development and presented human development as a process of enlarging people's choices and enhancing human capabilities and freedoms. For Sen, human development is concerned with 'advancing the richness of human life, rather than the richness of the economy in which human beings live, which is only part of it' (Sen, cited in Shaikh, 2007, p. 4). This approach has underscored equity, empowerment and sustainability as profound elements of development. It has substantially guided the United Nations' approach to human development (see Box 2). The United Nations has adopted 'constructs' that capture the state of human development such as multidimensional inequality, gender disparities and extreme deprivation. These constructs have been used in measures of human development found in the annual *Human Development Reports* of the United Nations Development Programme (UNDP). Influenced by scholarly work, notably in the field of development studies, these reports have become a strong voice that continues to shape the holistic and humanistic development paradigm.

Box 2. Reaffirmation of human development

Human development is the expansion of people's freedoms to live long, healthy and creative lives; to advance other goals they have reason to value; and to engage actively in shaping development equitably and sustainably on a shared planet. People are both the beneficiaries and the drivers of human development, as individuals and in groups. This reaffirmation underlines the core of human development—its themes of sustainability, equity and empowerment and its inherent flexibility. Because gains might be fragile and vulnerable to reversal and because future generations must be treated justly, special efforts are needed to ensure that human development endures—that it is sustainable. Human development is also about addressing structural disparities—it must be equitable. And it is about enabling people to exercise individual choice and to participate in, shape and benefit from processes at the household, community and national levels—to be empowered. Human development insists on deliberation and debate and on leaving the ends of development open to discussion. People, individually and in groups, shape these processes.

Source: UNDP (2010*a*, p. 2).

Institutions like UNESCO and the World Bank have also influenced the development paradigm driving changes in TVET. The World Bank's focus on accelerated and shared growth, poverty eradication and knowledge for development has made knowledge, technology, equity and social justice indispensable elements of development. UNESCO has consistently underscored the interdependence of peace and development. UNESCO has viewed development as holistic, humanistic, inclusive and sustainable. The international community has also called for approaches to development that harmonize economic prosperity, environmental conservation and total well-being, for example in the *Bonn Declaration*, (UNESCO-UNEVOC, 2004), and the outcome document of the Rio+20 United Nations Conference on Sustainable Development, *The Future We Want* (United Nations, 2012). Collectively, these contributions acknowledge economic growth as vital but insufficient on its own part for development in the twenty-first century. The evolution of the development discourse has come to include economic growth, peace, political stability, social equity, sustainability, empowerment, quality of life, human capabilities and conditions, human rights and freedoms, culture, politics, ethics, morals, religion, knowledge and technology, among others. Thus, development has evolved to denote a more complex, multifaceted and dynamic state of progress than just economic and material progress. Against this background, TVET is held accountable for more than its impact on economic growth.

Box 3. Twenty-first century demands

The twenty-first century will bring a radically different economy and society with profound implications for technical and vocational education. TVE systems must adapt to these key features which include globalization, an ever-changing technological scenario, the revolution in information and communications, and the consequent rapid pace of social change. The implications of these transformations include the increased mobility of labour and capital, uneven impacts upon rich and poor, and emerging market economies in both rural and industrial sectors. The knowledge-based society which these changes are bringing offers exciting new modalities for education and training.

These social and economic trends predicate the need for a new development paradigm which holds a culture of peace and environmentally sound sustainable development as its central features.

Sources: UNESCO (1999).

TVET systems have had to adjust to this new holistic, humanistic and sustainable development context. However, as outlined in the Introduction, the economic perspective has ruled for most of the past century. Perceptions of TVET as a key contributor to productivity and economic growth remain deeply ingrained and widely recognized. The contribution of TVET to holistic, humanistic and sustainable development is less acknowledged. Anticipating the future development of TVET, the Second International Congress on Technical and Vocational Education in Seoul in 1999 underscored the need for TVET to respond effectively to the demands of the twenty-first century (see Box 3). It also underscored that TVET is a basic human right, and emphasized the need for a new human-centred development paradigm that recognizes not only economic considerations but also sustainable development and human security (UNESCO, 1999, p. 4). The Congress also called for a 'culturally-directed search for a dynamic balance in the relationships between social, economic and cultural systems – a balance that seeks to promote equity between the present and the future, as well as equity between countries, races, social class and genders' (UNESCO, 1999, p. 5).

In response to this shift in the development paradigm, TVET systems have progressively integrated a broader range of skills, knowledge, technologies and dispositions into the old classic concept of technical and occupational skills intended to serve a diverse range of occupations. TVET has expanded its scope to cover a wider range of skills and dispositions, such as generic, cognitive, academic (pertaining to subject matter content), technical, occupational, ethical, moral and cultural skills (Marope, 2009). This broadening conceptualization of TVET is blurring the traditional line of division between TVET and its 'first cousins', general secondary and higher education. The wider

coverage of skill types is also enhancing the recognition of TVET as an integral part of education and training systems, and improving its vertical and horizontal articulation with other education subsectors within a lifelong learning framework.

A holistic, humanistic and sustainable development paradigm as described above recognizes more explicitly a wider range of contributors to development beyond the traditional 'economic and productive sectors'. This includes sectors pertaining to politics, political economy, culture, the sciences, health, values, religions, ethics, the arts and others. This paradigm accords higher recognition to a broader range of actors in development, including the public, parastatal, private, formal and informal sectors as well as community-based organizations (CBOs), non-governmental organizations (NGOs), communities, youth organizations, workers' unions, employers' federations and households. The growing recognition of a wider range of sectors and actors not only broadens the skill types covered by TVET systems, but also reinforces the multisectorality of TVET systems.

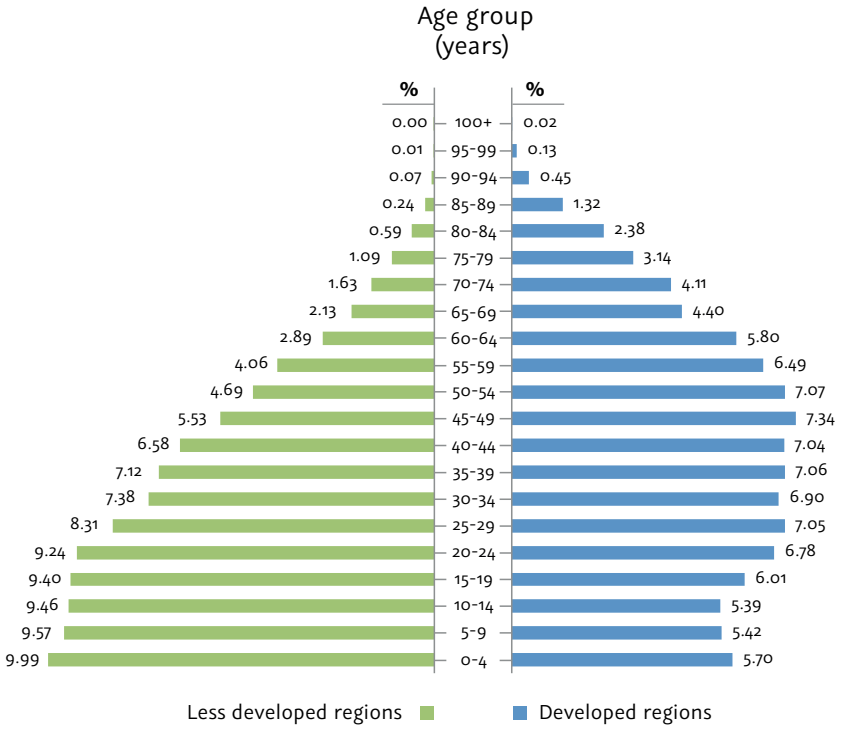
The shift to a more holistic, humanistic and sustainable development paradigm has contributed to reforms in the content of TVET systems and also to reforms in their governance. Multisectorality has impelled complex institutional articulation, coordination and collaboration in the design and operationalization of TVET policies, strategies, programme oversight, governance and financing. The governance structures of TVET systems are steadily changing to balance multi-stakeholder representation. Often, semi-autonomous or fully autonomous entities such as National Training Authorities (NTAs), Technical and Vocational Training Corporations (TVTCs) and Sector Education and Training Authorities (SETAs) are being used to ensure this balance. These governance structures are giving voice to multiple stakeholders in shaping TVET policies, strategies and programmes. At the same time, they are ensuring shared accountability for the financing of TVET systems. This is diversifying the financial base from one dominated by government to one that includes the private sector, civil society, communities, households and individuals. Financing instruments are becoming more diversified as illustrated by public–private partnerships (PPPs), payroll levies, training funds, employer sponsorship and individual sponsorship.

Demographic trends

The changing age structure of the world's populations continues to challenge TVET systems. The challenge calls for improving and adapting the skills, knowledge and dispositions of those entering the labour force, and also of those who are already active in the labour market. For instance, improvements in health and well-being, life expectancy at birth, and changes in fertility and mortality rates have noticeably modified the age structure of the world's population. Between 2000 and 2010, the proportion of individuals across the globe aged 65 years and above increased from 7 per cent to 8 per cent, while that of persons below 14 years of age declined from 30 per cent to 26 per cent. Overall, across the world there were 2.6 million fewer children in 2010 than in 2000, but this pattern obscures differences between developed and developing countries. In developed countries there was a 6 per cent absolute decline in the number of children below 14 years of age, in contrast to an 18 per cent increase in the least developed countries (UN, 2011*a*). The challenge for TVET in equipping a workforce with skills therefore differs between developed and developing countries.

Currently, the population of less developed regions is considerably younger than that of developed regions (see Figure 3). Children under 15 years of age account for 29 per cent of the population in less developed regions, and young persons aged 15 to 24 account for a further 18 per cent. The numbers of children and young people in these less developed regions are at an all-time high of 1.6 billion and 1.0 billion respectively (UN, 2011*a*). These numbers significantly challenge the capacity of less developed countries to provide quality education and training alongside good jobs and well-paid employment. The situation is even more pressing in the least developed countries, where children under 15 years constitute 40 per cent of the population and young people 15 to 24 years of age account for a further 20 per cent (UN, 2011*a*).

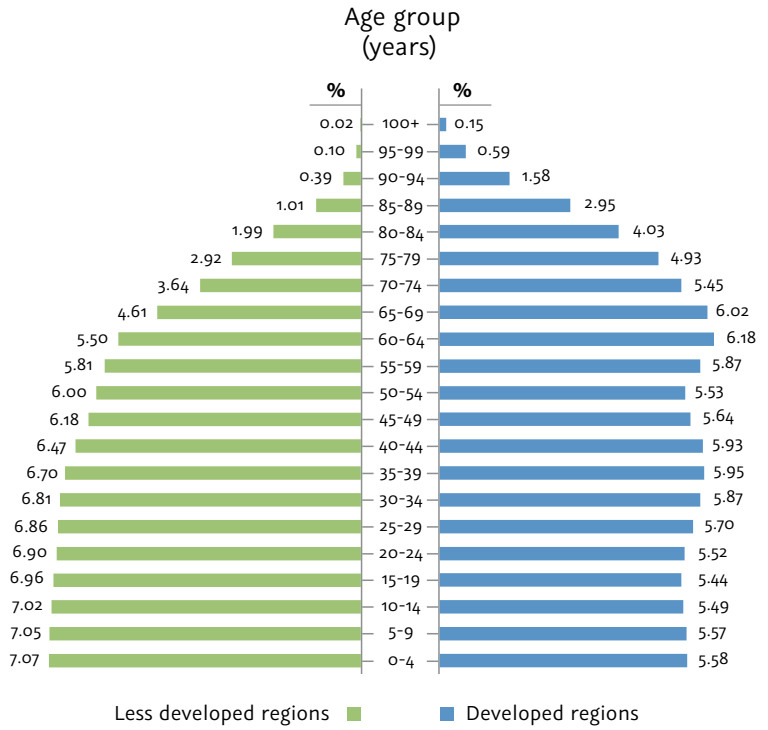
Figure 3. Age distribution in less developed and developed regions (2010)



Source: Calculations based on UN 2011*a*. *World Population Prospects: The 2010 Revision*. New York, UN Department of Economic and Social Affairs.

The pattern is different in developed regions, as can be seen in Figure 3: here the problem is one of rising numbers of older workers. Those under 25 years of age represent only 29 per cent of the population in developed regions compared with 47 per cent in less developed regions. The working-age population (defined as those aged 25 to 64) accounts for 55 per cent in developed regions, but only 47 per cent in less developed regions. For TVET, the challenge in developed regions is primarily one of helping older workers adapt to structural and technological changes, while in less developed regions, especially sub-Saharan Africa, the challenge is one of preparing a large cohort of youths for entry into the workforce. However, with fertility rates dropping nearly everywhere and life expectancy rising in most of the world regions, the ageing phenomenon will become more pervasive, albeit still uneven across regions. Differences in the age structures of the developed and the developing world are expected to become less pronounced over the next four decades (see Figure 4).

Figure 4. Projected age distribution in less developed and developed regions (2050)



Source: Calculation based on UN 2011*a*. *World Population Prospects: The 2010 Revision.* New York, UN Department of Economic and Social Affairs.

These demographic projections, if realized, would mean a 28 per cent increase in the global working-age population by 2050 (UN, 2011*a*). The increase, however, would be concentrated in less developed regions as the working age population in developed countries would decline by almost 10 per cent. As a consequence, developed regions will experience a different set of problems than less developed regions. The ageing population in developed regions will exert pressure on social security outlays and public finances. The pressure will grow with a better educated labour force and improved health care. As a result, steps are being taken to postpone the retirement age to preserve the productive potential of older and healthier populations.

TVET systems will be challenged by these demographic patterns to play a larger role in national lifelong learning frameworks. TVET will be expected to provide a 'senior' labour force with opportunities to upgrade and acquire new skills such as use of information and communications technology (ICT). Older workers will be expected to assume more responsibility for keeping their skills current. Indeed growing evidence suggests that the formation of

skills is in itself a life-cycle process (Cunha and Heckman, 2007). However, inculcating and/or reinforcing the culture of lifelong learning and improving the uptake of available learning opportunities may require public education and career guidance buttressed with appropriate incentives. An example is paid and compulsory study leave, such as is provided for teachers in Singapore (OECD, 2010*a*). Other incentives include merit and recognition awards.

Although in an uneven fashion across regions, TVET systems are progressively expanding their just-in-time programmes to cater for the re-skilling and up-skilling of the ageing workforce and expand their lifelong learning opportunities. Most developed countries already have lifelong learning policies, legislation, and institutional and operational frameworks that integrate TVET (OECD, 2003, 2007). The situation is different, however, for many developing countries that are yet to articulate coherent and implementable lifelong learning frameworks, and whose immediate challenge is meeting the demand for youth employment. As shown in Figure 4, however, this difference will shrink with time. Developing countries will join their developed counterparts and need to articulate lifelong learning frameworks that fully integrate TVET systems. TVET policies will need to confront the challenges of ageing, changing work environments and emerging skills needs. TVET will need to promote a diverse supply of programmes to meet these challenges and provide skilling opportunities for all.

Along with strengthening the role of TVET in national lifelong learning frameworks, TVET systems in developed regions will need to introduce and expand qualifications frameworks that recognize informal learning and the tremendously rich experience ageing workers have accrued over the years. The Recognition of Prior Learning (RPL) and certification of skills will become more important. The Portuguese validation of non-formal and informal learning provides an example of this recognition (ECOTEC, 2008). Other examples of informal learning opportunities that support adult learning include science parks, museums, archives and libraries that respond to the learning needs of adults alongside children and youth. In Croatia a lifelong learning week is organized every year to familiarize citizens and media with the opportunities in education and training (CEDEFOP, 2012*a*). Quasi-formal TVET learning opportunities such as enterprise skills development programmes and workplace TVET learning are extending opportunities for re-skilling and up-skilling as central parts of national TVET systems. In Bulgaria, the 'I can and I can do more' initiative provides each citizen with an opportunity for training that leads to a vocational qualification (ibid.).

For less developed regions, the large numbers of young people entering the labour market with very low qualifications are deepening the social divide between those with requisite skills allowing them to secure decent jobs and those with low skills who work in low-paid and poor-quality jobs in the formal or informal sectors. It is also deepening income inequalities, as those with scarce skills are able to exact higher earnings in a market economy, while large numbers of semi-skilled and the unskilled workers are left behind with low earnings and inadequate employment opportunities (Marope, 2005). In the search for decent jobs, young and old are resorting to internal migration from rural to urban areas. Others are pursuing external migration to developed countries (see the section below on migration). TVET is experiencing pressure to equip these individuals with the skills needed in their new work settings. TVET systems are under pressure to contribute in a meaningful fashion to efforts to meet workers' demands for decent work, quality and higher paying jobs, as well as fulfilling work and overall well-being.

Global education policies

The Education for All (EFA) movement has had its own implications for TVET at both international and national levels. Although it may have lacked precision and measurable targets for TVET, the third EFA goal called for ensuring 'that the learning needs of all young people and adults are met through equitable access to appropriate learning and life-skills programmes' (World Conference on Education for All, 2000). This goal had a symbolic value, helping to raise the visibility of TVET and skills development and create a more prominent place for them on the global education policy agenda. The current bulge of young people requiring TVET learning opportunities is partly fuelled by the success of the EFA movement in opening access to basic education, particularly at the primary level. In 2009, 702 million children were enrolled worldwide in primary education, compared with 646 million in 1999 (UNESCO Institute for Statistics, 2011, p. 9).

The expanded numbers of children expected to complete primary education create a pipeline of young people who are likely to seek further education, including TVET. This marked improvement in access to primary education represents an increase of 9 per cent worldwide. The access varies by region. In sub-Saharan Africa primary enrolments increased by 59 per cent (66 per cent for girls). In South and West Asia, enrolments grew by 28 per cent and in

the Arab States they expanded by 17 per cent (UNESCO, 2012*b*). In 2009, more than half of the world's children who were enrolled in primary school were found in two regions: East Asia and the Pacific (27 per cent) and South and West Asia (28 per cent) (ibid.). Limited opportunities at the next level of general education are producing greater demands for TVET education, which in turn offers pathways to post-secondary and higher education and training. The pressure has been stronger in sub-Saharan Africa, South and West Asia, where the large primary enrolments gains are linked with limited opportunities for secondary and tertiary education (see Table 1).

Table 1 shows the pipeline of students who will expect to pursue upper secondary and tertiary education. The expansion of secondary education and growing concern about the school-to-work transition is producing changes in the general education curriculum. These changes include the introduction of pre-vocational skills at lower levels and the 'vocationalization' of secondary general education. The trend in recent years, as opportunities for lower secondary education have increased, is the movement of vocational studies into upper secondary education. In countries where upper secondary education is readily available, technical and vocational studies have progressed into post-secondary education. In each case, youths are acquiring more general education before entering TVET. As earlier acknowledged, the blurring of old subsectoral lines between TVET and general education is working to better integrate TVET into the education and training sector within a lifelong learning framework.

In countries where the EFA movement has not met its enrolment targets, those who have been underserved by the formal education system are seeking non-formal and informal TVET learning opportunities. Apart from the gains made by EFA, 123 million youth in 2011 still lacked basic literacy and numeracy skills. One in five European citizens lacked functional literacy skills (European Commission, 2012) as did 160 million adults in OECD countries (OECD, 2009). Fifty-seven million children of primary school age were not enrolled in primary education of any form, and 69 million adolescents had no access to lower secondary education, which has become the virtual upper limit of basic education in most developing countries (UNESCO, 2012*b*). At best, most of those who never had a chance for formal basic education will therefore need to acquire skills through non-formal and informal means. In this scenario, RPL systems are best placed to enable the formalization and recognition of such skills, but for an average citizen of the developing world, these systems are only beginning to emerge.

Table 1. Enrolment by level of education

	Primary education (thousands)		Secondary education (thousands)						Tertiary education (thousands)	
			Total secondary		Lower secondary		Upper secondary			
Region	Total	% Female	Total	% Female	Total	% Female	Total	% Female	Total	% Female
World	698 693	48	543 226	48	313 342	48	229 884	47	182 441	51
Countries in transition	13 475	49	24 363	48	16 350	49	8 013	47	15 236	55
Developed countries	65 771	49	79 336	49	40 273	49	39 063	49	47 641	55
Developing countries	619 447	48	439 526	47	256 719	47	182 808	47	119 564	48
Arab States	42 771	47	30 726	47	19 889	46	10 836	49	7 889	49
Central and Eastern Europe	19 552	49	29 787	48	17 311	49	12 476	47	21 803	55
Central Asia	5 468	48	10 288	48	6 871	48	3 418	48	2 091	52
East Asia and the Pacific	184 257	47	159 783	48	91 377	48	68 406	48	55 909	50
East Asia	180 875	47	156 570	48	89 521	48	67 048	48	54 300	49
Pacific	3 382	48	3 213	47	1 855	47	1 357	48	1 608	56
Latin America and the Caribbean	65 686	48	60 525	51	37 079	50	23 446	53	22 180	56
Caribbean	2 396	49	1 414	49	847	49	568	50	...	...
Latin America	63 290	48	59 111	51	36 232	50	22 878	53	22 033	55
North America and Western Europe	51 686	49	61 433	49	31 348	49	30 085	49	37 336	56
South and West Asia	192 850	48	144 402	46	79 497	47	64 905	45	29 199	42
Sub-Saharan Africa	136 423	48	46 282	45	29 971	45	16 311	44	6 034	38
Countries with low income	126 870	48	49 393	46	32 651	47	16 742	44	7 318	40
Countries with middle income	498 872	47	408 193	47	237 085	48	171 108	47	123 986	50
Lower middle	293 937	48	203 179	46	120 316	47	82 863	45	44 554	44
Upper middle	204 934	47	205 015	49	116 770	48	88 245	49	79 433	53
Countries with high income	72 951	49	85 640	48	43 606	48	42 034	49	51 137	54

Source: UNESCO Institute for Statistics. 2011*b*.

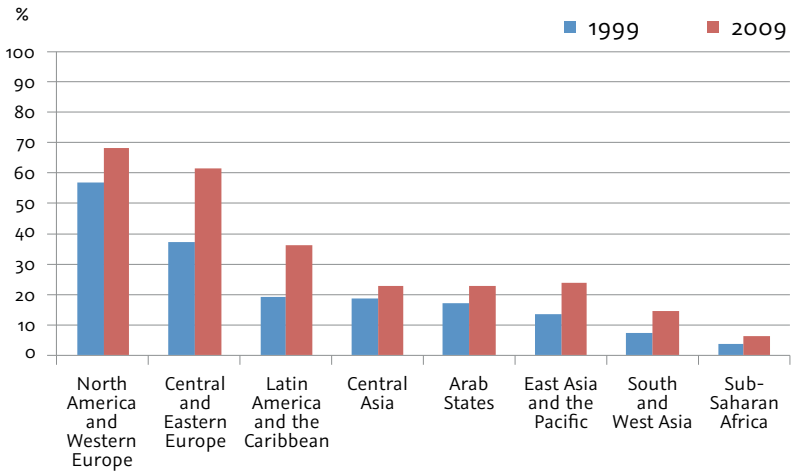
Regional differences in access to schooling are evident, with the largest challenges found in South and West Asia and in sub-Saharan Africa. In 2010, 13.3 million primary school age children were out of school in South-West Asia and South Asia, while in sub-Saharan Africa 30.6 million of these children were out of school (UIS, 2012). At the lower secondary level approximately 71 million adolescents were out of school. The majority are found in South and West Asia (40 per cent) and sub-Saharan Africa (30 per cent). These two regions account for a combined total of 70 per cent of all out-of-school adolescents in this age group (UIS, 2010). These early school leavers are another client base for second-chance education and training programmes and TVET systems are expected to absorb their fair share. Opportunities for second-chance education are limited, like those for formal education, leaving many youths without the foundation of basic education needed to acquire the technical skills sought by employers.

The lack of basic education poses a barrier to further skills development in TVET. The lack of a good quality basic education stifles and frustrates effective demand for TVET learning opportunities. Regrettably, national and international assessments point to the reality that unacceptable proportions of learners who go through formal basic education systems do not acquire competencies commensurate to their years of schooling. For example, the Southern and Eastern Africa Consortium for Monitoring Educational Quality assessment conducted in fifteen countries between 2005 and 2010 (the SACMEQ III Project) found that 55 per cent of the tested grade 6 learners could not interpret what they were reading, and could not make inferences or read analytically or critically. In the case of maths, 83 per cent of assessed learners had not reached the level of competent numeracy (SACMEQ, 2010). The 2009 Programme for International Student Assessment (PISA) recorded that only a minority of 15-year-olds in OECD countries had attained a baseline proficiency in reading (OECD, 2010*a*). The 2012 *Education for All Global Monitoring Report* found that about 130 million children who are enrolled in primary education actually do not acquire skills and competencies commensurate with their levels of education (UNESCO, 2012*b*).

In summary, the EFA movement has influenced demand for TVET in complex ways, raising demand through both its successes and shortcomings. A number of forces have combined to increase the demand for the higher-level skills offered by tertiary education and training. These forces include the upward pressure created by the expansion of basic education, the strengthening of rights-based approaches to education and training, the consequent strengthening of the social equity imperative, and advances in technology that have expanded the demand for workers with higher-level skills. Tertiary

education and training have become increasingly important on national development agendas. Both have undergone profound changes and reforms worldwide, as portrayed in an OECD analysis of tertiary education policies (OECD, 2008). In the review period, the most salient change was undoubtedly the expansion of post-secondary education worldwide, as depicted in Figure 5.

Figure 5. Tertiary gross enrolment ratio by geographical region in 1999 and 2009



Source: UNESCO Institute for Statistics.

The response to this demand for higher-level skills has in turn led to the diversification of the providers of tertiary education and training, and what is often referred to as the 'massification' of higher education. A wider range of public and private providers, offering courses ranging from two-year programmes to graduate programmes catering to the widening range of the student population, has created diverse pathways to tertiary education and training (see Varghese and Puttmann, 2011; Meek, 2000; Trow, 1995). The opening of pathways from secondary TVET to higher education has played a part in this diversification. New ways of delivering tertiary education have emerged, especially through ICT-enabled distance modes of learning. ICT and overall technological advancements present an untapped potential for expanding TVET learning opportunities horizontally and vertically, and possibly with higher resource efficiency gains as virtual labs and workshops replace a fair proportion of real ones.

For countries that are managing to expand their TVET systems, many students in secondary TVET programmes now expect to enter tertiary and other higher levels of education. According to the OECD, one-quarter of Dutch upper secondary vocational students continue into tertiary TVET, and around three-quarters of upper secondary vocational students in the Republic of Korea do so (OECD, 2010*b*). China is rapidly expanding two and three-year tertiary TVET programmes for secondary TVET graduates. In general, TVET as a post-secondary educational pathway of choice seems to emerge in countries where TVET policies are not centred on providing a second-chance learning opportunity for dropouts from basic education, but instead are focused on expanding learning opportunities to increasing numbers of secondary and post-secondary level students.

Different modalities are being tested and further developed in order to create seamless pathways to tertiary levels of TVET. These include modularization, where students can take modules from both general and vocational education; double qualifying pathways, where upper secondary students are prepared to enter the labour market with technician-level qualifications or to continue into tertiary education; and National Qualifications Frameworks (NQFs) that aim to integrate and coordinate national qualifications subsystems and improve the transparency, access, progression and quality of qualifications.

Migration

Migration takes many forms, including temporary, permanent, legal and illegal. The proportion of immigrants, as a share of the world's population, remained at a constant 3 per cent between 2000 and 2010, but in absolute terms the numbers rose sharply by 43 per cent from 150 million to 214 million within the same period (International Organization for Migration, 2011). Immigration patterns were fairly gender balanced, with women accounting for 49 per cent of international migrants in 2010. Half of the international migrants were 39 years old or older, which is much higher than the average age of the world's population (UN, 2010). Regardless of the type of migration, in 2010 the majority (62 per cent) of migrants of working age (20 to 64 years) lived in developed countries. Furthermore, projections seem to suggest that this pattern will be sustained for the foreseeable future (see Table 2).

Table 2. Projected net number of migrants by geographical region

Region	Net number of migrants (thousands)		
	1990-2000	2000-2010	2010-2020
Africa	-410	-625	-496
Asia	-1321	-1603	-1202
Europe	990	1836	1082
Latin America and the Caribbean	-778	-1122	-692
North America	1435	1333	1165
Oceania	84	180	143

Source: United Nations. 2011a. *World Population Prospects: The 2010 Revision*. Department of Economics and Social Affairs, New York.

Increasing migration flows are significantly challenging the national character of TVET systems and qualifications. TVET qualifications are progressively expected not only to serve as proxies for an individual's competencies but to also act as a form of a currency that signals national and international value (Leney, 2009*a*). Making these competencies more fungible will depend on the extent to which qualifications can be recognized across borders in a meaningful way. TVET systems have therefore been developing mechanisms to enable credible and fair cross-border recognition of skills. In 2007, the ILO identified three types of recognition that TVET system may use: unilateral (independent assessment by the receiving country), mutual (agreements between sending and receiving countries), and multilateral (mostly between a regional grouping of countries). Currently, the most prevalent of these is unilateral recognition, which is mostly under the control of national credential evaluation agencies. Countries have been slow to move from input-based skill evaluations to outcome-based methodologies that focus on competencies attained (Keevy, 2011).

A key drawback of unilateral recognition arrangements is that they tend to create an uneven playing field for workers from less preferred sending countries (ILO, 2007). Because of this drawback the ILO encourages governments and others to move towards more equitable mutual recognition agreements to ensure that migrants are able to practise the skills they have acquired in their own countries (Global Commission on International Migration, 2005).

As part of the follow-up to the Third International Congress on TVET, UNESCO is exploring the possibility of identifying a set of world reference levels to facilitate the international comparison and recognition of TVET qualifications (UNESCO, 2012*a*). Similarly, UNESCO's 'second generation' of Regional Conventions on the recognition of certificates, diplomas and qualifications in higher education underscores fair and equitable mutual recognition. One such example is the *Revised Asia-Pacific Regional Convention on the Recognition of Qualifications in Higher Education 2011*.

The recent decision of the UNESCO General Conference in its 37th session to invite UNESCO's Director-General to initiate the process of elaborating a global convention on the recognition of higher education qualfications will take this further forward. This will potentially affect not only higher education but also other levels of education such as TVET that are vertically and horizontally articulated with higher education.

TVET systems are responding to migration by progressively providing qualifications that can stand the rigour of these recognition systems and by creating frameworks for mutual recognition of qualifications. Regional Qualifications Frameworks such as those in Southern Africa, Europe, Asia and the Caribbean promise to significantly support the recognition of qualifications across borders (Keevy et al., 2010). These efforts are further supported through the introduction of outcome-based learning methodologies within the broader context of multilateral recognition agreements (Keevy, 2011). As elaborated in Chapter 5 of this volume, however, more dialogue as well as more effective cooperation on regional and international recognition of qualifications will be required if the development benefits of migration for sending and receiving countries are to be realized. Beyond qualifications frameworks, TVET systems are progressively enhancing the management of labour migration in support of the integration of migrant workers. This is being accomplished through policies for: i) skills development, such as language skills and cultural knowledge and understanding; ii) career guidance and counselling, including skills in understanding and navigating labour markets; and iii) skills recognition, recognition of prior learning, and the recognition of qualifications gained abroad.

Labour market trends and demands

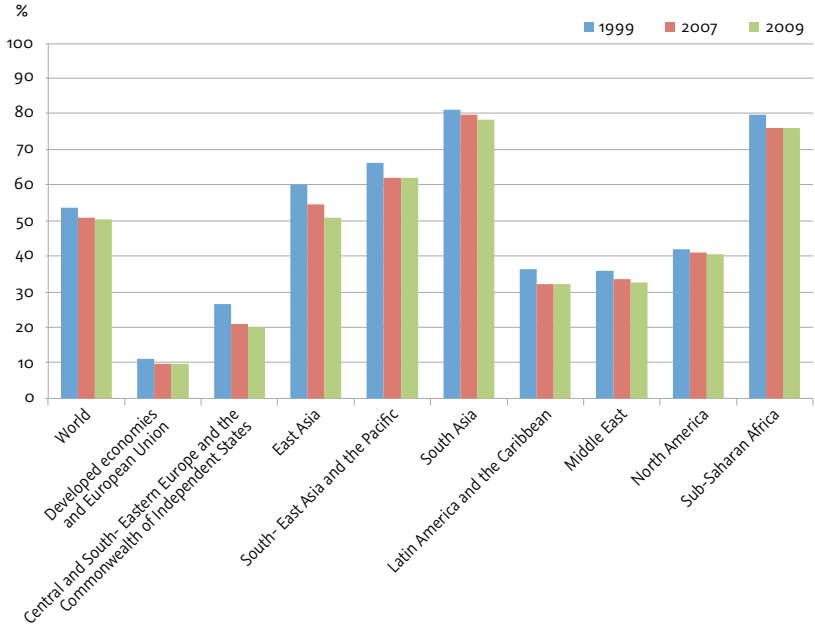
Over the review period and especially following the global financial crisis in 2008, labour markets across the world experienced structural changes that have influenced the demand for skills and TVET. Unemployment worsened and the quality of jobs decreased, especially for youth. Gender differentials in labour force participation placed men ahead of women, and skill mismatches deepened. The crisis impacted labour markets adversely and led to deepening uncertainty, vulnerability of employment, and inequality (WTO and ILO, 2011). Furthermore, measures to improve efficiency and profitability in the economic recovery have often led to jobless growth, as happened in Algeria, India and post-apartheid South Africa.

Although many countries are recovering, the impact of the recent global economic and financial crisis on the capacities of economies to create jobs still reverberates. By all indications, it will take more time for labour markets to return to their pre-crisis levels that it will take for the prodiuctive sector to recover (Eichhorst et al., 2010). For example, in 2009 global GDP fell by 0.6 per cent and unemployment increased from 5.7 per cent to 6.3 per cent. However, in 2010 global GDP rose by 4.8 per cent, but unemployment only declined from 6.3 per cent to 6.2 per cent (Graziosi, 2011). This reflects a pattern of jobless growth. Between 1999 and 2008 global GDP increased by 47 per cent but unemployment declined by only 0.7 percentage points, from 6.4 per cent to 5.7 per cent (ibid.). In 2012 there were 197.3 million jobseekers (ILO, 2012*a*). Projections in 2011 showed that under prevailing growth estimates, employment growth in advanced economies will not recover to pre-crisis levels before at least 2016 (ILO and IILS, 2011). It is estimated that by 2020, 600 million more jobs than there were in 2005 will be required just to keep the ratio of employment to working-age population constant (ILO, 2012*a*).

The economic and financial crisis had a major impact on job creation in developed nations. A study of European Union labour markets (CEDEFOP, 2010*a*) shows that there were probably around 10 million fewer jobs than would have been expected without the crisis, and that this situation will not improve in the next few years. In contrast, emerging economies managed to recover pre-crisis levels of employment in less than two years (ILO, 2012*a*).

They also managed to retain robust job creation. Going forward, however, their employment is expected to grow at a slower pace. Against the backdrop of a rapidly expanding working-age population, overall employment rates are projected to be relatively stagnant for the near future. All regions have managed to reduce the scale of vulnerable employment (defined as self-employment and work by contributing family members) as observed in Figure 6, but vulnerability in 2009 remained high in South Asia (79 per cent), sub-Saharan Africa (76 per cent) and South-East Asia and the Pacific (62 per cent). Among the regions with the highest share of vulnerable employment, East Asia succeeded in reducing its measure the furthest between 1999 and 2009, by 9.4 percentage points, while in South Asia the reduction was only 2.6 percentage points.

Figure 6. Vulnerable employment as percentage of total employment in 1999, 2007 and 2009



Source: ILO, 2010*a*. *Key Indicators of the Labour Market*. Geneva, International Labour Office.

In seeking to address the level of vulnerable employment, TVET systems have focused on increasing the employability of their graduates, but also on enhancing their capacity to function effectively within existing vulnerable labour markets and adjust to other labour market constraints. This has meant enhanced coordination among government departments responsible for TVET and employment policies. It has also created the need for TVET systems to develop mechanisms that identify skills needs early on and make better use of labour market information for matching skills demands and supply. Furthermore, TVET systems have focused more on developing immediate job skills and wider competencies. This has been accomplished by adopting competency-based approaches to instruction and workplace learning that enable learners to handle vulnerable employment, adjust to changing jobs and career contexts, and build their capacity to learn and agility to adapt.

Youths continue to comprise a large number of those in vulnerable employment. In 2010, youth aged 15 to 24 made up one-sixth of the world's population. Of these one-eighth were unemployed, and those in work often had poor-quality and low paid employment. About one-third of young workers in 2010 (152 million) earned less than US$1.25 per day (ILO, 2011*a*, 2012*a*). This situation has placed pressure on TVET to promote the idea of decent work and offer skills for economic areas that are judged to have the most value from the perspective of job creation and shared growth. TVET systems are expected to play an important role in improving the transition of youths from school to work, especially in countries with a rapidly growing youth population. TVET systems in a number of countries have taken steps to improve the transition from school to work and have given attention to different forms of workplace learning, such as apprenticeships, internships and industrial attachments.

Many countries have worked to enhance the development of active and passive labour market policies and institutions with representative actors for social dialogue. Active labour market policies (ALMPs) have targeted the challenge of unemployment more directly, for instance by providing employment subsidies, job-search support and skills upgrading. TVET has played a role in the latter. In addition, efforts have been made to complement initial education and training with other types of skills development programmes linked to job opportunities and other forms of services, such as labour market information, career guidance and employment services, and incorporating entrepreneurship skills. However, empirical evidence on the efficiency of ALMPs is mixed (ILO and IILS, 2011).

The structural mismatch of skills supply and demand has often been emphasized by policy-makers as the key reason for high youth unemployment. The basic assumption is that the creation of new jobs is affected by a mismatch between the skills required by the economy and the skills produced by outdated and inefficient education and TVET systems. The concern for this mismatch has been further exacerbated by increasing demand from enterprises for TVET graduates with relevant skills. Enterprise surveys by the World Bank since 2000 in some ninety countries (several of which were surveyed repeatedly) suggest that skills constraints impede firm performance, particularly in more dynamic environments. The proportion of firms constrained by inadequate worker education and skills averaged about 25 per cent in OECD countries, Europe and Central Asia; 40 per cent in sub-Saharan Africa, and 50 per cent in East Asia and the Pacific (World Bank, 2010*a*, 2011, 2012). Even in Europe and Central Asia, where countries have enjoyed a legacy of high skill endowments, a significant proportion of firms surveyed in 2008 considered deficits in education and skills to be a major or a severe constraint (World Bank, 2010*a*).

This mismatch creates a demand on TVET systems to improve the relevance of the training they offer. The demand on TVET systems has increased for 'soft skills' that support problem-solving, entrepreneurship, learning to learn, and creativity. TVET systems are progressively seeking appropriate measures for reducing the mismatch between the demand and the supply of skills and the overall skills gap. At best, efforts to close the skills gaps have led to the modernization and expansion of TVET provision and the diversification of providers, but this in turn has raised concerns about the equity of access and the quality of different providers. Measures to reduce the skills mismatch have largely involved the presence of more 'demand-side partners' in the design, provision, management, governance and financing of TVET programmes, with a view to making them more demand-led. Specific examples include the development of PPPs and the implementation of mechanisms for ensuring effective coordination with employers, such as through Sector Skills Councils (International Skills Standards Organisation, 2010).

In closing the skills gaps, TVET systems have had to respond not only to the demands of formal jobs, but also the demands of work more broadly. This has been more challenging because work is a more diverse and complex concept that goes well beyond paid employment and/or jobs to include the huge amount of unpaid work done in farms, households and communities, particularly by women. A unifying factor in this diversity is the simple reality of working for a living. Work is a foundation for stability and social advancement for most families and communities. However, there is a growing sense that the dignity of work has been devalued by a narrow economic conception of labour

as a factor of production and a commodity that ignores the deeper individual, family, community and social significance of human work (see ILO, 2006). The absence of work, poor quality of work, lack of voice at work, continued gender discrimination and unacceptably high youth unemployment are all major drivers of TVET system reforms from the perspective of social equity. This is an area where TVET systems continue to be challenged to contribute proactively to the shaping of more equitable societies.

The nature of work, however defined and perceived, is changing due to new technologies, increasing computerization, and the dynamics of modern work organization. These changes are not limited to knowledge-intensive work (Baethge et al., 2006, cited in CEDEFOP, 2011*b*, p. 12). Recognizing these complexities requires a better understanding of what work is, acknowledging that it goes beyond the development of skills for the formal labour market. As a result, new types of skills are increasingly identified as key components of TVET programmes. These include cognitive skills for processing thoughts and acquiring new knowledge, occupational skills, higher-level analytical and problem-solving skills, and social or behavioural skills. As earlier noted, there is a growing recognition that these skills are acquired not only in formal settings, but also at home and in interactions with peers and wider communities (Bacchetta and Jansen, 2011). This recognition demands an acknowledgement that TVET systems straddle all skill types and levels, as well as all learning settings: formal, non-formal and informal. Policy-makers and stakeholders, including donors, are progressively recognizing that substantial TVET learning takes place across different phases and areas of education and training, as well as across different settings of work, community living and in individual lives.

A significant amount of work, employment and jobs has been generated in the informal sector, especially in the developing world. Depending on whether agriculture is included, about 900 million to 2 billion workers are engaged in the informal economy (OECD, 2009). About 300 million of these workers are actually in waged employment within the informal economy or are working informally for formal-sector firms (ILO, 2006). Agriculture accounts for a significant proportion of these workers. Four out of every ten of the world's working women and men are trying to make a living off the land, and in some of the lowest-income countries, three-quarters or more of workers, especially women, are engaged in agriculture (ibid.). While opportunities for paid employment have shrunk, the same is not necessarily the case for work. Furthermore, the responses of TVET systems to labour market demands are not necessarily suitable for the demands of the wider world of work. Thus it is a challenge for these systems to meet these particular demands.

Historically, much of the policy interest in the informal economy has focused on transitions from informal to formal employment, and indeed, has assumed the inevitable demise of informal work as industrialization and modernization take place. However, it is becoming clear that such transitions in both directions are far from inevitable. Moreover, many workers will spend their whole working lives in the informal economy. On the positive side, the informal economy has often been a major source of innovation, entrepreneurship and learning. Up to 90 per cent of TVET opportunities in some West African countries are located within the traditional apprenticeship system (Walther, 2007). On the negative side, it is noteworthy that the informal economy often contributes to poor quality work. It is too often associated with poverty, poor working conditions, low to no pay and poor quality products and services. Thus, it can add to vulnerability.

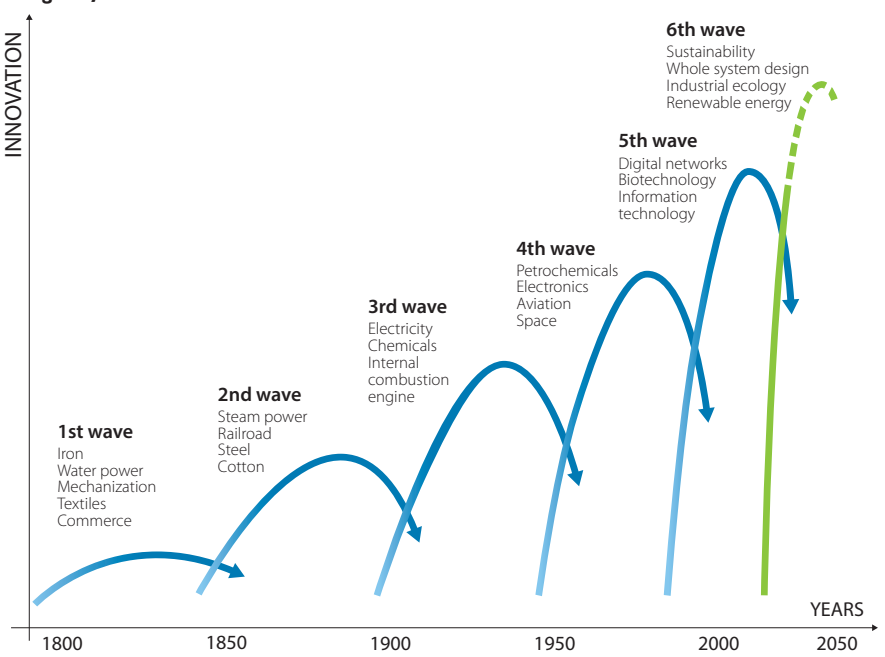
It is also noteworthy that informal work exists in the formal economy, where employers take advantage of lax labour regulations or their weak enforcement to employ workers on a casual labouring or home-based piece-working basis so as to avoid some of the requirements of decent work. In the informal economy itself, research has tended to stress a rough divide between subsistence activities and more entrepreneurial practices (McGrath et al., 1995). It has been argued that the latter are more typically linked to higher levels of initial schooling, as well as access to public TVET and/or relatively structured workplace learning (such as a traditional apprenticeship) compared with the education and training is common among those working at a more subsistence level (ibid.). There are likely to be very different policy options for working with each of these two broad categories. In Pakistan, Janjua (2011) suggests that another vertical distinction is between the better-educated self-employed and the poorer-educated wage labourers in the informal economy.

TVET systems have mounted various initiatives to meet the skills needed by the informal economy, and to build relationships between formal TVET provision and informal economy workers. However, there remain challenges of exclusion from access to traditional apprenticeship, of securing decent work, and most of all, of providing employment opportunities to workers to take advantage of any skills premium. This has led to some attempts to link entrepreneurial informal sector work to export-led growth, for instance in West Africa (Biggs et al., 1996). The informal sector reinforces the need for TVET systems to cover a wider range of skill types and levels, as outlined above (Adams et al., 2013). As already noted, this broadening of the skills coverage facilitates the integration and articulation of TVET systems with other levels and areas of education, all of which makes for progress towards seamless lifelong learning frameworks.

Technological advancements and innovation

The evolution of technology is marked by waves of innovation. Each wave has brought science and technology to new heights, with direct though uneven implications for production and potentially for the standard of living. Independent of its specific historical context, each innovation wave starts with some early adopters of new technologies transforming older production processes and gaining an early competitive advantage. As new technologies spread and become mainstream, the knowledge base widens through new and higher learning that fosters the emergence of a workforce with more sophisticated skills. Competitive advantage from the use of these technologies disappears as the innovation wave wears itself out, as represented by the declining portion of the wave. The mainstreaming of new technologies, and the gradual disappearance of competitive advantage for late adopters, overlap with the emergence of a new wave of innovation at its early stages (see Figure 7).

Figure 7. The six waves of innovation



Source: Adapted from Hargroves, K. and Smith, M.H. (eds.) 2005. Chapter I, *The Natural Advantage of Nations (Vol 1): Business Opportunities, Innovation and Governance in the 21st Century.* London, Earthscan.

The actual length of time during which new technologies remain relevant varies, but as Figure 7 implies, as new waves of innovation take over, their period of relevance becomes shorter. In other words, the period between the appearance of new technologies, their mainstreaming and their replacement by newer technologies, is accelerating and making older technologies obsolete faster than was the case with previous innovation waves, requiring increasingly agile TVET systems and workers.

The past two decades have witnessed growing interest in job skills requirements, technology, and management practices, and their social implications (Handel, 2008). Moreover, the long-term trend of technological change has been towards jobs requiring higher cognitive skills (see, for example CEDEFOP, 2010*b*). Even though the rate of technological progress in developing countries has increased over time, the 'technology gap' between rich and poor countries still remains high (World Bank, 2008*b*, p. 5). This gap results from not only the lack of capacity to develop technology itself, but also the lack of the infrastructure and skills required for technology diffusion. TVET has an important role to play in technology diffusion through its transfer of knowledge and skills.

Technological progress creates the demand for a more knowledgeable and skilled workforce, but also one that can adapt quickly to emerging technologies in a cycle of continuous learning. These workers must possess a minimum set of competencies in reading comprehension, communications skills, numeracy and trainability. This process highlights the need not only to increase access to quality general education for all, but also to expand opportunities for TVET learning. Moreover, failure to promote equal access to quality general education, and quality TVET learning in particular, in a highly innovative technological environment may lead to highly stratified societies, with large numbers of citizens unable to participate and benefit from the opportunities opened up by new technologies. The digital divide is another social equity challenge to which TVET systems should respond.

Substantial effort still needs to be invested to clarify, anticipate and measure the impact of technological change on skills demand. In 2008, Handel noted that, 'researchers have only a general sense of levels of job skill requirements and even less information on rates of change and the specific dimensions along which job skills are changing' (Handel, 2008, p. 1). Nevertheless, the ability to anticipate change and forecast skills demand is central to countries' efforts to develop responsive TVET systems and, more broadly, effective skills policies.

During the review period, the nature and use of ICT has changed dramatically, bringing many and far-reaching impacts and new external demands on TVET systems. In the formal sector, there was a massive increase in ICT use in a large variety of existing occupations, as well as an expansion of new occupations in the ICT sector. For example small-scale farmers have new opportunities to access market information through mobile phones, and this could profoundly shape their decisions on what to produce, and where and when to sell their produce, potentially making a significant impact on poverty reduction. In urban informal economies, ICT is a source of new job opportunities in areas such as mobile phone unblocking and cable television installation, while vehicle mechanics are increasingly required to deal with the computerization of vehicle systems.

TVET is responding to the diverse ICT needs of learners, whether these are related to work, education or citizenship. New courses have been introduced to address occupational changes in the ICT job market, while many TVET providers have shifted provision towards a blended approach, with significantly more self-directed and/or distance learning. In developed countries, new ICT approaches have been introduced to modernize TVET organizations and to manage their administration and finance, including learner records.

In addition to ICT, the impact of green economy activities and technologies is rapidly changing the world of work by affecting the pattern of occupational demand and requirements for workers. According to a synthesis report based on 21 country studies conducted by ILO in partnership with CEDEFOP, the transformations brought by greening economies affect the demand for skills in three ways:

> *The first is 'green restructuring', which implies a shift of activities at the industry level from carbon-intensive to greener production. The second is the emergence of new occupations, with the introduction of new regulations and the development of new technologies. The third is changing skills profiles in existing occupations, as the result of greening production processes and workplaces.* (ILO, 2011*b*)

The synthesis report considers that:

> *all three sources of change – shifts between industries, development of new occupations, and changing skill profiles within occupations – alter the skill profiles of occupations and thus affect training needs and delivery. The scale and*

> *extent of these changes depend in turn on the speed and breadth of technological and market changes in the green transformation. Anticipating the emergence of new occupations, and the growth in demand for some occupations at the expense of others, is particularly important in preparing young men and women for entering the labour market. Workers already in the labour market, midway through their careers or older, need access to retraining to enable them, and their enterprises, not only to move from declining industries and occupations to growing ones, but also to keep their skills up to date with new technologies, market demand, government regulations and so on in their existing fields of work and business.* (Strietska-Ilina et al., 2011, p. xviii)

Hence, the global rise of the green development agenda has impelled TVET systems to address these concerns more systematically, in terms of both how this agenda works and the response to the changing job opportunities and skills needs that a green development agenda brings about. One of the first challenges is to make sure that there will be enough appropriately skilled workers to meet the emerging demand. This has required the development of new qualifications, curricula and training materials, and systems for teachers and instructor training.

Overall, rapid technological progress has had and continues to have significant implications for TVET, and these must be taken into account. First, understanding and anticipating changes has become crucial for designing responsive TVET systems and, more broadly, effective skills policies. Second, the flexibility to adapt the supply of skills to the rapidly, and in some cases radically, changing needs in sectors such as information technology and the green economy has become a central feature of TVET systems. It is essential to involve labour market stakeholders in the design and also the delivery of TVET to ensure a match between supply and demand. Third, globally, the skills requirements and qualifications demanded for job entry are rising. This reflects a need for not just a more knowledgeable and skilled workforce, but one that can adapt quickly to new emerging technologies in a cycle of continuous learning.

Changing modes of work

Globalization has affected labour markets and the demand for skills in different ways, and by implication it has also affected TVET systems. One aspect of globalisation that has had this effect is the emergence of policies intended to attract Foreign Direct Investment and to boost national economic competitiveness. FDI flows to developing countries reached 50 per cent of total FDI in 2010 bringing new technologies and sometimes fuelling the demand for higher-level skills in the recipient countries. However, FDI flows to developing countries remain concentrated in a small number of countries. Among the top twenty recipients of FDI in 2011 there were seven developing countries: Brazil, China, Chile, India, Indonesia, the Russian Federation and Mexico (UNCTAD, 2011). It is noteworthy that the nature of investment countries attract determines the extent to which they raise 'the skills bar'. Countries with low skills that tend to attract FDI at the low end of the production chain hardly benefit from the much-lauded benefits of FDI – knowledge and technology diffusion and increasing demand for skills. Without concerted policy interventions, such FDI can actually trap countries in a vicious cycle of low-end production, low demand for higher-level skills, poor technology and knowledge diffusion (Marope, 2009). In addition to FDI, globalization also has an impact on national economies through competition for markets.

The most important effect of economic globalization has been manifested at the level of the organization of industrial production. The increase in competition and technological advancement have been pushing firms to rethink their production and marketing strategies and processes, and this challenges the traditional rules of industrial organization and industrial relations. Implicitly, labour relations is revisited and more emphasis is put on flexibility and skills improvement of the workforce in order to cope with the destabilizing effect of capital being much more mobile than labour. The phenomenon of globalization is therefore offering firms new options for industrial restructuring, which consist essentially of the fragmentation of value chains and the relocation of tasks within the chain (OECD, 2012). The first component is mainly driven by the outsourcing of tasks, which reduces firm boundaries and at the same time gives them access to new perspectives and strategic solutions that are used by other countries. Through relocation, firms can make use of more convenient economic, political and social resources and capabilities that are present outside the originating country (Faust et al., 2004). Both components induce a globalization of the workforce: a growing

proportion of workers employed in global value chains is located in developing economies (Smith, 2008).

Breaking down the production chain into tasks has also affected ways of organizing work. This has eased the locating of different tasks within a production chain at different locations that offer the best efficiency and profit margin. It has also enhanced firms' ability to organize task teams that are easy to dismantle once the task is accomplished. The agility of constructing and deconstructing task teams has eased the task of assembling a team with the right skill mix. It has also allowed for timely renewal of the skill requirements of the task, and created possibilities for taking on individuals on a short-term basis (using consultants and/or outsourcing). It has further allowed for functional leadership not only within the task team, based on know-how, but also of firms based on the demands of the task at hand. Functional leadership has allowed for flat structures where know-how commands a higher premium than the hierarchical position held in an organization. For graduates of TVET systems, effective functioning in this twenty-first-century way of organizing work demands more than the technical know-how required in production. It demands a range of 'soft skills', not least among which are adaptability to constantly changing teams, adaptability to changing work environments, communication skills, team work and a sense of belonging that is derived from the profession rather than the firm, and constant reskilling that responds to the demands of the task (Cheng and Marope, 2010).

Mainly because of the relocation of tasks to the most economically favourable locations, the centre of gravity of world industrial production has tended to move from North to South, and in consequence most of the growth in the economically active population has taken place in emerging economies. In 2005, about 80 per cent of the population were reported as being economically active in these emerging countries (Gereffi, 2005), while in developed regions the indicator has remained constant or has even decreased.

According to the *Industrial Development Report 2009,* 'the rapid growth in manufacturing of developing countries is, in large part, a consequence of the opportunities offered by the explosive growth of manufactured exports' (UNIDO, 2009, p. 52). The report concluded that, as shown in Box 4, what a country manufactures matters for growth. 'Diversifying production and moving up the product sophistication ladder appear to be important drivers of development in both low- and middle-income countries' (ibid., p. 13).

Box 4. Structural change: the growing role of manufactured exports

1. Developing countries continue to expand their share in the global market for manufactured goods. Since 2000, low- and middle-income countries have continued to capture a market share in both simple and complex manufactured goods, and much of the growth of trade in manufactures has come from South–South trade among developing countries themselves.
2. There is a rising propensity to export across all regions and most products.
3. China and India offer both major challenges and major opportunities to other developing country producers.
4. Fast-growing developing countries are increasingly exporting more sophisticated goods.
5. Countries with diversified export structures tend to grow faster.
6. The growth of trade in tasks has been impressive. One of the major trends in global manufacturing is the fragmentation of production into geographically dispersed, discrete tasks. Task-based production offers the potential for developing countries that had not succeeded in breaking into global markets for products to enter global production chains through exporting tasks.

Source: Adapted from UNIDO (2009).

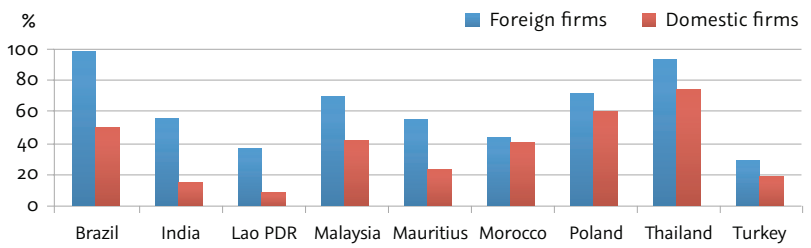
Two waves of outsourcing have been identified, with different implications for economic growth and TVET skills (Brown et al., 2011). The first wave occurred in industries characterized by labour-intensive and mostly low-skilled, low-paid work. Industries such as clothing, footwear and cables for motor vehicles were the first to go global, and the main outcome of this first wave was the large-scale relocation of firms from developed countries to developing or even less developed countries. While the outsourcing of low-skilled activities, particularly to low-income countries, helps to create jobs in recipient countries, it also poses critical skills policy challenges to those countries, because their economies can be trapped in a low-skills equilibrium characterized by low value added, low skills and low wages. As a consequence, in some cases, recipient countries develop a reduced capacity for migrating to higher-level skills. This reduces their ability to adjust to changing markets and hampers their economic growth and national welfare. This type of outsourcing also has consequences for TVET in recipient countries, as it increases the demand to develop technical or job-specific skills in a narrow conception of TVET, and reduces the demand for education and training beyond the basic levels.

In the second wave of outsourcing, more highly skilled work is relocated, enabling companies in emerging economies to develop greater capacity to move up the value chain and compete in global markets. As noted by Brown et al. (2011, p. 108), 'the widely held view that offshoring would be largely restricted to low-skill, low-wage workers in manufacturing industries, such as apparel, toys, and footwear, has been shown to be hopelessly flawed'. Evidence of offshoring high-skilled work is found in financial services, where it began

with back-office functions, such as data entry, and then moved to high-end internal functions, such as financial analysis (ibid., 2011). Not all sectors are prone to offshoring. For example, one sector that appears particularly resistant to offshoring is biotechnology. In the United States the rapidly growing biotechnology industry is generally viewed as an important driver of economic growth. While biotechnology firms headquartered in the United States of America employ only around 200,000 people (0.2 per cent of the national workforce), this represents about 80 per cent of total global employment in biotechnology (Murray and Hsi, 2007).

Bartels and Lederer (2009) estimate that outsourcing markets will expand in the coming years by 15 to 40 per cent every year, with China and India benefiting the most from this growth. Equally, competition based on cost as well as quality will intensify (Brown et al., 2011). This pattern raises concerns regarding the redistributive aspect of globalization, and poses serious risks of polarization of global labour markets, with rapid growth in high-wage, high-skill professional jobs in developed and emerging countries, but low-wage, low-skill jobs in developing countries. While this risk exists, evidence shows that firms exposed to global competition are more likely to have a demand for higher skills and to offer training opportunities for their employees (see World Bank, 2005*b*, 2010*a*). There is also evidence that FDI tends to promote in-service training. As shown in Figure 8, foreign-owned firms, in a selected number of countries, tend to provide more training opportunities for their workers than domestic-owned firms.

Figure 8. Percentage of firms offering formal training by ownership

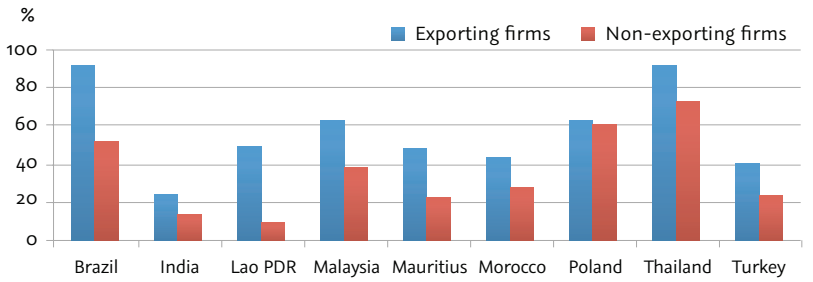


Source: World Bank 2010*a*. *Enterprise Survey 2010*. Washington, DC, World Bank.

Moreover, there is evidence that firms exposed to global competition are more likely to offer training opportunities for their employees. In the case of export-oriented firms, for example, competitive pressure induces innovation and adoption of newer technologies to promote efficiency gains and to comply with international standards and norms. This technological upgrading increases

firms' demand for higher skills, and this in turn fosters a need for developing in-service training and creating stronger links with existing training institutions. As shown in Figure 9, in a range of countries, export-oriented firms offer more training opportunities for their staff than non-exporting firms.

Figure 9. Percentage of exporting and non-exporting firms offering formal training



Source: World Bank. 2010*a*. *Enterprise Survey 2010*. Washington, DC, World Bank.

Finally, firm level data from Latin America highlight important links between technology and skills (World Bank, 2005*b*). Firms using mature technologies demand less formal training than those in the process of adopting new technologies and firms that do not train their employees often state that they can usually find adequate skills in their existing workforce.

In summary, globalization of the economy and the consequent reorganization of the workplace require a more adaptable labour force, compelling all countries to rethink the nature and role of TVET. Globalization intensifies pressure on the TVET sector to supply the necessary skills to workers involved in globalized activity, and to adapt existing skills to rapidly changing needs. As a consequence, there is increasing demand for more demand-driven TVET systems with a greater focus on modular and competency-based programmes, as well as on cognitive and transferable skills, which are expected to help people adapt to unpredictable conditions.

At the same time, internationally, there is recognition that outsourcing policies can lead to adverse social consequences or negative effects on development (see WTO and ILO, 2011). Given the central role of skills in determining a country's capacity to profit from globalization, TVET policies have been pushed to play an essential role in helping economies to break out of the low-skills equilibrium, and therefore allowing more individuals and a larger number of countries to benefit from the gains of globalization. For instance, there is a clear need to develop specialized TVET programmes that provide skills that

will not become quickly obsolete with the rapid changes in industrial structure that globalization processes bring about (see Mertaugh and Hanushek, 2005). The international recognition of qualifications to allow for labour mobility is another crucial dimension.

Shifts in the political landscape

Several major political events occurred during the review period in various parts of the world. Their impact on labour markets depended on the nature of these events, their duration and the future political and economic perspectives of the countries affected by these changes. In Europe for example, the dismantling of Yugoslavia resulted in the creation of Serbia, Montenegro and Kosovo (under UNSCR 1244), to add to the initial independence of Croatia, Slovenia, the Former Yugoslav Republic of Macedonia, and Bosnia and Herzegovina. Serbia, Montenegro and Kosovo (under UNSCR 1244) face serious labour market challenges. The official rate of unemployment reached 17 per cent (18 per cent for women) in Serbia in 2009; 30 per cent (36 per cent for women) in Montenegro in 2005; and 46 per cent (55 per cent for women) in Kosovo (under UNSCR 1244) in 2007. In 2009, 43 per cent of young people were unemployed in Serbia (ILO, 2010*b*). As well as insufficient investment causing unemployment, there are serious structural problems in these labour markets which require a comprehensive revision of strategies and policies.

The wars in Iraq and Afghanistan impeded normal economic development and the emergence of appropriate labour markets in these two countries. Iraq and Afghanistan are still far from political (and therefore economic) stability, and consequently it is premature for the time being to envisage their experiencing a real transition to market rules in the economy and solid democratic arrangements in society. It is not yet clear which directions their economies will follow, what type of institutions will be created, and therefore the kinds of labour market they will have in the future.

The inter-regional and domestic conflicts in some African countries, for example in Côte d'Ivoire, Liberia, Sudan and South Sudan, have destabilized the nations and their economies, and also the region as a whole. The future is unpredictable for countries involved in political, ethnic or religious conflicts. What is certain is that their economies and societies will suffer for many years, affecting a large part of the population. The recent revolutions that took place in Tunisia and Libya, and the conflict in Syria, may also mark important

changes in the Arab world. Similar episodes may happen in other countries both within and outside the Middle East and North Africa region.

In conflict affected poor countries, an average of only 79 per cent of young people are literate, compared with 93 per cent in other poor countries, and 28 million children of primary-school age are out of school, which represents 42 per cent of the world total. Moreover, in certain countries, education systems may actually fuel future violence, for example where they reinforce social divisions or are perceived to be a vehicle of cultural domination (UNESCO, 2011*b*). Apart from the fact that in conflict-affected countries young people are not endowed with the necessary skills, conflicts very often create displaced populations, whose access to education and employment is in many instances restricted.

The impact of conflicts on educational attainment and subsequently on employability has been insufficiently assessed. While Shemyakina (2011) found that the civil war in Tajikistan negatively affected the educational attainment of women, Valente (2011) concluded that this was not the case in Nepal. Different kinds of conflicts (such as civil wars, ethnic conflicts or religious disputes) may have different effects on the populations affected by these episodes. However, any form of conflict leads to insecurity, poverty, famine, as well as direct casualties and human losses. Conflicts are generally associated with a low level of development: out of forty-eight armed conflicts recorded between 1999 and 2008, forty-three were recorded in low-income countries (UNESCO, 2011*b*).

In the aftermath of armed conflicts, the international community has done much to support disarmament, demobilization and reintegration (DDR) programmes. Box 5 details three broad approaches to reintegration as put forward in an *Operational Guide to the International Disarmament, Demobilization and Reintegration Standards* (UNDP, 2010*b*). However, little is known about measuring DDR impact, mostly because of the lack of adequate data. Nonetheless, several programmes have been severely criticized by some experts for not having any significant impact in terms of reintegration due to their 'one size fits all' approach, disregard of local realities, neglect of communities, and narrow economic reintegration assistance that was not linked to local market opportunities, as well as project duration being too short and of insufficient quality (see Pouligny, 2004; Derksen, 2014).

Box 5. Three broad approaches to reintegration

1. SHORT-TERM STABILIZATION (REINSERTION)

Purpose/Objectives

- To draw ex-combatants away from fighting or criminality until a peace mission is deployed, or security sector or political reform is completed;
- To provide rapid transitional support for resettlement and short-term income-generating opportunities to all potentially disruptive ex-combatants.

Activities

- Information, counselling and referral services;
- Transitional support schemes (food, clothing, transportation, other);
- Short-term labour-intensive projects.

2. EX-COMBATANT FOCUSED REINTEGRATION

Purpose/Objectives

- To provide ex-combatants with specifically designed, individually focused sustainable solutions for long-term reintegration;
- To engage ex-combatants in sustainable micro-projects to reduce the long-term security risk they present.

Activities

- Information, counselling and referral services;
- Micro-project development through grants;
- Training, technical advisory and related support services.

3. COMMUNITY-BASED REINTEGRATION

Purpose/Objectives

- To provide communities with tools and capacities to support the reintegration of ex-combatants, together with internally displaced persons, refugees and other special groups;
- To support ex-combatant reintegration as a component of wider, community-focused reconciliation and recovery programmes.

Activities

- Community projects with greater inclusion of all social actors;
- Peace-building and reconciliation activities;
- Activities to increase local security.

Source: Adapted from UNDP (2010*b*).

In many post-conflict contexts, there is demand for TVET to play a major role in reintegrating the ex-combatants into civilian life, for example by recognizing prior learning, retraining, professional reconversion and skills upgrading. The flexibility to adapt to diverse needs, combined with support services such as guidance and counselling, is a desired feature of TVET systems in these contexts. TVET efforts in DDR contexts need to improve the relationship between programmes offered and the needs of the labour market. Another key focus is the development of mechanisms for better understanding of the support needed for individuals in the transition from military to civilian life (see Veal, 2008).

Conclusion

As discussed above, the list of contextual factors driving the development of TVET in the review period has been diverse, complex and rapidly changing. The factors involve economic, social, and political forces. These contextual factors are multidimensional, involving economic growth, social equity and the sustainability of development. What emerges in this chapter is that the relevance of TVET systems for economic development derives from their dynamic interaction with the various geographic and temporal contextual factors and demands. Although TVET has been initially pushed by the external contextual factors identified in this chapter into reforms that are illustrated in Chapter 2, this dynamic interaction with external pressures has produced reforms to the internal functioning of TVET systems themselves. These internal reforms are examined in Chapter 3. Over time, external forces like those described in this chapter have triggered external and internal TVET system reforms, albeit not always in a systemic or consistent way.

Chapter 2

Improving TVET's Contextual Responsiveness

During the period under review, the reform of TVET systems was driven by the desire to make TVET more responsive to external demands. Although uneven and often inadequate in their impact, most of the reforms were initiated in response to the contextual factors outlined in Chapter 1. The response to these external factors has mainly been through policy reforms, but also through the introduction of new programmes that were not necessarily preceded by policy formulation. Be they policies or programmes, this book retrospectively groups the responses into those intended to improve TVET systems' contribution to economic growth, to social equity, and to the sustainability of development.

Policies and policy measures to support economic growth

Following the Seoul Congress in 1999, awareness increased of the need for TVET to shift from a supply-driven mode to one that is driven by economic demand. Perhaps because TVET systems tend to be close to the labour market, economic demands have tended to be narrowly or even instinctively conceived as labour market demands. The review period therefore saw the development of policies intended to improve the alignment of TVET provision to labour market demands. The reform of TVET in Mauritius and the setting-up of the country's NQF provides an example. Critically this meant that policy-makers were committed to ensuring that the education and training landscape responded to the need for the country to engage with new technologies and meet the varied skill requirements of sectors of the economy. The importance of the economic demand and expectations for the NQF could be seen in the arguments used in favour of the Mauritius Qualifications Authority Bill in parliament. It was stated that the NQF would 'Assist to support Mauritius to become a "knowledge economy" and in particular facilitate the integration of the ICT hub through "the development of a culture of training" ' (Government of Mauritius, 2001, p. 1, cited in Marock, 2010, p. 12).

Another example of efforts to improve the alignment of TVET provision with labour market demands is found in Mexico, where the modernization of technical education and training was linked with the ratification of the North American Free Trade Agreement (NAFTA). NAFTA was expected to lead to changes in Mexican industry profiles, with many industries requiring more advanced technology and more efficient and competitive production capacity to compete internationally (Anda, 2009). Modernization of TVET

was viewed as important to the success of NAFTA. Similarly, in Tunisia, with the initial progress towards a free trade area with the European Union, the development of TVET was considered to be an instrument of modernization of the economy that would increase the competitive capacity of enterprises in the contextual setting of liberalization and globalization (Ben Sedrine, 2009). Cambodia provides another example: the National TVET Development Plan was intended to support enterprise growth by providing a skilled workforce (UNESCO, 2013*b*).

Efforts to support economic growth with the development of skills closely aligned to the needs of labour markets include an array of different policy measures. These measures have addressed the needs for better information about labour demand and supply, improving the performance of labour markets, strategies to reach vulnerable populations, and achieving a balance between general competencies and specialized skills. Policy measures introduced to improve the alignment of skills development with labour market demands include: i) better identification and anticipation of labour market skills needs, ii) measures for closing skills gaps, iii) improving youth employability, iv) meeting the skills requirements of the informal sector, v) meeting the skills demands of the rural economy, and vi) providing an appropriate mix of broader competencies alongside specialist skills.

Better identification and anticipation of labour market skill needs

Enhancing the responsiveness of TVET systems to labour market demands requires an in-depth understanding of not only the skills needed to support the desired economic development, but also of the skills required in the short, medium and long term. During the review period, efforts were made to identify current labour market demands for skills, and also to look ahead and anticipate future demands. The outcome of these efforts was translated into competency-based curricula and NQFs in some countries. Curricula and qualifications reforms and government efforts to review institutional frameworks are discussed in Chapter 3.

The Philippines, Chile and the Netherlands provide examples of efforts to identify and anticipate labour market skill needs. The Philippines went systematically about the task of assessing labour market skill needs. The Technical Education and Skills Development Authority (TESDA) entered into a close partnership with employers and industry groups for this purpose. Regular industry consultations and dialogue in priority sectors were undertaken by TESDA at national and local levels to take into account national, sectoral and

local requirements and peculiarities. Based on consultations held in 2011, labour market intelligence reports provided TVET stakeholders with important information on the skills demand and supply situation in specific sectors, as well as insights into trends, issues and challenges prevailing in the local and international arena (UNESCO-Bangkok, 2013).

In other examples of efforts to identify and anticipate labour market demands for skills, the Chile Qualifies project, which started in 2002, conducted labour market analyses that were used to define standards, occupational profiles, labour competencies, and the evaluation/certification process for certifying competencies. The mining sector was among the beneficiaries of this effort. The Mining Cluster on Certification of Labour Competencies highlighted the importance of identification and anticipation of skill needs, and of acquiring a training culture that would permeate all levels of training.

The Netherlands Sector Skills Council (SSC) system exemplifies other efforts to improve the alignment between demand and supply. Employers are essentially the starting point. They work through sectoral skill bodies called 'Kennicentra' ('knowledge centres' in English) to identify and express the skills that are required by a sector. Their diagnoses of what skills and curricula are needed is provided to BVE Raad (the Dutch Council for Vocational and Adult Education), which then supplies this information to regional technical colleges so they can develop a curriculum based on the standards and requirements set by employers. The SSC system proved effective because of the partnerships built between TVET stakeholders.

These efforts have stimulated investigations and research that have enabled policy-makers, strategists and other stakeholders to identify the sectors and occupations most likely to generate employment growth, and those likely to experience shrinkage. An improved understanding of future employment potential has also enabled the forecasting of which qualifications are likely to be in increasing or declining demand. These efforts have also facilitated planning for the replacement of skills lost through workers changing positions, migration, retirement and other factors. Most importantly, a better understanding of future employment potential has enabled a better understanding of how available demand-side information compares with the supply of skilled labour entering into or already present in the labour market.

The knowledge acquired through this process in the Netherlands was particularly crucial for reducing the mismatch between the demand for and the supply of skills. It also provided critical information needed to guide reforms and innovations in the TVET system. It contributed to curriculum

reforms and the updating of qualifications required to meet current and future skill needs. Countries that do not readily have the capacity to identify or anticipate these needs are becoming painstakingly aware of this capacity gap and are taking remedial actions. As an example, in the Baltic states efforts to forecast labour market demand began to take place around 2004 (see Martinaitis, 2012). This type of labour market analysis and forecasting has also been recently introduced in Western Balkans countries such as Serbia (Arandarenko and Bartlett, 2012).

Improving capacities to anticipate skills requirements and improve the match of skills supply with demand has given rise to a range of quantitative and qualitative approaches at national, regional and sectoral levels. Depending on specific country contexts and the capability of institutions, these approaches have been used to improve skills matching in the short, medium and long term. Large-scale studies of labour market skills supply and demand are usually carried out by government agencies, sometimes with international financial support. On a smaller scale, special studies have been conducted using surveys of employer opinions on how skill needs are evolving, or the analysis of occupations and skills sought in job advertisements. Constraints to the conduct of these studies have included a lack of human and financial resources, lack of technology, and limited capacities for research and analysis.

The European region uses nation-wide quantitative projections that comprehensively cover all sectors of the economy (Wilson and Zukersteinova, 2011). The approach, however, is costly and data-intensive and therefore not feasible for all countries. Another approach uses employer surveys to ascertain skill gaps and deficiencies. The advantages of this approach are that it is easy to set up and it requires the direct involvement of employers, making it more responsive to their needs. However, on the down side, findings of surveys can be subjective and inconsistent. Overall, observatories and sectoral, occupational or regional reviews that use both quantitative and qualitative data are considered more holistic, provided that they are comprehensive in their coverage.

Microanalysis of various aspects of the knowledge, skills and attitudes required by occupations in a particular sector, or a family of occupations, has also been used to guide TVET developments. These microanalyses have often been undertaken by a broad group of stakeholders acting collaboratively under the leadership of government. Sometimes leadership is offered by social partners, sectoral and/or employee organizations. Focus groups, round tables and occupational studies are used by these stakeholders for microanalysis. In some cases, countries have established special entities such as sectoral councils and

observatories to analyse current and future labour market needs. The results are used for human resource development (HRD) purposes, including the identification of training needs and standards, or competencies required in qualifications, curricula and assessment in TVET systems.

In 2003 Jordan commenced work on a labour observatory, with networking between public and private institutions to support the economic reform process (see ETF, 2010). Today the hub institution is part of the National Centre for Human Resources Development (NCHRD). By 2009 the observatory had a fully functioning human resource information system in place which provided support to the Government of Jordan's Employment and Technical and Vocational Education and Training (E-TVET) sector reform plan. The observatory has published a handbook on vocational education and training indicators, and a profile for the tourism sector that can be adapted to other sectors (ibid.). According to Leney (2009*a*), the observatory has helped create new indicators relevant to the reform process, and has given important stakeholders opportunities to network with one another. Analytical reports have been produced and discussions launched on how to integrate the analysis in mainstream reforms.

The success of efforts to anticipate skill requirements has been uneven. The World Bank reported that these efforts in sub-Saharan Africa have been largely unsuccessful (Johanson and Adams, 2004). In the 1990s, twenty-two out of twenty-four World Bank vocational education and training projects in sub-Saharan Africa included the setting up of labour market observatories. Virtually all of the observatories turned out to be much harder to establish and operate than expected. Among the reasons were the absence of information needed for analysis and difficulties in working across organizational boundaries. Similarly, disappointing results were registered in Tunisia and South Africa. In Tunisia, the national observatory of employment and qualifications failed to provide the data necessary for decision-making (Republic of Tunisia, 2013). Among the reasons were the lack of coordination among stakeholders in identifying skills needs, and the scattered nature of data collection and processing. In South Africa, the Singizi Report of 2007, the Nedlac Report of 2008 and the Ministerial Task Team report of 2012 have each raised questions about the effectiveness of Sector Education and Training Authorities (SETAs) as instruments for guiding investments in skills (Kraak et al., 2014).

Measures for closing skills gaps

As explained, closing skills gaps has proven challenging. In Cambodia, the National Employment Agency (NEA) developed an information base where employers could announce their needs for workers, and where new graduates, out-of-school youth and unemployed people could find information on jobs opportunities (UNESCO, 2013*b*). In Tunisia, the active labour market programmes, initially supported by the World Bank, established an information system that allowed job seekers to identify opportunities outside their local labour market and employers to recruit from a larger pool of available skills. The same programme supported the travel costs of individuals attending job interviews (see World Bank, 2006). In Italy, in the Riviera del Brenta industrial district, footwear firms pooled their investment in training and collectively upgraded product-market strategies in order to compete in high-quality international markets (see OECD, 2012). These efforts notwithstanding, the mismatch between skills demand and supply has actually been increasing rather than shrinking (World Bank, 2012).

Improving youth employability

Enterprise surveys have shown that in many countries workers without requisite skills and education are a constraint to growth (World Bank, 2008*a*). 'Employers not only express their dissatisfaction with deficiencies in relevant experience and technical skills but also with soft skills such as personality traits, social graces, interpersonal skills, language, and personal habits' (Jaramillo and Angel-Urdinola 2011, p. 5). Ensuring that youth have the requisite skills for employment is important to economic development. As a consequence, many countries offered programmes to improve youth skills and employability. Turkey, among others, has focused on equipping students with skills that are useful for running one's own business and becoming an entrepreneur. The United Kingdom and Australia have attempted to modernize apprenticeships and use them to provide training for youths in non-traditional occupations. Other measures for youth employment have focused on easing transitions from school or training to work and jobs, such as careers information, advice and guidance services.

Chile's '*Jovenes*' programme provided unemployed youths with 'demand-driven' training and other supporting services such as counselling and health screening. The programme was carefully evaluated and shown to be cost-effective, with the result that it was adopted in some other Latin American countries. Similar programmes have been introduced in Argentina, Colombia, the Dominican Republic, Panama, Paraguay and Peru.

The Inter-American Development Bank (IADB) conducted a thematic review of youth employment programmes in Latin America that have closely followed Chile's *Jovenes* model (Ibarrarán and Rosas-Shady, 2008). Where the impact of the programmes were positive, the benefits were often for women, the youngest participants and those living in large urban centres. The authors observed that the economic environment prevailing in each country was an important factor influencing programme success.

Other countries developed online career guidance and counselling, and information on skill needs. The Tunisian Employment Agency, for example, developed an online portal which provides information on job opportunities. The portal allows young job seekers to register with the goal of finding appropriate jobs. Another example of this approach to improving youth employment is from the Department of Labour of the United States of America, which developed two online portals, 'My Skills, My Future' and 'My Next Move' to help students and workers identify their skills and the need for new or upgraded skills so that they can succeed in the labour market (see OECD, 2012).

Meeting the skills requirements of the informal sector

The informal sector is a persistent feature of the economic landscape in many countries. In sub-Saharan Africa, for example, the informal sector accounts for the majority of new jobs being created (Adams et al., 2013). Its economic and social importance provides a strong case for attention to improving skills development in the informal sector. Reaching the informal sector with skill initiatives, however, has proven difficult for the small firms that dominate this sector. Reasons include the high opportunity cost of training in these firms, the low cash flow available to pay for training, the need for and cost of multi-skilling, the lack of capacity to identify training needs, the absence of economies of scale for training in small firms, and a limited supply of trainers serving the special needs of the informal sector (ibid.). The presence of the informal sector as a source of employment has led to expansion of TVET entrepreneurship programmes for those seeking to create their own employment in the informal sector, and a greater understanding of the

importance of traditional apprenticeship schemes for those finding work in this sector.

TVET has played a role in improving skills, productivity and earnings in the informal sector by promoting entrepreneurship education. This has assumed multiple forms. For instance, entrepreneurship training programmes typically combine the acquisition of business and technical skills by embedding in the curriculum examples of running a business, inventory control, quality assurance, pricing and marketing. Many TVET programmes include modules on entrepreneurial attitudes and starting a new business as part of the technical training. These programmes foster practical experiences by requiring learners to produce a plan for starting a new business as part of their final assessment. TVET programmes have also contributed to entrepreneurship education by including information, advice and guidance (IAG) services on self-employment options.

The delivery of IAG on self-employment has been carried out by instructors in TVET institutions, but also by partnerships with small enterprise development agencies and systematic referrals to off-site or online provision. These interventions have also provided post-TVET programme support for encouraging self-employment. ILO programmes, for example, have provided credit, business advice and other inputs for post-qualification programmes, and established small business incubators on TVET provider sites. Other examples have included the transformation of initial TVET providers into entrepreneurship development institutions, as found in India and Malawi. There have also been specialist programmes of TVET for self-employment outside formal TVET structures. These have included large numbers of NGO projects, such as those in Cambodia (Cheng, 2010) and the major global Training for Rural Economic Empowerment (TREE) programme of the ILO (see ILO, 2009).

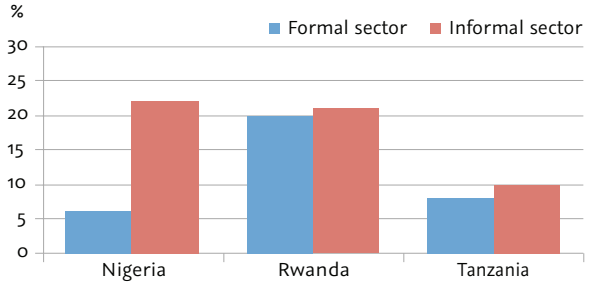
Training provided directly by informal-sector employers in traditional apprenticeships accounts for much of the TVET available to those seeking employment in the informal sector. The traditional apprenticeship represents an agreement between a master craftsperson and a young person or their parent to provide training in the workplace for a period of time in exchange for small fees and/or the labour of the apprentice. This form of skills development is present in many countries, especially sub-Saharan Africa. While it provides skills at an affordable cost for many, there are long-standing concerns about the quality of this form of TVET, and hence the value of the skills imparted. This has led to efforts to improve the quality of training offered in traditional apprenticeships, beginning with efforts to improve the skills of small business owners, the so-called master craftspersons.

Programmes with the objective is to improve traditional apprenticeships by the upgrading of master craftspersons were of two main types. The first sought to improve the technical skills of the master craftpersons and provide access to newer production technologies. Criticisms of traditional apprenticeships often refer to apprentices being taught outdated methods of production. The actions taken to address this problem included consultancy services that target productivity improvements leading to new skills for the master craftsperson, and study tours for entrepreneurs to visit similar producers in neighbouring countries to investigate new products and approaches. This has been practised with ILO support in a number of African countries, including Ghana and Togo (King and McGrath, 2002). Short courses for skills and technological upgrading were also offered, such as the Informal Sector Skills Development Programme in Malawi, which offered skills programmes ranging from one week to six months in duration to a variety of clients (SADC and UNESCO, 2013), and the various programmes offered by the Small Enterprise Development Unit in Saint Lucia (Chitolie-Joseph, 2008). The second type of programme with the objective to improve traditional apprenticeships involved upgrading the pedagogical skills of the master craftsperson. This was often linked to attempts to make traditional apprenticeship curricula and pedagogy more systematic as, for example, in Benin, Cameroon and Senegal (Walther, 2007).

The focus on traditional apprenticeships has included attempts to develop systems that allow the apprentice to alternate between experiential learning and periods of theoretical training offered through regular public TVET programmes or in specifically developed programmes. In Tunisia, for example, the national training agency, L'Agence Tunisienne de la Formation Professionnelle (ATFP), requires that traditional apprentices attend training in a specialized centre for two days a week to learn basic numeracy and reading skills, as well as occupation-specific skills (ETF and World Bank, 2005). This can be important since many youth entering these apprenticeships lack the literacy needed to succeed. Other initiatives to improve the quality of traditional apprenticeships have included introducing competency standards for apprenticeship occupations in NQFs. Testing and certification of apprenticeship skills was expected to help sort out good training from bad training in apprenticeships.

Efforts to improve traditional apprenticeships have economic and social equity rationales. Those earning their livelihoods in the informal sector are often the most vulnerable. Raising productivity in the sector can improve earnings and reduce poverty. Although the traditional apprenticeship is commonly understood as a route to informal-sector work, there is evidence from sub-Saharan Africa that traditional apprenticeships have been a significant route to formal-sector employment (Adams et al., 2011). In Rwanda, for example, 20 per cent of workers in the formal sector have had a traditional apprenticeship in the past (see Figure 10).

Figure 10. Percentage of formal and informal sector workers in Nigeria, Rwanda and Tanzania who had a traditional apprenticeship



Source: Adapted from Adams, A.V., Razmara, S. and Johansson de Silva, S. 2013. *Improving Skills Development in the Informal Sector: Strategies for Sub-Saharan Africa*. Washington, DC, World Bank. Figure 3.5, p. 71.

TVET was challenged in its effort to reach out and promote economic growth through self-employment in the informal sector. Adding extra content to formal programmes that were designed initially for formal wage employment, as many TVET programmes are, has not always been successful. Staff and students have lacked a clear motivation to take such content seriously. Even where programmes are well designed, the very real challenges in moving straight from formal TVET to sustainable self-employment should not be underestimated (Adams, 2009). Access to business support services is an important part of making this transition. More needs to be learned about these programmes through careful evaluation of their success in supporting the transition of TVET completers to sustainable self-employment.

Meeting the skills demands of the rural economy

Policy measures to support economic growth with skills have included measures to reach those living in rural areas. The limited opportunity for millions living in rural areas to acquire the skills and knowledge needed to develop their capacity for work and life is a major barrier to successful development and the achievement of the Millennium Development Goals (MDGs). Indeed, the unemployment and underemployment of over a billion people in the rural sector is arguably the greatest single obstacle to meeting the goal of halving absolute poverty by the year 2015 (United Nations, 2012).

Globally, over 900 million people live on less than US$1 per day, and most of them are in developing countries. Three out of every four of this number in developing countries live in rural areas, and most of them depend directly or indirectly on agriculture for their livelihoods. Moreover, for the majority of people who live in rural areas, wage employment is not a prevalent form of work. In this context, underemployment and low earnings, rather than open unemployment, are the challenges most people face (World Bank, 2011). As such, agricultural growth has historically had an important role in poverty reduction in many countries (see Ravallion, 2004; Besley and Cord, 2006).

One of the main avenues to improving living standards in agrarian economies is increasing productivity in farming. Low productivity in the farming enterprise is caused by many factors, including lack of information, knowledge, technology and skills related to farming. Basu and Majumdar (2010, p. 1925) have posited that:

> *A broad strategy for rural development has to be multidimensional. Building basic capital for economic growth, employment generation, and poverty alleviation in rural areas requires:*
>
> – *Building human capital through basic education, vocational education and training, healthcare and nutrition;*
>
> – *Strengthening of knowledge and information capital through access and ability to use scientific, technological and market information related to agricultural products, farming techniques and crafts and trades;*
>
> – *Building financial capital for the poor through micro-credit, rural banking, rural credit policy and rural employment guarantee schemes for people.*

Capacity development is at the heart of successful strategies for agriculture and improving rural livelihoods (ibid.). Rural populations need not only skills that enhance their productivity but also skills that can enhance their well-being and possibilities for participation as active citizens, as part of a wider rural lifelong learning agenda. Rural transformation has required and still requires skills to improve the overall environment of rural areas with improved basic amenities and services, improve the capacity of poor rural people to manage many risks arising from personal circumstances, national and global factors and natural hazards, strengthen individual capabilities through improved education and skills development, and strengthen the collective capabilities of rural people, building social capital, improving governance, promoting participatory practices, and expanding their own membership-based organizations (International Fund for Agricultural Development, 2010).

There are examples of programmatic interventions that have been implemented in rural settings. One of the successful models implemented in several countries in South-East Asia is multi-purpose community learning centres (MCLCs). These centres aim to empower marginalized groups and poor communities by providing lifelong learning and income-generating opportunities for people living in villages, slums and poor urban areas. They have been organized and managed by the local communities. Some of their primary target audiences have been out-of-school children as well as underprivileged youth and women. They have served as places for community learning, flexible and participatory development activities which even allowed for the development of leadership skills.

Another example, from the period under review, is India's Community Polytechnics. These were originally established to ensure that rural areas got a fair share of the benefits from investments in the technical education system. They were to impart skill development training to intended target groups and to provide support services to large rural populations (Basu and Majumdar, 2010). Community Polytechnics served as focal points for science and technology applications in rural areas. They generated self-employment and waged-employment opportunities through non-formal, competency-based training and need-based courses in various trades or multiple skills. The scheme involved about 700 community polytechnics throughout India (ibid).

A further successful example is the *Serviço Nacional de Aprendizagem Rural* (SENAR) in Brazil. SENAR is a public institution that is linked to the National Agriculture Confederation in Brazil. Its goals were to organize, administrate and execute rural vocational training and promote the social advancement of men, women and young people who work in rural areas throughout the country. SENAR developed integral activities and expanded benefits to workers and small rural producers. The organization worked in a decentralized way and with trade unions as principal collaborators. SENAR went to where learners lived, using a great variety of facilities in rural areas, and thus reducing transport and facilities costs for learners.

Providing an appropriate mix of broader competencies alongside specialist skills

Skills for economic development include a mix of technical and soft skills. Empirical evidence and TVET policy reviews conducted by UNESCO suggest that TVET systems may not as yet sufficiently support the development of the so-called soft competencies (see UNESCO, 2013*b*, 2013*c*, 2013*d*). Many countries have, however, adopted competency-based approaches as measures for reforming TVET curricula. For example, the HEART Trust National Training Agency of Jamaica adopted this approach, with a particular emphasis on competency standards and balanced job-specific and generic skills. Competency standards aimed to ensure that the training was linked to industry and was up to date, and that competences were integrated into training programmes, along with the needed knowledge, skills and attitudes. The balancing of skill types was to ensure adequate attention was given to job-specific skills as well as the conceptual and experiential knowledge necessary to enable individuals to grow and develop in the workplace, and more generally in society (HEART Trust NTA, 2009, p. 3).

Policy measures and programmes intended to diversify skill types and competencies have raised important questions. Questions have been asked about which competencies and skills are the most important, and for what circumstances and purposes. Countries have grappled with this not only for their TVET systems but also for other levels of education and training. In response, the curriculum development agency of the Maldives developed a set of eight transversal competencies that learners should acquire throughout their school careers, and that should be introduced into the TVET curriculum: i) practising Islam; ii) living a healthy life; iii) thinking critically and creatively; iv) using technologies and media; v) understanding and managing self; vi) relating to people; vii) making meaning; and viii) learning

for sustainable development (Education Development Centre, 2011). Several countries including Indonesia, Japan, Malaysia and Thailand, introduced a set of transferable skills into their qualifications framework and TVET curricula (UNESCO-Bangkok, 2011). CEDEFOP (2013*a*) observed a similar trend in Europe.

Policies and policy measures to promote social equity

The previous section focused on policy measures to promote economic growth. The section highlighted measures that address the needs of labour markets for better information about labour demand and supply, measures to improve the performance of labour markets, and measures to reach vulnerable populations and balance the need for general and specialized skills. It described efforts to match skills demand with supply to promote economic growth. This section reviews policies that have broader social objectives, including those that have sought to expand access to TVET learning opportunities especially for marginalized groups. These policies have been instituted as a way of increasing the contribution of TVET systems to easing the transition to work for the most disadvantaged, and making the workplace more inclusive.

Better targeting of marginalized groups

The response of TVET policies to the disadvantaged has focused on addressing a series of weaknesses in formal TVET provision that have made physical access difficult. Steps to include specific disadvantaged groups in mainstream TVET programmes have often required changes to institutions and their practices. This may be in terms of facilities, such as providing suitable sanitary and changing facilities, or making buildings more accessible to people living with physical disabilities. It has also involved other practical responses, such as developing Braille materials, offering assistance in note-taking for those with hearing impairments, and allowing special arrangements for people with disabilities affecting their ability to take examinations. Crèche facilities for the children of staff and students have been found to make a significant difference in female participation in TVET. Examples of this are found in New Lucena Polytechnic College in the Philippines (Misola, 2010) and the Fife Women's Technology Centre in Scotland (Collett, 2008).

Reforming TVET institutions to make them more inclusive also calls for new pedagogical approaches and learning materials. A more diverse population of learners requires different approaches to learning. Learners with dyslexia, for example, require improvements to the readability of hand-outs. Responding to different learner needs has meant developing new approaches to timetabling and attendance requirements that made it easier to fit formal learning around maternal responsibilities or work patterns. Making TVET more inclusive, however, requires going further to include references to diverse experiences of learners in a wide range of learning materials, and developing strategies for teaching and learning that build on the learning needs and approaches of diverse TVET learner groups.

Adapting the curriculum to specific group needs can have a positive effect on access to TVET, as illustrated by traveller children in England. These children were found to leave school early, and this led to a project that was responsive to parents' and pupils' requests for a more practical curriculum. A home-school agreement committed parents to sending their secondary school-aged children to school four days a week and to a private welding TVET provider for one day a week. In addition, distance-learning materials were developed for when the families were travelling, and they made a commitment that all distance work would be completed. This resulted in the eradication of early school leaving from this community, and the achievement by all boys in the pilot group of a welding qualification that was of direct benefit to their life and work in travelling fairgrounds (Department for Education and Skills, 2003). This case illustrates responsiveness to community needs, grounded here in a distinct culture, and the ability of a number of public institutions and a private TVET provider to collaborate.

Another example refers to steps taken to address the needs of a socially marginalized population because of health problems. Individuals suffering from HIV and AIDS have become a particularly important issue in a number of countries. The Botswana Training Authority (BOTA), for example, established a HIV and AIDS Division that is responsible for promoting HIV and AIDS interventions in TVET institutions. It has developed a model HIV and AIDS policy for TVET institutions that requires all institutions that apply for registration and accreditation to have their own related policies in place and to provide evidence that they are actually implementing HIV and AIDS-related activities. BOTA has also introduced a range of other initiatives, such as *Emang,* a quarterly learner-driven magazine on HIV and AIDS, and an annual HIV and AIDS drama competition. HIV and AIDS components have been made compulsory for any qualification in the Botswana NVQ Framework. Also, HIV and AIDS committees have been established in all public TVET institutions,

and they are required to provide monthly reports on HIV and AIDS-related activities to BOTA (SADC and UNESCO, 2013).

Removing financial barriers has also been regarded as an important means to improve the access and participation of marginalized groups. Several countries have established financial incentives for disadvantaged groups. In Lao People's Democratic Republic, the government established a voucher system to expand enrolment of disadvantaged groups, particularly in rural areas (UNESCO, 2013*c*). Other measures included the setting-up of equity-oriented training funds which provided skills development opportunities for disadvantaged groups including women, rural youth and those in the informal sector. Cambodia established a National Training Fund with the support of the Asian Development Bank. The Fund focused on poverty reduction by developing programmes for the poorest communes designed to provide basic income-generating skills based on local needs (see UNESCO, 2013*b*).

Countries have also supported TVET institutions that have higher proportions of disadvantaged students by investing in the quality of TVET, including teaching staff and leaders, infrastructure and the pedagogical environment. Countries like China have developed effective strategies that support disadvantaged TVET institutions by linking them with best-performing institutions. An example of this type of measure is the Shanghai consortium of schools. The consortium includes TVET schools that group strong and weak, old and new, public and private schools in clusters, with a strong school at the core (see OECD, 2012).

Easing the transition to work for the most disadvantaged

Steps to improve TVET's contribution to social equity require efforts to ease the transition from initial TVET to work. This has been a particular challenge for disadvantaged learners. In many settings there is a concern that TVET learners are being trained for specific trades that reinforce stereotyping and/or lock graduates into oversaturated labour markets. For instance, the failure to consider genuine possibilities for sustainable employment has been identified as a major weakness of some post-conflict TVET programmes (UNESCO, 2007).

TVET for 'special groups' too often seems to be an entirely supply-side solution. This has been avoided in cases where labour supply and demand are linked through rigorous labour market analyses. For example, in 2003 Denmark launched a campaign 'We Need All Youngsters' with the aim of fostering equal opportunities in the labour market by promoting their educational attainment, particularly in TVET, in areas where skills were in demand (OECD, 2012).

Integrating women or men into areas of specialization in which they were previously under-represented is important to diversifying opportunities for TVET. The *National Strategy for Promotion of Gender Equality in TVET* in Bangladesh set clear priorities and targets for breaking gender stereotypes. The *Strategy* was developed by a Gender Working Group comprising fifteen representatives from government ministries and departments, employers, workers and civil society organizations. It provided an overview of the current status and nature of gender inequalities in TVET, highlighted the priority areas for action, explored a number of steps to promote equal participation of women in TVET, and outlined the way forward (ILO, 2012*b*). In Cambodia, TVET programmes set out to empower young women in traditional trades by upgrading their skills and technology in silk weaving. This led to the revitalization and reappraisal of a traditional craft by learners and society (Salzano, 2005).

Making workplaces more inclusive

Preparing marginalized groups of youths and adults with the right skills and helping them make the transition from school to work is part of the problem faced by TVET in promoting social equity. Ensuring that the workplace is inclusive poses numerous policy challenges, depending on the contextual dynamics of inclusion and exclusion, and the capabilities of individuals. For example, the experiences of exclusion by people with disabilities and disadvantaged women may be similar in some ways and different in others. Many individuals experience multiple forms of disadvantage in the workplace, to different degrees of severity, depending on social attitudes and traditions in a specific context or organization. Approaches to inclusiveness in the workplace will therefore vary according to population needs, social diversity and context. To give one example, the Netherlands set about the task of making workplaces more inclusive for low-skilled adults by offering programmes that combine language instruction with work, and in certain cases on-the-job training (see OECD, 2012).

A review of employer surveys in Australia, the Netherlands, the United Kingdom and the United States of America, reported that employers valued people with disabilities for their high levels of motivation and their diverse perspectives, and found their attendance records to be the same or better than those of other employees (Employers' Forum on Disability, n.d.). Many employers mentioned that being seen as pro-inclusion was positive for the company or organization's image, an advantage that goes well beyond

providing employment opportunities to disadvantaged groups. In many cases, however, social and cultural perceptions are an obstacle to making workplaces more inclusive, and this will require sensitive and concerted attention. Some low- and middle-income countries have sought to address this through legislation. In Tanzania the Disabled Persons (Employment) Act of 1982 established a quota system that stipulates that 2 per cent of the workforce in companies with over fifty employees must be persons with disabilities (see SADC and UNESCO, 2013).

The 2012 *Education for All Global Monitoring Report* concluded that 'all countries, regardless of income level, need to pay greater attention to the needs of young people who face disadvantage in education and skills development by virtue of their poverty, gender or other characteristics' (UNESCO, 2012*b*, p. 303). The report found that several barriers and constraints reduced the success of TVET in meeting social equity demands. First, national TVET policies in most cases failed to address the skills needs of young people living in urban poverty and in deprived rural areas. Second, additional funds were needed to support TVET learning opportunities on a much larger scale. Third, the training needs of disadvantaged young women were particularly neglected. The 2012 *EFA Global Monitoring Report* also noted that skills training alone was not sufficient for the most disadvantaged of the rural and urban poor (UNESCO, 2012*b*). Coherent policies that link social protection, micro-finance and TVET are considered critical for ensuring better outcomes for marginalized groups.

Policies and policy measures to enhance the sustainability of development

Whereas TVET's role in producing skills for economic growth is fully acknowledged and its role in promoting social equity is rapidly expanding, its role in assuring the sustainability of development has only begun to emerge, with attention now being given to greening TVET and fostering global citizenship and intergenerational rights. TVET has considerable potential for contributing to both these outcomes, and in the period under review new policies emerged to make TVET an important actor in the drive for sustainability. There is an increasing realization that the skills TVET produces can advance the green agenda, and the awareness and attitudes it builds can improve sustainability and promote social harmony and peace.

Greening TVET

TVET for green economies is a policy direction that came to the fore during the review period, but one that is as yet underdeveloped. In several countries, the reforms of skill qualifications and the influence of industry on learning outcomes, together with workplace learning, have triggered new programmes and changes in the TVET curriculum that will promote green economies.

In Germany, a Congress on 'Learning and Structuring the Future: Training for Sustainable Development' prompted the formation of a 'Vocational Education and Training for Sustainable Development' programme and a Sustainability Portal for documenting and disseminating examples of good practice (Härtl, 2009). The Federal Institute for Vocational Education and Training (BIBB) developed manuals for a range of occupations that support tutors and trainers in provider institutions and workplaces to integrate sustainability concerns into their TVET teaching practices. BIBB also developed a series of occupation-specific modules on sustainable maintenance that focus both on how maintenance can assist in using products and devices for a longer time, and on the mitigation of the environmental hazards associated with maintenance (ibid.).

Similarly Australia sought to develop industry-agreed competency standards for sustainability, including life-cycle thinking, eco-efficiency and design, sustainable purchasing strategies, product stewardship and ecological footprinting (Condon and Rickard, 2009). Australia's *Green Skills Agreement* sought to build the capacity of the TVET sector to 'deliver the skills for sustainability required in the workplace and to enable individuals, businesses and communities to adjust to and prosper in a sustainable, low-carbon economy' (Council of Australian Governments, 2009). It is an example of measures that have been used to build the capacity of TVET systems by 'developing national standards in skills for sustainability within the requirements of the national regulatory framework, and upskilling TVET practitioners so they can provide effective training and facilitation in skills for sustainability'. The *Green Skills Agreement* called for a 'strategic review of Training Packages (sets of nationally endorsed standards and qualifications for recognizing and assessing people's skills) to embed sustainability knowledge, skills and principles; and implementing a transition strategy to re-skill vulnerable workers' (World Resources Institute, 2011).

In 2003, the United Kingdom released a 'Sustainable Development Action Plan for Education and Skills' to provide funding for campus greening projects and

the revision of courses to emphasize green skills (see Khan, 1999; Martin et al., 2008; Yarnit, 2004). Canada was also an early adopter in greening TVET. In 2004, expert consultations with industry produced a Sustainable Development Skills Profile (SDSP) for the Canadian workforce (see Chinien et al., 2004). The United States of America has presented TVET for green jobs as a strategy for moving marginalized people with low skills into higher-skilled, higher-paying jobs. Bozell and Liston (2010) charted some of the actions that have been taken by community colleges to respond to the challenges and opportunities of the green job market for promoting social inclusion. These include developing new curricula, thinking about new career paths that can promote learners' social mobility, identifying and accessing new funding routes, and building community and industry partnerships.

The sustainability of development is a global challenge, and an opportunity for both developed and developing countries. Similar initiatives took place in many other countries, and served both the environmental needs of existing industries and the growing employment opportunities in new industries such as waste management, recycling, grey water treatment and reuse, pollution prevention and control, environmental monitoring and inspection, renewable energy, ecodesign, green building, ecotourism, organic farming, forest conservation and land rehabilitation (Fien, 2013).

While there are many examples of 'green' initiatives in the period under review, thinking on greening TVET was still very new. Relatively little was done either to identify appropriate policy responses and effective strategies, or to explore pedagogical approaches and the long-run impacts on learners. As noted by Fien (2013), recent developments have tended to be lighthouse examples of innovations that were not institutionalized or mainstreamed.

Fostering global citizenship and securing intergenerational rights

Since the Seoul Congress, TVET systems have been expected to play a crucial role in supporting the culture of peace, environmentally sound sustainable development, social cohesion and international citizenship (UNESCO, 1999). The practical implication of this perspective is illustrated in the German qualifications framework, where the term *Handlungskomptenz* ('action competence') is understood as 'the ability and readiness of the individual to use knowledge and skills along with personal, social and methodological competencies and conduct him or herself in a considered and individually and socially responsible manner' (CEDEFOP, 2013*b*, p. 11).

Other countries have also taken a broad approach to TVET's responsibilities. South Africa's applied competence framework incorporated three key elements: i) practical competence, ii) foundational competence, and iii) reflexive competence. According to Lotz-Sisitka and Raven (2009), reflexive competence entails learners being able to adapt knowledge and practices to new situations and reflect critically on the integrated social, environmental and economic implications of what they are doing – not just for themselves, but also for the collective.

Ensuring intergenerational rights to robust ecosystems that can be exploited sustainably compels each generation to recognize its responsibilities to the generations that follow. This requires a consensus among those who are part of the present generation on how the resources of society, both financial and non-financial, are to be shared for the benefit of all (Eurofound, 2012). Greater attention also has to be paid to modes of production and consumption that are sensitive to the needs of current and future generations (Fien and Maclean, 2009). Intergenerational solidarity has become part of the way some elements of TVET systems function. For example through apprenticeship and other forms of work-based learning, the transfer of knowledge between generations preserves valuable labour market skills and experience. Apprenticeships also equip young workers with the practical knowledge they need and the types of knowledge employers often complain young people lack. Apprenticeship schemes are especially important in much of the Middle East and in sub-Saharan Africa.

Conclusion

This chapter acknowledges the efforts of TVET systems to respond to the contextual factors identified in Chapter 1. These responses have mainly been through the introduction of new policies and programmes. The chapter has presented the policies and their associated measures in the framework of the contextual factors presented in Chapter 1. The chapter has also presented the policies and programmes according to whether they seek to respond to economic growth demands, social and equity imperatives, or concerns about the sustainability of development. On the basis of this simple classification, this review suggests that TVET's response to the demands of economic growth has been dominant in TVET's development and its reforms during the period

under review, but given the rapid changes taking place, evidence continues to show that a persistent disconnect remains in many countries between the demands on TVET systems and the skills supplied.

Attention to these economic demands on TVET systems has been uneven, and the record of implemented policies has not always been encouraging. Reasons for this may be that policies and policy measures introduced in TVET reforms have not been sufficiently responsive to the immediate geographic or temporal contexts of individual country TVET systems. A case in point is the absence of adequate skills development responses to the informal sector in countries where the informal sector is growing. Another example is the failure to develop relevant approaches and structures for labour market analysis, such as labour market information systems.

Policy responses to the social equity imperatives have often been small-scale and inadequate. In many cases TVET for specific target groups seems to have been regarded as a supply-driven matter, disconnected from rigorous labour market analysis and the changing demands for skills from enterprises. In some cases TVET programmes and institutions aiming to achieve social goals, such as cultural development, were treated as if they were separate from the rest of TVET systems. Consequently they may not have been within the scope of mainstream TVET reforms. This review would suggest there is considerable scope for employers to do more to develop learning and working environments that include and empower disadvantaged groups, value social and cultural diversity, address social exclusion, and contribute towards equal opportunities for all.

Chapter 2 has also pointed to a few illustrative examples of policies and policy measures intended to address concerns over the sustainability of development. This includes efforts to increase the greening of TVET, foster global citizenship and ensure intergenerational rights. It concludes, however, that while these examples are of interest, the potential contribution of TVET to the sustainability of development was only partially realized in the period under review. The future transformation of TVET in response to the combination of external factors will require further reforms that promote skills for economic growth, while ensuring that TVET realizes its potential to promote social equity and the sustainability of development. Chapter 3 goes on to provide an account of efforts made during the period under review to strengthen the internal capacities of TVET systems to respond to the pressures on them to contribute more to economic growth, social equity and the sustainability of development.

Chapter 3

Strengthening TVET Systems' Capacities

Externally oriented TVET system reforms that took place in the period under review were grouped in Chapter 2 according to whether they were a response to the demands of economic growth, social equity, or the sustainability of development. In addition, efforts were made during the same period (1999 to 2012) to strengthen the internal capacities of TVET systems to respond to these triple demands. These efforts included: i) expanding and diversifying access; ii) expanding work-based learning and cooperation with businesses; iii) enhancing quality and relevance; iv) professionalizing TVET teachers and trainers; v) empowering learners; vi) strengthening the management of TVET institutions; vii) improving governance and stakeholder participation; viii) developing supporting frameworks for implementation; and ix) using funding to steer TVET. In this chapter, measures taken relating to each of these aspects are identified from a wide range of country experiences.

Expanding and diversifying access

Demographic growth and the success of the EFA movement in expanding access to basic education put many countries under pressure to provide opportunities for post-basic education and training, including TVET. For youth, women and men, who had poor-quality basic education or none at all, TVET is a realistic avenue for the acquisition of knowledge, skills and attitudes for work and life. In the period under review, countries responded with a mix of institutional approaches to TVET, which in some cases were linked and aligned and in others not.

To illustrate these approaches, Box 6 shows the range of TVET provision that has emerged in the context of sub-Saharan Africa, as well as some apparent strengths and weaknesses.

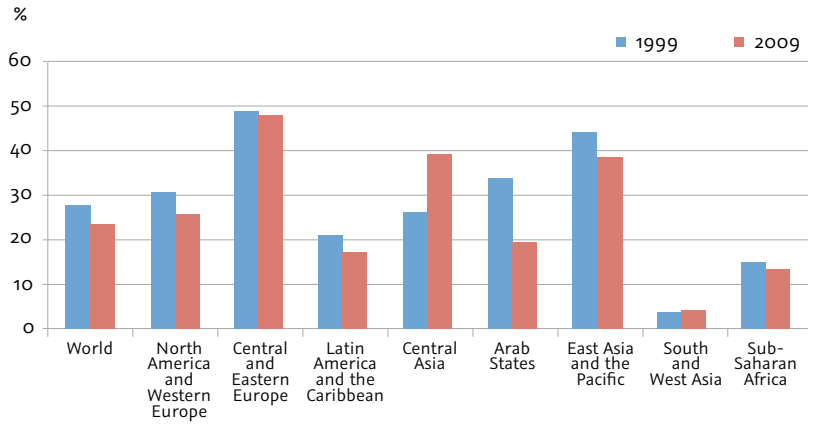
Box 6. Typology of TVET provision and particular strengths and weaknesses in sub-Saharan Africa

Types	Strengths	Weaknesses
Government-owned training institutions	Often wide geographical coverage Willingness to invest in capital-intensive skills Often addresses strategic skills needs for national strategies	Often insulated and unresponsive to market forces Same courses offerings regardless of employment demand Tendency to obsolescence Lack of cost-consciousness resulting in inefficiencies Quality suffers when public budgets are cut
Non-government providers	Major source of skills training in many countries Save public expenditure that would otherwise have to be provided Non-profit providers often serve vulnerable and disadvantaged groups High proportion of female enrolments For-profit institutions usually cost-conscious and attentive to market developments and graduate placements	Wide variation in quality Tend to focus on skills with low investment requirements Training often concentrated in urban areas Fees tend to exclude marginalized groups
Enterprise-formal sector	Self-financing and self-regulating Based on actual occupational tasks performed in employment Matched closely with existing production technology	Training is selective, most notably in larger firms, for higher skilled occupations and better educated workers Small enterprises are less likely to train
Traditional apprenticeship	Pervasive source of skills for informal economy Based on actual occupational tasks performed in employment Serves poorer segments of the population Self-financing and self-regulating Generally cost effective	Perpetuates existing technologies Training delivery is often poor Lack of standards and quality assurance Skills obtained often incomplete

Source: Johanson and Adams (2004, p. 182).

Globally, enrolments in formal upper secondary TVET have been declining since 1999 in all regions with the exception of sub-Saharan Africa (see Figure 11). Notwithstanding these regional trends, there are countries such as Singapore where reforms have resulted in increased numbers or percentages of enrolments. Austria, Argentina, Brunei Darussalam, China, Ethiopia, Finland, Greece, Hungary, Kuwait, Lebanon, Malaysia, the Netherlands, Norway, Portugal, South Africa, Spain, Sweden, Uruguay and Uzbekistan are among the countries where a growing share of cohorts are following school-based TVET programmes (Hiromichi, 2011). In Germany (with its dual system) and Australia with its Technical and Further Education (TAFE) system of formal TVET provision, more than 55 per cent of each age cohort participated in TVET programmes. Even so, in many cases, the overall share of upper secondary TVET enrolments declined as the popularity of general upper-secondary education increased (Maclean and Pavlova, 2011).

Figure 11. The regional average of upper secondary TVET enrolment as a percentage of total upper secondary enrolment, 1999 and 2009



Source: UNESCO Institute for Statistics.

While enrolments in formal secondary TVET have declined over the review period, TVET provision outside the formal education system expanded in many countries. However, the lack of accurate data makes it difficult to estimate the overall numbers of young people and adults who take part in these programmes. Individual country cases illustrate the range of such programmes and their expansion. For example enrolments in vocational training programmes outside the formal education system in Morocco almost doubled from 146,000 in 1999 to 300,000 trainees in 2012 (ETF, 2012). In Tunisia enrolments grew four times from around 20,000 in 1999 to 80,000 trainees in 2011 (Republic of Tunisia, 2011).

Reducing barriers and increasing opportunities

One of the main reasons that TVET, particularly secondary TVET, often appeared unattractive to learners in the past was its relative isolation from other education streams. In most countries of the world, TVET was widely perceived as a 'dead-end' stream. In the period under review positive steps were taken to reduce the segmentation of education and training, and to address institutional barriers that restricted TVET learners' options and choices to move vertically to higher levels of learning, or horizontally to other streams. Policy-makers have introduced forms of hybridization, and some of the traditional distinctions between TVET and 'academic' education streams have been blurred. Maclean and Pavlova (2011) described a trend towards hybrid programmes, and often to more hybrid institutions that incorporate aspects of both 'academic' education

and TVET. This has been termed the 'vocationalization of secondary education'. A similar process can be observed, to some extent, at the tertiary level.

'Academic' and 'vocational' providers have recognized the considerable overlap between these traditionally distinguished streams. Awareness of this overlap has grown with the shift to more knowledge and service-based economies and recognition of the importance of softer skills such as IT literacy, teamwork, communication and learning to learn. As more young people continued their education and training for longer periods of time, this too created blurred lines between academic and vocational streams. Numerous country cases illustrate the trend towards more hybrid approaches in the provision of programmes and qualifications, and in the organization of educational institutions (see Box 7).

Box 7. Examples of hybrid education provision

France and the Netherlands: In such programmes as the *baccalauréat professionnel* in France, and the *middelbaar beroepsonderwijs* (MBO) programmes in the Netherlands, which were created during the 1980s, general education content was enhanced so that up to one-half of the course is based on general education while, at the same time, learners gain specialist knowledge and skills and have to obtain an extensive amount of work experience in the area they are specializing in.

Germany and Austria: Apprenticeships enhanced general content within occupational training, and considerable emphasis was placed on personal skills, such as taking responsibility for one's own learning.

India: Work education was included in the primary standards (grades 1-8) to make the students aware of the concept of work. At the lower secondary level (grades 9-10) pre-vocational education were included and aimed to increase students' familiarity with the world of work.

Republic of Korea: About 40% of secondary students are currently enrolled in TVET. In some schools, academic and vocational students share almost 75% of the curriculum.

Russian Federation: A new approach to vocationalization of secondary schooling has been introduced within the framework of general educational reform guided by the Ministry of Education's strategy of modernization. Vocationalization in the Russian Federation relates to the introduction of what is called profile education at the upper-secondary level (the last two years of schooling, grades 10 and 11) and the process of preparation for profile selection. Profile education provided students with the opportunity to study in depth a chosen area, usually one that would be related to their further study (TVET or academic). Schools could design their own profiles, such as science, socio-economics, humanities, and technology profiles, or keep a general orientation curriculum. In preparation for the upper-secondary specialization, a 'pre-profiling' programme in grade 9 has been introduced to help students make their choices in grade 10.

United States of America: Tech-Prep programmes in the United States of America are an example of how the 'blending' approach was used to help students make the connections between school and the world of work. In year nine, programmes in broad occupational fields (such as the health professions, automotive technology, computer systems networking) are offered with the sequence of general technology studies. The programme continues for at least two years after the end of secondary school, through a tertiary education or an apprenticeship programme, with students achieving an associate degree or certificate by the end of the programme.

Source: Adapted from Maclean and Pavlova (2011).

Creating pathways to higher education

In many countries policy-makers have taken steps to open vertical pathways for TVET learners. Policy measures aimed at improving the articulation of secondary vocational education with higher education were introduced in order to open more options for students and to meet an increasing demand for skills and qualifications at International Standard Classification of Education (ISCED) Levels 4 (non-tertiary post-secondary) and 5 (first stage of tertiary), which were designed for employment in technical, managerial and professional occupations.

It is well recognized that 'as the demand for enrolment at post-secondary and tertiary levels has increased in most countries, the pressure has grown for diversification of the types and modes of provision at these levels. In many countries this has led to proliferation of new vocational programmes' (UNESCO Institute for Statistics, 2006, p. 29). Examples are found in Japan, the Republic of Korea, the United States of America and a number of other countries. Many two-year colleges in Japan that catered exclusively to women either closed or were converted into four-year institutions as the labour market changed (ibid.). In the United States of America, two-year community colleges with high vocational content were designed to extend students' opportunities to enter the labour market or continue to a baccalaureate degree. Junior colleges in the Republic of Korea (*jeonmun daehack*) offer two- or three-year post-secondary vocational education programmes. They were first established in 1979 due to rapid industrialization and the increasing demand for middle-level technicians with both theoretical understanding and practical skills.

In the Republic of Korea, specialized courses offered at junior colleges were grouped into broad areas such as engineering, agriculture, fishery, nursing, health, home economics, social work and the arts, as two-year or three-year programmes. To increase the employability and career opportunities of their graduates, some colleges included additional practical courses in their programmes in areas such as ICT, computer software, cosmetic science and physiotherapy. These college graduates are highly valued due to several factors including the benefits of:

> *strong school–industry cooperation including internships, industry-based training for faculty members, education for mid-career industry employees, joint college/industry research programmes, information exchange, the active work of industry/college cooperation committees, and curriculum development at the industries' request.* (Maclean and Pavlova, 2011, p. 67)

In Europe, developing TVET for higher levels of qualifications gained momentum in the period under review. Sweden, for example, introduced advanced vocational education for strengthening and refocusing existing professional bachelor degrees (see CEDEFOP, 2012*b*, p. 3). In Finland, one of the main aims of reforming TVET qualifications was to increase the proportion of people holding vocational qualifications or tertiary degrees among younger age groups (25 to 34 year-olds). At the same time, the Finnish government granted funds for the internationalization of TVET to advance student and staff mobility (CEDEFOP, 2010*c*). A strong element in the dual system in countries such as Germany and Austria is that an experienced craft professional can progress to Meister (master) status, entailing a high level of technical skill, knowledge about legal frameworks and the HRD aspects of starting a small business, undertaking training as a trainer, taking on apprentices and other matters.

In Austria, the government and social partners started to pilot a fast track for apprentices in 2008. This pilot qualified them as skilled workers and simultaneously gave them a general entry ticket to higher education. It allowed young apprentices to prepare for higher education entry exams free of charge. The aim was to expand progression opportunities, promote lifelong learning and make apprenticeship more attractive (see CEDEFOP, 2012*a*). Germany had over 150 courses for professional bachelor degrees which included practical experience, and which were considered fundamental to the trade and industry sectors. Access to professional bachelor degrees required completion of initial TVET (dual system) and professional TVET and some years of experience. These qualifications are important for increasing permeability because they granted TVET candidates access to tertiary education while at the same time they improved job prospects because of their value on the labour market.

Inter-institutional collaborative arrangements were developed in a number of countries. For instance, some technical colleges in Tajikistan have the same first two-year programmes as their 'linked' universities, so high achievers from these colleges can transfer to the third year of study at the university. Institutions from both subsectors of education use the same campuses, and jointly deliver courses. Comparable links can be found in the cooperation among community colleges in the United States of America and their state universities, and among particular further education colleges and universities in the United Kingdom.

This wave of 'vocationalized' or hybrid programmes has produced a number of benefits. For example, the image, status and reputation of TVET improved in many countries. Finland and the Republic of Korea are two examples of this. Another benefit has been improvements in synergies and articulation between higher and vocational education, supporting innovation and offering citizens more productive opportunities for lifelong learning.

Supporting the expansion of private sector TVET

Private TVET providers include for-profit and non-profit institutions. Several factors triggered actions to support the expansion of private TVET and include these providers as part of the TVET system. The limited capacities of public TVET providers and their low responsiveness to enterprises and trainees were among the factors driving this process. Private TVET providers were expected to be more responsive because they were subject to fewer bureaucratic restrictions than public institutions (particularly in centralized systems) and their presence was expected to help raise quality system-wide. Furthermore, in many developing countries, government budgets constituted a vulnerable and unreliable source of financing for TVET. Thus an important objective was to finance TVET systems by increasing the contribution of beneficiaries, including employers and trainees.

Private TVET provision over the past decade has become a significant and growing part of TVET in sub-Saharan Africa (Johanson and Adams, 2004) and in the Middle East and North Africa (ETF and World Bank, 2005). In some countries, for example Lebanon, enrolments in private TVET institutions have exceeded public enrolments. In Jordan, private provision at the community college level has been promoted by the government, and has become significant in terms of the number of enrolments (ETF and World Bank, 2005). Not all private experience has been positive, however, as the provision of TVET by private proprietary institutions or NGOs has often been concentrated in professional areas that typically do not require large capital investment, permitting easy entry and exit by private providers from the sector. Quality issues have also emerged, where market information about quality has been unavailable.

According to Johanson and Adams (2004, p. 104):

> *Governments typically use various regulatory tools to encourage, monitor, and control nongovernment training providers (box 4.1). Regulations can control (i) the opening of a new training institution (registration), (ii) the operation of*

the institution (certification and accreditation), (iii) the types and levels of fees charged (upper and sometimes lower limits), (iv) teachers (qualifications and salaries), (v) curricula (number and types of courses), (vi) distribution of profits, and (vii) the credentials conferred on graduates.

In Morocco, the norms and rules for private TVET providers were defined in a detailed legislative framework. Johanson and Adams (2004, p. 102) find that 'TEVETA in Zambia, having divorced itself from direct management of public training institutions, has been able to evaluate objectively the standards of all training providers in the country, public and private'.

In addition to regulations, governments established measures to support private TVET providers. Support included financial and technical dimensions (see Johanson and Adams, 2004). Financial support was directed towards i) direct subsidies (tuition grants), ii) indirect subsidies (fellowships or bursaries to students), and iii) tax exemptions (Johanson and Adams, 2001, p. 104). In Côte d'Ivoire and Mali, non-government institutions received substantial government subsidies and tax incentives (ibid.). Technical support included the provision of training of trainers, support for curricular design and its implementation, and other technical assistance. For example in Tanzania, using resources from the VET Fund, assistance was given by VETA to develop capacities of VET institutions including private providers and to support providers to meet the quality assurance criteria required for registration (SADC and UNESCO, 2013).

Expanding work-based learning and cooperation with businesses

Work-based learning refers to any form of learning or vocational training for youth and adults that occurs inside an enterprise or workplace. Examples include formal apprenticeships that are regulated by a contract of training, informal or unregulated apprenticeships, sandwich courses and alternance schemes moving between work and study, or unpaid work placements undertaken by students, as well as adult participation in continuing training. For the last ten years or more, in both developed and developing economies, the combination of work and learning in the classroom and the workplace has been an attractive, if not seductive, idea for policy-makers concerned with employment, education, vocational training and youth transitions to the world of work.

Apprenticeships have proven to be attractive to policy-makers and others as a means for combining working and learning. Among apprenticeship models the German dual system has held, and indeed still holds, a particular fascination (see OECD, 2013; European Alliance for Apprenticeships, 2013; ILO, 2012*c*). Four main lines of argument have been advanced for promoting policies that support the combination of work and learning for youth: that it can improve pathways to adulthood, deliver economic and labour market benefits, improve pedagogy, and reduce costs and increase capacity within the TVET system (Sweet, 2009; 2011).

Among the policy options open to TVET stakeholders, including governments, for promoting apprenticeships are: revisiting the organization of apprenticeships in the formal sector, improving the quality of traditional apprenticeships, and developing continuing TVET in workplaces.

Revisiting apprenticeships in the formal sector

Apprenticeship schemes have, according to Lauterbach (2009, p. 1653):

> *experienced a worldwide upswing in recent years because, in comparison with those trainees who attend full-time vocational and technical education in schools, the percentage of graduates who perform better in the transition from TVET to employment is higher, their ability to adapt to the situation at work is better, their satisfaction with work is higher, and/or they can show a higher level of productivity at work.*

Classifying formal apprenticeships at the international level seems difficult, and collecting data is even harder. Classifications that reflect the durability and sustainability of formal apprenticeships seem to be the most useful. Using this approach, Sweet (2009, p. 30) identifies three types of schemes:

- *Well-established programmes that have relatively large numbers of participants, that represent a reasonably large share of the upper secondary initial vocational education system. Examples include Austria, Denmark, Germany and Switzerland.*

- *Long-established programmes that have become a normal part of the country's TVET system, but which have remained very small, particularly in relation to TVET that is completely institution-based. Examples include the Philippines' formal apprenticeship system and Jordan's applied secondary education.*

- *Relatively recently, small pilot programmes that in many cases depend upon support from donor agencies for their continued existence and viability. Examples include the Egyptian Mubarak Khol Initiative, and new apprenticeship schemes in Croatia and Morocco.*

Well-established apprenticeship arrangements such as those found in Austria, Denmark, Germany and Switzerland are further strengthened by efforts to diversify the range of occupations covered, including services, ICT and the multidisciplinary engineering field of mechatronics. In Germany, the Vocational Training Act adopted in 2005 promoted rapid modernization of the system of training occupations as one of the centrepieces of the Federal Government's vocational training policy. 'Between 2000 and 2013, about 147 occupations [were] updated and 51 new ones introduced. This [was] the most extensive series of modernizations since 1969, when the Vocational Training Act came into force' (BMBF, 2015).

In the Philippines the formal apprenticeship system is quite small, with only around 1,000 apprentices in 2009, but it is well developed, with a strong institutional underpinning. It is regulated by Title II of the Labour Code of the Philippines. Enterprises wishing to take on apprentices and institutions that provide the off-the-job training component need to be accredited. The training content is based upon national competency standards developed jointly with industry. With the recent establishment of the Philippines NQF, graduates have started to receive a nationally recognized qualification (World Bank, 2010*c*; Sweet, 2013).

In the period under review apprenticeship programmes were introduced in several different parts of the world. Morocco introduced new apprenticeship programmes that are carried out in partnership between the state and firms. The first in-house apprenticeship training centres were created in 2004 in the textile and hotel sectors. The number of centres was expected to reach 150 by 2013 (OECD, 2012). In Europe, Croatia developed apprenticeships for learners enrolled in three-year programmes whereby work-based learning (i.e. apprenticeship training) is regulated by the law on trade and crafts, while Greece improved its apprenticeship schemes in several regions (CEDEFOP, 2012*a*).

Improving the quality of traditional apprenticeships

Traditional apprenticeships have been a major component of skills development for the informal sector, as reported in Chapter 2. For example, India recognized training needs for the urban informal sector, and designed a comprehensive action programme for skills development in the unorganized sector (UNESCO, 2012*b*).

Addressing the quality of traditional apprenticeships has led to actions and programmes in numerous countries to upgrade the skills of master craftpersons and better recognize and certify the skills acquired. Tunisia, for example, engaged in substantial reforms to enhance the quality of traditional apprenticeships, including the organization of basic numeracy and reading courses, as well as technology and health and safety modules (ETF and World Bank, 2005).

In recent years, the size and potential of traditional apprenticeship systems led several sub-Saharan African countries to adopt legislation on apprenticeships. According to Walther (2011), two main directions were taken. The first focused on transforming traditional apprenticeships into a dual system that combines theoretical learning with practical training. Benin, Senegal and Togo are prominent examples of this. A second direction is characterized by the widening recognition of traditional apprenticeships through the introduction of regulations, assessments and certification. In Benin a vocational qualification certificate (CQP) was introduced as a certification of the newly established dual system and an occupational skills certificate (CQM) is being established as a new form of certification of traditional apprenticeship (UNESCO, 2013*d*).

Developing continuing TVET in workplaces

Continuing TVET involves ongoing training to upgrade existing skills and to develop new ones. It took on a much higher profile in the period under review, particularly in ageing societies and knowledge-based economies. Increased recognition of the importance of human capital for economic growth and social development made it necessary to increase learning opportunities for adults in workplaces within the wider context of policies and strategies for lifelong learning (see OECD, 2005).

In many countries policy-makers have considered ways to expand workplace learning opportunities for workers, and to assess and give credit for knowledge and skills acquired in workplaces. Efforts were geared towards training for workers in companies, encouraged by legislation, financial incentives and contractual agreements. In the period under review, support to non-profit and community-based organizations was also provided to encourage continuing TVET in workplaces.

An OECD study found that policy measures included:

> *compulsory financing and financial penalties for companies that do not spend a minimum amount on training determined by the government. There are also promotional measures that may take the form of an award of a quality label for companies that provide the most and the best training, or subsidies for training.* (OECD, 2003, p. 130)

In the United Kingdom, for example, the Investors in People (IiP) label can be acquired by organizations that meet specified standards, which include having a learning and development strategy.

In some countries, policy-makers established institutional requirements to link informal work-based learning to the formal assessment and certification of competencies. The South Africa Skills Development Amendment Act No. 3166 of 2008 provides for artisan status to be granted to those who have successfully completed trade tests undertaken by an accredited trade test centre. It also provides trade certificates for completion of a relevant 'learnership', satisfying the requirements of a relevant apprenticeship, certification of prior learning, and the completion of any other learning programme that includes prescribed work experience (Sweet, 2011).

Support to non-profit or community-based organizations for continuing TVET is provided in some cases by the establishment of funding schemes, like the Cambodian Training Fund. The Fund supports short-term, non-institutional courses determined by the communities and delivered on-site using existing facilities, in some cases by non-governmental organizations (UNESCO, 2013*c*).

Enhancing quality and relevance

Enhancing the quality and relevance of TVET was a goal for many countries during the review period. Critics have cited poor quality and training that does not adequately respond to market needs as weaknesses of TVET, and have called for policy actions addressing these problems. These actions were discussed in Chapter 2, including measures to shift from a supply-driven model to one that is driven by economic demand (e.g. Leney, 2009*a*; Lippold et al., 2011; OECD, 2007). Actions to improve the quality and relevance of TVET included engaging employers' and workers' organizations in setting competency standards and curriculum reforms. Once competencies have been defined, curricula can be developed to produce the knowledge, skills and attitudes in demand. Employers' and workers' organizations were given a greater role to play in TVET reforms, especially in developing agreed learning outcomes for qualifications (see Tuck, 2007).

Reviewing and reforming TVET qualifications

Qualifications frameworks have emerged as a popular policy measure designed to raise skills levels, reduce skill mismatches, improve labour market productivity, promote labour mobility and efficiency, and contribute to economic growth. By 2010, according to Allais (2010), seventy countries were at some stage of introducing or deciding whether to introduce a NQF. NQFs establish competency standards, assess workers' skills, and certify competencies acquired from different provider sources. NQFs also provide information about skills to the market, helping promote market efficiency. Countries have used NQFs to address concerns regarding access, progression, transparency, quality and relevance of qualifications. The challenges addressed by a NQF are illustrated in Box 8 using the example of Egypt.

Box 8. Country Focus: Issues in Egypt's qualifications systems

Progression: For many people, there was little possibility to progress, especially from the vocational to the academic route; also, it was difficult to obtain recognized qualifications outside of formal education.

Access: Access to qualifications is limited for many potentially successful learners because there is no recognition of previous learning through experience.
Inflexible access requirements created barriers that are neither rational nor fair.
In particular, more women than men were unable to access education, especially in rural areas. Access to formal qualifications was barred for those working in the informal sector.

Transparency: Equivalence of qualifications was governed by validation procedures for certification carried out on an individual basis, for example through a single ministry. There is as yet no unified or coherent national system for accrediting educational and TVET certification, and no certification system that is based on transparency or learning outcomes.

Quality: Efforts to develop strong standards of performance have been weak until now. Current systems of quality assurance of educational institutions were limited to the supervision of ministries with which they were affiliated. There was also a lack of data needed for indicating education quality.

Relevance: Major mismatches existed between the knowledge, skills and competences of young people who have obtained TVET and other qualifications, and the requirements of enterprises. There were no accepted mechanisms for modernizing education and training programmes, or for making them responsive to labour market and wider social needs.

Source: Adapted from ETF (2008).

NQFs can help manage the diversity of TVET provision. For example, in Sri Lanka, the TVET sector was:

> *historically fragmented, with around 300-odd vocational training centres operating in the country under the management of 11 ministries providing courses of differing quality, using differing levels of training equipment and facilities, differing training approaches, and attempting to meet the different needs of urban and rural youth. The creation of a single national framework was seen as the first step in creating a nationally-managed system, and thus creating a point of convergence, and increasing efficiency.*
> (Allias, 2010, p. 50, from Gajaweera, 2010)

The reform of qualification systems involves important questions about the most effective way to establish standards, frame the curriculum and assessment procedure, and recognize the knowledge and skills that people have already acquired in the workplace and community through prior learning. Although there is no single international model, most NQFs share some common broad principles. They are based on identifications of learning outcomes that define levels and often types of qualification. The levels are distinguished in an approximate way through criteria such as knowledge, skills, aptitudes, attitudes and competencies. Different qualifications and types of qualification are attached to these levels by using learning outcomes and competence criteria rather than the traditional duration or location of courses. Quality assurance arrangements are included to support the management of qualifications frameworks and ensure the quality of their procedures. Some frameworks cover all qualifications, while others are related to TVET qualifications alone.

Numerous policies and actions associated with the review and reform of qualifications appeared during the review period, though not all in all contexts at the same time. Almost without exception, all countries attempted to expand the role played by formal sector employers in the identification and implementation of qualifications reform. In France, for example, this was done through national commissions representing the social partners and education and training providers. The commissions' role was to identify the standards and necessary competencies of the labour market on which TVET qualifications, curriculum and assessment should be based. In other countries such as the United Kingdom, South Africa and Mexico, sector skills councils involving employers played a considerable role in identifying occupational standards and skills needs, and developing these into TVET qualifications with other partners.

Another trend in TVET qualifications reform is related to the opening of new opportunities for TVET graduates to progress to higher qualifications in their occupational field (vertically) and to have improved access to other kinds of qualifications (horizontally). China has made, and is still making, a major effort in this respect (Yang and Valdes-Cotera, 2011).

A focus on learning outcomes rather than inputs has become part of these reforms. This shift is away from traditional TVET qualifications that are based solely on inputs such as subjects and hours of study requirements, to include a better identification of what the student is expected to have achieved by the end of the course of study. These achievements are organized in modules and expressed in terms of knowledge gained, skills learned, and competencies

and aptitudes acquired. Almost all thirty-six countries participating in the European Qualifications Framework (EQF) have defined, and mostly adopted, their levels of learning outcomes (see CEDEFOP, 2013*b*).

Qualifications tend to be defined in modules. Each module, following the associated rules of combination, carries a specific point rating, and a successful graduate must achieve a defined number and combination of points or grades to achieve the full qualification. Awards at Canadian community colleges, TVET and higher education qualifications up to master's level in the United Kingdom (except at Oxford and Cambridge universities), and school and polytechnic TVET qualifications in Finland and Sweden are all based on credits achieved from modules. The idea behind full systems of credit accumulation and transfer is that the learner can accumulate credits in a qualifications bank, and use credits flexibly towards achieving qualifications that are based on specific accumulations of modules or units.

The validation of informal and non-formal learning is another aspect of qualifications reform that has received attention in policy discussions and practice. Validation is based on the learning outcomes that people have achieved other than through formal periods of qualification (learning by doing), and recognizes the broader learning outcomes that people achieved while participating in formal TVET. In France and Portugal workers can obtain a professional qualification if they meet specific assessment criteria, without following a full programme of study. In Canada, if students seeking to achieve a qualification in a community college believe they already have the knowledge and skills specified, they are entitled to 'challenge' and be tested. If the evidence of the challenge is upheld, they are awarded part of the qualification based on their earlier learning.

Systems for validation or recognition of prior learning and informal and non-formal learning tend to be complex. The evidence of learning outcomes for these cases has to be just as robust as the evidence provided through the usual forms of assessment that prevail in formal qualifications, otherwise the validation pathway for this kind of learning would be considered as second class. An obvious attraction of the recognition of informal and non-formal learning is that it may provide a bridge between formal qualifications and, for example, informal apprenticeships (OECD, 2010*c*; CEDEFOP and European Commission, 2010). However, participation in such a scheme is still on a very small scale in most countries. Portugal, and to a lesser extent France, are two countries that have shown progress in validating informal and non-formal learning outcomes for an important number of beneficiaries (see Box 9).

Box 9. Country Focus: Portugal

In Portugal, the validation of non-formal and informal learning is considered to be a high political priority. In 2001 the Portuguese government developed a national system for the validation of non-formal and informal learning as a key measure to reduce the qualifications deficit among the adult population aged 25–64 which, in 2001, was still similar to the qualifications deficit in developing countries: No academic qualification (11%), four years of schooling (36%), six years of schooling (15%), nine years of schooling (13%), upper secondary education (13%), tertiary education (11%), others (1%).

The objective of the government was to significantly increase the number of people who participate in lifelong learning training programmes. Specifically, the goal was to increase the number of people aged 25–64 years involved in lifelong learning from 4.8% in 2001 to 13% by 2010. This represents an increase from 200,000 to 700,000 people participating in lifelong learning initiatives.

The New Opportunities Initiative was launched in December 2005 by the Ministry of Education and the Ministry of Labour and Social Security, under the responsibility of the National Agency for Qualifications (ANQ).

New Opportunities Centres (NOCs) were created in 2007. Their role is to provide qualifications to the Portuguese population through the development of processes for the recognition, validation and certification of competences and through qualified training. By April 2010, there were 454 NOCs. These are diverse, including vocational training centres, basic and secondary schools, entrepreneurial associations, enterprises, local and regional associations, and local authorities. The New Opportunities Initiative has expanded rapidly in Portugal since 2007, when there were only 98 centres in place.

In terms of validation activities, the NOCs provide counselling and guidance, and undertake assessment and certification at a local level. The national financing programme POPH (Programa Operacional Potencial Humano – partly supported by the European Social Fund) is the main source of funding for the NOCs. This financing covers most of the expenses (human resources, facilities and equipment and current expenses).

A Charter for Quality Assurance was created in 2007 for NOCs. The charter introduced the mission, guiding principles, requirements for work, and the stages/dimensions of the validation processes. It presents the reference indicators for self-assessment, of which there are sixteen. A Common Assessment Framework has been used for the evaluation of NOCs since 2009. As part of the self-evaluation procedure, each NOC files an annual report and a development plan is established for implementation in the following year.

According to ANQ data, 324,370 adults had been granted certification through recognition and validation processes by April 2010. Since 2007, 55% of those who received certification were women and 45% were men. The age-group 35–44 years is the most represented (39%), followed by the age-group 45–54 years (25.8%) and by 25–34 years (23.2 %). People older than 65 (7%) and between eighteen and twenty-four years old (4.3%) are less represented in the processes. By April 2010, there were more than 1 million adults enrolled in the NOCs and nearly 150,000 were attending adult education and training courses.

Source: Adapted from OECD (2006) and Pires (2010).

The policy and practical dimensions of developing national and regional frameworks have been well documented at the European level (Castejon et al., 2011) and internationally in an ILO study of developments in sixteen countries (Allais, 2010). A helpful conclusion from this work is that policy-makers should not view a single policy tool such as a NQF as capable of accomplishing great things on its own. Rather, it is a question of a judicious combination of policies and actions that can be sustained and updated over time and as situations change; in this respect, a NQF may be a useful policy tool, alongside others.

Just as interest in NQFs has grown rapidly, so has the exploration of the possibilities for RQFs. In the period under review there was considerable progress in developing and implementing the EQF; the southern Africa subregion worked towards implementing its regional framework; and CARICOM also sought to develop a common vocational qualifications framework. Other regions also looked at the possibility of regional frameworks that could support the legibility and recognition of qualifications cross-nationally, and facilitate some aspects of worker and student mobility through improved international recognition of qualifications (Keevy et al., 2010).

International reviews of NQF reforms differ in their assessment of their relevance and successes. The ILO study concluded that NQF reforms are barely fulfilling their objectives in many countries, and that in many cases NQF development is influenced from abroad and characterized by strong policy borrowing and lending processes (Allais, 2010). A more recent review of European experience (CEDEFOP, 2012*a*) demonstrated that countries in the region are succeeding in reforming their qualifications systems and referencing them to the EQF.

International experiences in designing and implementing NQFs suggest the need to ensure that the system developed is fit for both purpose and context. Fitness of purpose is ensured by constructing the framework on the basis of a careful analysis of the needs and aspirations of the societies in question, and in ways that encourage ownership by national stakeholders (Chakroun and Jimeno Sicilia, 2010).

Reforming curricula

Competency-based models of curriculum development and instruction dominated TVET curricular reforms during the review period. Competency-based training (CBT) was introduced with the goals of, first, identifying the practical skills that comprise different occupational profiles and the standards

of performance required for successful employment; and second, in recent years, incorporation into national qualification systems that provided mechanisms to standardize and update the different qualification profiles required by industry.

CBT is viewed as being training that is focused on the outcomes of the process rather than on its inputs: in other words, the attained competencies. It uses industry competency standards as the basis for TVET curriculum development, and is geared towards developing skills to the standards employers will recognize. CBT is often modular in structure, and includes both on-the-job and off-job components. A review of TVET curriculum developments in the Asia-Pacific region found that many countries in the region have introduced a competency-based curriculum in TVET to ensure appropriate adaptation to rapidly changing labour market needs (UNESCO-Bangkok, 2011).

The picture from Latin America for CBT appears to be more complex, and is certainly more contested. Countries such as Chile, Colombia and Mexico reformed their initial TVET systems using a competency-based curriculum concept.

Strengthening quality assurance arrangements

Quality assurance is recognized as important in countries as diverse as Australia, Egypt, Ghana, Jordan, Malawi, Pakistan, Republic of Korea, Romania and Turkey. Oversight agencies have been established to regulate quality assurance. Typically, these agencies have an overall responsibility for improving dialogue among stakeholders, quality, access and so on, but do not take over the detailed administrative responsibilities of relevant ministries. Usually these agencies take responsibility for developing and implementing quality assurance procedures, and at times for developing policy tools such as qualifications frameworks. Some examples of these agencies are Egypt's National Agency for Quality Assurance and Accreditation (NAQAA), the Malaysian Qualifications Authority, which is also responsible for quality assurance of higher education and vocational education, and the National Council for Standardization and Certification of Labour Competence in Mexico.

Policy measures to apply quality assurance have defined the process as a cycle, which is the case for example in the work done by the TVET council in Jordan (see Figure 12).

Figure 12. The quality assurance cycle

Source: ETVET Council and Leney, T. 2009. CAQA Organisation: Rationale and brief functional description (adapted from European Commission, 2009).

In Latin America and the Caribbean, quality assurance has shifted from the external assessment of inputs into TVET provision at the institutional level, to concentration on a peer-learning process that is based on collaborative self-assessment. There is more emphasis now on results, training needs and institutional improvement measures, as well as on inputs (Jacinto, 2011). The new generation of TVET quality assurance mechanisms used or developed in Latin America is intended to identify and meet training needs. They are committed to improving participation and results in training institutions, generating teamwork, and collaborative training and knowledge management processes. The challenges have included sustainability and institutionalization, as well as the development of certification tools (ibid.). Box 10 examines this shift in emphasis in greater detail, and provides several examples of TVET quality assurance schemes in Latin American countries.

During the period under review, efforts were also made in Europe to improve quality assurance procedures for TVET at national and regional levels. Through a peer learning process supported by the European Union's expert centres, this work concentrated on developing quality assurance mechanisms for TVET. The European Commission and the twenty-seven governments of the European Union agreed on a reference framework for quality assurance, in which the quality assurance process is described as a cycle, comparable to the Jordanian work cited above. The European collaborative framework also proposed some common principles for quality assurance systems (Seyfried, 2011).

Box 10. Regional Focus: New quality assurance schemes in Latin America

While there have been different systems around the world for evaluating the quality of training institutions, in Latin America such initiatives have been relatively modest, but various approaches have been developed or are changing in interesting ways. Previously the emphasis was on external management. Two procedures were used: one at system level and the other at training provider level. The general procedure involved maintaining a record of potential training providers (public funding applicants) required to conform to minimum formal conditions and available resources (financial, equipment, infrastructure and human resources). In practice, performance was seldom built into the quality assurance requirements, and whatever information was provided under this procedure was largely irrelevant.

The second procedure, applied in some training institutions, was the ISO system or a derivative, such as the Chilean Guideline 2728. This evaluated mainly administrative aspects rather than the training itself. Costs were often high and real participation insufficient.

More recently, a new generation of systems and tools for quality assurance in TVET has been developed in the region. These systems and tools are not focused primarily on administrative aspects, but instead pay more attention specifically to training, pedagogical components and results. They also emphasize internal participation through self-assessment and the creation of improvement teams. This approach prioritizes the training of managers and teachers in each institution, as well as collective knowledge sharing and cooperation between training institutions. At least in the early stages, these systems attach less importance to certification than to the process, though certification will be important in the medium term.

An example is the *Entra* 21 project of the International Youth Foundation which developed the 'Guide to Quality Assessment for Youth Training and Labour Inclusion Processes', which presents standards and indicators covering thirteen criteria, ranging from curriculum to labour relations. The Guide was used in projects throughout the region. Another example is the *Fundación Chile* self-assessment tool, which is also based on standards and indicators, and aims at improving the training of managers and technicians as a basis for strengthening strategic and management capacity, and subsequently developing a quality label.

Source: Adapted from Jacinto (2011).

Most frequently quality assurance procedures were applied to the accreditation of TVET providers, and to TVET qualifications, curricula and assessment. Logically, they should also be applied to the initial and continuing education of teachers and instructors, but this is generally not the case. In some cases, quality assurance systems are only applied to public providers, or public and private providers are subject to different quality regimes. Sometimes, for instance in Tanzania and Zambia, there is a common system of regulation for both public and private TVET providers (SADC and UNESCO, 2011).

TVET quality assurance mechanisms have matured in a number of countries. For instance, in Estonia, a competence centre for the external evaluation of higher and vocational education, *Eesti Kõrghariduse Kvaliteediagentuur,* (EKKA) has been created. EKKA's programmes use the European Quality Award Model

operated by the European Foundation for Quality Management. They aim to raise awareness among TVET institutions of their achievements and to improve the quality of their services. In Chile, a specific quality standard has been developed for technical training centres (OTECs), and the national training and employment service (SENCE) promoted the use of this standard as a means to generate a quality management system and continuous improvement in TVET provision (Seyfried, 2011). In many other countries, the development of TVET quality assurance procedures and mechanisms is work in progress.

Professionalizing TVET teachers and trainers

Improving TVET instruction contributes to improvements in the quality and relevance of TVET. The introduction of competency-based curricula has required additional training, as have pedagogical reforms intended to change instruction from a teacher-centred model to one that is learner-centred. In the latter, the teacher becomes a facilitator of learning rather than a lecturer 'from the front'. Efforts to professionalize TVET teachers and trainers have focused on defining competence profiles and frameworks appropriate for TVET professionals; improving pre-service TVET teacher and trainer education; and enhancing the continuing professional development of TVET teachers and trainers.

Given the challenges facing TVET, attention has to be given to changing the attitudes, approaches and professional activities of teachers and trainers. This must be done alongside efforts to reform the institutional structure of TVET to shift it from a supply-driven model to one driven by market demand. This policy challenge was nicely summed up in the question confronted in the ETF Yearbook 2007, 'How do we re-balance the tensions in TVET systems between input and outcomes and how can a renewed focus on substance and learning processes be fed into TVET reform policy?' (Nielsen and Nikolovska, 2007, p. 13). Several challenges arise in situations where teachers and trainers inevitably have a role to play in successful reforms and innovation, yet the training and development of TVET teachers and trainers has frequently received too little attention.

Developing competence frameworks for TVET professionals

The increased emphasis on a competency-based approach to TVET, and a wider range of TVET teaching and learning tasks implied by this approach, brought more attention to the need to define the heterogeneous competencies that TVET professionals required. A competence framework for TVET professionals is a generic description of the skills, knowledge and wider competencies that teachers, trainers and leaders should possess to promote improvements in the provision of TVET. This framework can help policy-makers identify the important aspects of TVET reforms and content needed for the initial and continuing education of TVET teachers and trainers. It can also help teachers and trainers become better focused and more confident in their own work and development.

The Philippines is one country that has attempted to harmonize the delivery of training services. It is distinguished by a diverse TVET provider community attempting to cover many needs for skills, with TVET trainers whose backgrounds are similarly diverse. In 2006 the Technical Education and Skills Development Authority (TESDA) endeavoured to ensure that the delivery of TVET services was consistent and of good quality across the country through the implementation of the National TVET Trainers-Assessors Qualification Program. This was designed 'to qualify and certify the current pool of technical trainers-assessors to ensure their competence in trade qualifications, and training and assessment methodologies' (TESDA, 2015).

Interest in developing a competence framework for TVET teachers and trainers is mostly at an early stage. In the European context, CEDEFOP has developed a Competence Framework for VET Professions. The Competence Framework identifies skills that TVET professionals will require in the future. These skills include a recognition of and emphasis on informal learning; capacity to collaborate within and among TVET institutions and the world of work; ability to network institutions with local and regional stakeholders; awareness of international perspectives on training; capacity to use ICT and digital networks; a holistic perception of TVET; a need for learner autonomy and self-directed learning; competency in pedagogical, networking and communication skills for TVET teachers and trainers; ability to use new media; knowledge of the interaction between education and society; and organizational competence development (CEDEFOP, 2009).

Upgrading pre-service TVET teacher education

Many countries have taken actions in the period under review to upgrade pre-service training standards for TVET. Policy measures have included the establishment of specific TVET teacher training institutions. In a recent review of TVET teachers' and instructors' training in Arab countries, Stanley (2013) noted that some countries have created a single coordinating body responsible for most pre-service TVET teachers' and instructors' training, with an expectation that this body would be able to implement government policy on teachers, trainers, instructors and tutors. The Egyptian Teachers Academy and the Technical Trainers College in Saudi Arabia are examples of these institutions. In Malawi in 2010, a TVET teacher training excellence centre was established.

The report *Teachers and trainers for the future* (ILO, 2010*b*) finds that in Ethiopia, Indonesia, Malaysia and Uganda, master's level programmes (and even Ph.D. programmes) in TVET have been considered. It also provides information from Saudi Arabia about the expansion of the TVET system there:

> *The three-year bachelor programme in Saudi Arabia combines a theoretical component in one of the six targeted "vocational disciplines" (business administration, information technology, electrical technology, mechanical technology, automotive technology and construction technology) with vocational pedagogy (learning how to teach technical subjects and carrying out micro-teaching situations in front of other teachers), company field practice (internships for teachers in enterprises), vocational field practice (trial-run teaching situations in real TVET classes) and a practical bachelor project (e.g. planning, carrying out and evaluating sequences of teaching or planning tracer studies for students from TVET schools).* (ILO, 2010*b*)

Whatever the approach, most TVET teacher training has been hampered by two factors that are proving difficult to overcome. First, it is difficult to link specialized TVET teacher training programmes to practice in the workplace. There is little evidence of industrial placements that would provide future teachers with current experience and work practices. Second, it is frequently difficult, particularly where the academic model prevails, to link the educational part of TVET teacher training programmes to acquiring the competencies that TVET teachers and trainers need.

The underlying problem with TVET teacher training is that there is a very weak professional knowledge base involving TVET pedagogy and delivery. As Nielson (2011, p. 19) has observed:

> *Many national systems which require a pedagogical foundation for TVET practitioners continue to derive this from teacher training rooted in general education contexts. Also the demand for more learner-centred approaches in vocational contexts calls for more specific and applied TVET knowledge which is not always served well by current approaches. Universities in most cases lack the application and workplace experience to respond effectively. The challenge is to combine the world of work and the world of education and consequently different fields of science.*

Expanding and improving the quality of continuing professional development

A number of different programmes have been introduced to expand and improve the quality of in-service continuing training for TVET teachers and trainers. These programmes may be organized as short-term or as longer-term courses as well as work-based learning.

> *In Serbia in 2006 and 2007 a comprehensive in-service TVET teacher training programme was set up in three sectors of TVET (wood processing, catering and tourism, and information technology) and eight occupationally specific courses consisting of general courses on vocational pedagogy and didactics, sector specific training for TVET instructors and organized internships for teachers in those three sectors. The MoE reforms focused on new and better TVET teaching methods, greater attention to innovation, fund-raising, improving communications and relations between schools and their "clients" (such as local businesses, local municipalities, labour market offices and employment services, parents, students and other regional stakeholders). Job placement, job guidance (including tracer studies), skills and training needs analysis and regional labour market analysis were also part of the reform approach. More than 1,000 TVET teachers out of a total of about 15,000 TVET teachers in Serbia have been trained under this programme based on a package of 27 in-service teacher training days.* (Ministry of Education, Serbia (2010) cited in ILO, 2010*b*)

In addition to formal training programmes, other innovative approaches have been used to develop TVET teacher skills. An interesting TVET teacher work-based learning approach was established in Denmark. The approach is the innovation and development grant programme, known as 'FoU' for financing school-based projects led by teachers at the provider and cross-provider levels. The Ministry of Education established the overall reform priority areas, and stimulated and financed teacher-led school TVET projects that were guided with the expertise of TVET teaching consultants funded directly by government. These development projects were seen as important contributions to the upskilling of TVET teachers in Denmark, where innovation of content, methods, and teacher competence development go hand in hand.

Clearly, teachers and trainers have a central role in strengthening TVET systems capacities to undertake successful TVET reform. The role of TVET teachers and trainers in TVET reform and their developing professionalism are issues that require more research and more careful policy attention. This applies to both initial TVET teacher and trainer education, and continuing training and capacity-building, all of which are needed to support and implement successful TVET reforms.

Empowering learners

Empowering learners is a different concept from learner-centred education (LCE), which has a narrower meaning, and is one of several curriculum and pedagogical approaches. LCE places strong emphasis on the learner, as do other aspects of curriculum and pedagogy, but does not entail the full sweep of opportunities and constraints that empowering learners implies, nor does it give much consideration to the complexities and barriers that learners face.

Concentrating attention on the learner was a central theme of modernizing TVET during the period under review. A focus on the learner implied, in particular, that TVET providers had to learn to adapt and reform in order to meet the needs of modern learners. Some TVET systems and provider institutions shifted their policy focus towards i) focusing on learners, ii) supporting learners throughout life, and iii) developing policies to support TVET learners making life and career choices.

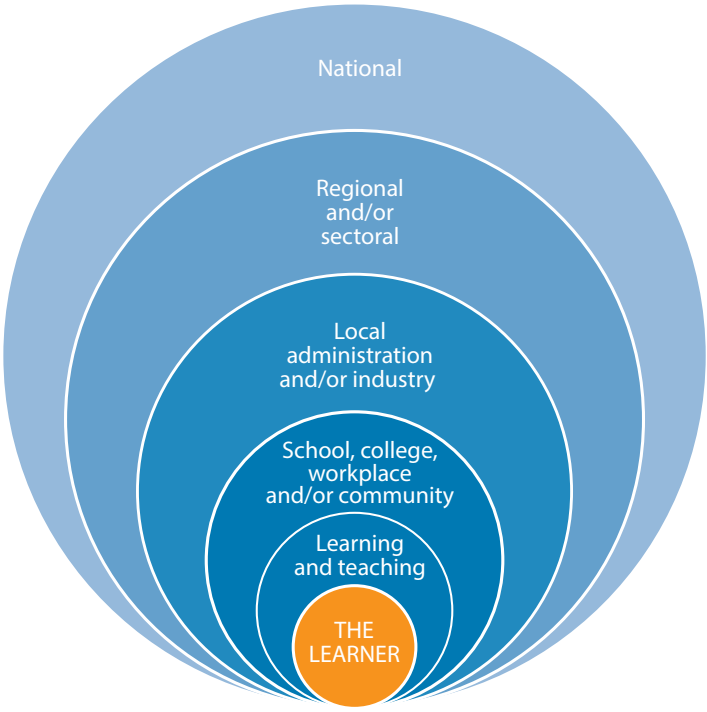
Focusing on learners

Numerous actions in the period under review have sought to empower learners. First, this has involved producing the knowledge and useful skills younger and older learners need. Second, it has required creating a wider range of TVET opportunities for large numbers of citizens as learners, developing policies that promote equal opportunities, and targeting groups whose social needs can be clearly established and tackled through TVET. Third, empowering learners has focused on lifelong, sustainable and innovative TVET as a way of supporting societies and cultures in which citizens see themselves as learners throughout their lives. Learning became increasingly seen as an integral part of personal development and innovation, and essential for adapting to changing circumstances and enhancing well-being.

Policy-makers have a tendency to introduce reforms and then believe that others will put the reforms into operation. Often this does not work. 'Backward planning' that starts from the viewpoint of the end user instead of the planner can be useful for getting right the balance between the broad sweep of policy development and policy implementation. The World Bank Institute's *Educational Planning Toolkit* includes 'backward planning' as a tool that aims to address a crucial failure in most policy initiatives and reform efforts – that they have insufficient impact on the life and culture of schools and colleges, on professional practices, and in particular on learners (World Bank Institute, n.d.). If TVET is to be more effective, there has to be an explicit focus on meeting learners' needs.

In Figure 13, implementation of reform is linked to learning and teaching activity, and the school, college workplace or community. As the circle widens, it covers the local administration, then the regional or sectoral level, then the national level. From a TVET perspective, each of the circles needs to be understood in terms of lives and livelihoods and how these interact with economies and labour markets. A focus on the learner means identifying approaches and policies that apply across the whole life course of the learner. It also means establishing policies that can support learners in the choices that they make.

Figure 13. Focus on empowering the TVET learner



Source: Authors.

Supporting learners throughout life

For many countries, the challenge is to develop appropriate forms of education and training that can open access to learning and progression pathways for all citizens, even though this is a long and inevitably slow process. Priorities for lifelong and life-wide learning vary between the emphasis being placed on economic development (towards a learning economy) and on social development (towards a learning society). For instance, China places its policies for the promotion of lifelong learning in a HRD perspective (see Box 11).

Box 11. Country Focus: China's HRD-based development of an institutional framework for lifelong learning

The People's Republic of China is an example of a country that is taking a strong, central political lead, and that has the financial resources to back its policies and ensure their implementation. Furthermore, China's policy is geared to HRD, in keeping with other states in the region, such as the Republic of Korea, Singapore and Malaysia, whose central governments have done much to foster HRD while encouraging entrepreneurship to thrive on a large scale. China's efforts to develop lifelong learning policies to reach a very wide range of individuals throughout the life course illustrate how lifelong learning policies can be effective for learners in different settings, and that progress can be made, despite obstacles and setbacks. This experience has relevance for a variety of countries, even though their culture, priorities and resources may be very different from those of China.

Source: Adapted from Yang and Valdes-Cotera (2011, pp. 61–69).

Developing policies to support TVET learners making life and career choices

Learners' choices about their participation and progression in TVET relate to wider life and career decisions. Policy areas that can support learners in making life and career choices include: information, advice and guidance services; linking TVET to basic and life skills; and incentives for learners to acquire TVET qualifications.

Information, advice and guidance services

As governments face uncertainty in the globalized context of economic, social and environmental changes, learners too increasingly need to develop their capabilities to find their way through a series of uncertainties. These may concern education and training outcomes and how best individuals can position themselves in labour markets that are often characterized by precarious jobs and unemployment for young people and adults. At best, information, advice and guidance services, where they exist, tend to be uneven in their coverage, and limited in their effectiveness. Developments in Latin America (Jacinto, 2011) are indicative of both strengths and weaknesses. Job search assistance and counselling services after initial TVET in Latin American countries have generally been undertaken by the training or public employment services. The Peruvian Program of Training for Work (CAPLAB), for example, organized a network of education for work centres and integrated them with information and mediation public services. Notably, public providers in secondary education were only just beginning to include advisor services to students prior to graduation, while private education offers this type of service widely.

Watts and Fretwell (2004) identify policy goals for information, advice and guidance systems in middle-income countries, based on a review of policies from Chile, the Philippines, Poland, Romania, the Russian Federation, South Africa and Turkey (Box 12).

Box 12. Some policy goals for career guidance and orientation services in middle-income countries

Learning goals

- Supporting lifelong learning (for both young people and adults) and the development of human resources to support national and individual economic growth;
- Promoting a more flexible education and training system;
- Building a stronger but more flexible vocational orientation within the school system;
- Improving the efficiency of education and training systems by reducing dropout rates and increasing graduation rates; and
- Strengthening linkages between education/training systems and the labour market.

Labour market goals

- Enhancing labour market efficiency;
- Limiting mismatch between supply and demand;
- Addressing skill shortages;
- Improving labour adaptability in response to market conditions, in terms of both geographical and occupational mobility;
- Reducing the extent and duration of unemployment; and
- Avoiding individual dependency on income-support systems.

Social equity goals

- Equal opportunities in relation to education and employment;
- Meeting the needs of disadvantaged and marginalized groups;
- Social integration of ethnic minorities;
- Supporting labour market participation of women; and
- Addressing gender segmentation in the labour market.

Source: Adapted from Watts and Fretwell (2004, pp. 6–7).

In view of the many uncertainties surrounding job markets, the advisory services were closely linked to employment and the promotion of social inclusion and equal opportunities in education. In effect, guidance has appeared to be closely associated with the more privileged groups, whose social, cultural and material capital enable them to select training and occupations that meet their interests and expectations. Less privileged groups tend not to have access to these services at school or elsewhere. The available information about changes in post-secondary degree choices and drop-out rates in upper secondary education clearly demonstrates the contribution that careers guidance can make.

The more innovative schemes have gone beyond career guidance. They offer young people tools to build their own strategies on the basis of their interests and potential, providing them with better information about social and work environments and post-secondary education. The ILO developed a regional initiative for secondary school students in 2005, the Project for Youth Employment Promotion in Latin America (PREJAL). The Project has received public and private funding. Its objectives include building awareness and promoting youth employment inclusion in public policies of the countries in the region. The project promoted the development of training and the participation of private companies in fostering social and work-related inclusion. Specific actions included career guidance and support services for young people from disadvantaged socio-economic backgrounds who had recently graduated from secondary education and were seeking to enter the labour market.

Other Latin American examples include Peru, where the Career Guidance and Occupational Information Service (SOVI) was established in 2009 for students in the last years of secondary school and for young people in general. This is a free service offered by the regional labour and employment promotion office. Another example is Chile, where the Chile Califica programme, developed with the German International Cooperation Agency (GIZ), and established in 2005, has an online vocational and career guidance component (JOBLAB©CHILE) that is available in schools and aims to facilitate vocational and career guidance for young people.

Linking TVET to basic and life skills

The Introduction and Chapter 1 noted that despite the positive impacts of EFA there are millions of young people who have reached the end of academic schooling with inadequate basic skills, while millions more are similarly disadvantaged by their lack of access to formal education. Countries are confronted with individuals who have not been able to acquire the basic competencies through formal education, because they failed to attended school, left school early, or simply were unable to master a set of basic competencies while at school. These individuals enter the labour market with a very weak foundation and limited opportunities for further learning. This limits their opportunities for decent work and social mobility. Many TVET policy measures and programmes are specifically designed to help individuals with poor outcomes in formal education through job-related skills programmes.

As a partial response to this challenge, many programmes link basic skills with technical and vocational skills so as to facilitate entry to employment for targeted groups of young people. Some of these are concentrated in Latin America. As mentioned in Chapter 2, the *Jovenes* programmes were initiated in Chile in 1990 and are now well established across the region. These programmes reached out to young people by combining technical training and work placements with basic life skills. The majority of participants came from low-income families. Evidence cited earlier shows that participation in *Jovenes* programmes increased employment and wages in a number of cases, particularly for younger and female participants, although the impacts varied according to programme and setting (Hakim, 2011).

Implementation and management of these programmes varies by country, but evaluations show that *Jovenes* programmes in Argentina, Chile, Peru and Uruguay had some common elements. According to UNESCO (2010*a*, p. 90) they were strongly targetted 'at youth from low-income families and those who have low educational attainment and limited work experience'. They were strongly targeted to young people from low-income families and those who had low educational attainment and limited work experience. Their training was also linked directly with the workplace and with wider skills development. To this end, most programmes provided training, work experience, literacy and numeracy courses. Job search support is part of the package. The state assumed control of programme design along with management and full or partial financing. In most countries, training delivery was decentralized, often involving a partnership between the public and the private sector (ibid.).

Similar in objectives and design, *Entra 21* was a programme designed to tackle marginalization among young people. It covered six Latin American countries: Bolivia, the Dominican Republic, El Salvador, Panama, Paraguay and Peru. *Entra 21* was a cooperation between the International Youth Foundation and the IADB, which provided courses targeted at marginalized young people that combined technical training and work placement with life skills and job-seeking skills. Employers were involved in the design of the *Entra 21* programme as well as in job placement, and the first phase seemed to achieve a good measure of demonstrable success. The second phase of the programme was designed to encourage young people to get involved in micro-enterprise development in the informal sector in El Salvador and Peru. This phase targeted 45,000 young people from low-income households and 5,000 young people at increased risk because of displacement or disability (ibid.).

The examples from Latin America point to actions taken by governments to make TVET modes of provision more flexible, so as to attract different groups of learners and respond more effectively to the multiple and changing demands that people face in their communities and workplaces. In practice, however, many of the programmes implemented across the world and particularly in low-income countries provide beneficiaries with low-level, low quality training in over-supplied trades, and lead to few prospects for further training. Many graduates from these programmes end up with limited chances for social mobility, working in informal-sector activities with few opportunities for technical innovation and skills upgrading.

Incentives for learners to acquire TVET qualifications

Incentives for learners to acquire TVET qualifications requires policy tools that, when implemented, are able to encourage and empower learners to participate in TVET in one form or another. A wide range of programmes have been used by governments directly or indirectly to motivate and incentivize young learners to participate in TVET, and thus also in lifelong learning, including financial incentives, work experience placement, career development, work-based qualifications and active labour market measures.

Conditional cash transfers provide an example of incentives where students are provided with a regular payment or allowance, usually with conditions attached concerning course participation and attendance. For example, an education maintenance allowance was introduced in England for poorer students, and had a positive effect on attendance rates. However, the scheme was withdrawn as part of fiscal constraints. Another type of incentive involves work experience placements leading to jobs. In Victoria (Australia), for example, the post-compulsory Victoria Certificate of Applied Learning is a flexible qualification based substantially on learning experience in the community and workplaces (Blake and Gallagher, 2009). Frequently, workplace learning experience leads directly to further qualifications and a job (Sweet, 2011).

Countries have also provided guarantees that TVET courses and qualifications will lead to career development and open up avenues to further education and training. This has been a major point of concentration in Europe, and it is notable that countries with clearly defined and successful TVET systems, including Austria, Finland, France and Germany, have all opened up clearly identifiable pathways and qualifications so that TVET students can expect open pathways to further education or training, and not to a dead end. This is a major theme in European Union collaborative policy development and reporting (Leney et al., 2005; CEDEFOP, 2010*d*).

Some countries also attempted to recognize and upgrade the skills of experienced workers, with schemes that combine validation of learning through prior experience with elements of qualifications. One such scheme is the successful *Noste Programme* in Finland. Over almost a decade, 10 per cent of mature workers who had left school in their younger years with few or no qualifications managed to achieve qualifications based on occupational competencies. Each participant developed a learning plan with an adviser, was entitled to support and guidance, and had the opportunity to study free of charge. Government, employers, trade unions and colleges were joint partners in the project, which achieved its aims between 2003 and 2009 (Ministry of Education Finland, 2010).

Finally, countries with well-developed social security safety nets usually tend to seek effective ways to encourage and bring unemployed people back into the labour market and employment through active labour market policies. Hence, in addition to the payment of unemployment or social security benefits, this includes an entitlement or often a requirement to undertake part-time or full-time training for work during the period of unemployment. If the unemployed person does not cooperate, entitlement to benefits diminishes.

Strengthening the management of TVET institutions

Since the Seoul International Congress on Technical and Vocational Education in 1999, considerable attention has been paid in different countries to the factors that make some TVET institutions work more effectively than others. While it is certainly the case that economic, social and cultural determinants have a very strong impact on the relative levels of success and failure of different TVET establishments, it is also the case that internal institutional factors such as leadership, quality of the teaching staff, ethos, the organization of teaching and learning, the use of new technologies, how the curriculum is implemented, and links with families and the local community make a significant difference to the quality of the learning that takes place and the outcomes that students achieve.

Perhaps in the most centralized political and education systems it is possible to pass education reforms down the line from ministries to schools and colleges, and from policy development to implementation across a range and number of institutions. Yet even in the case of the more collective learning cultures in some countries, the evidence suggests there are strong differences between the performances of different schools, and a trend towards some forms of decentralization is apparent. The trend to decentralization gives impetus to improving the management and organization of schools and colleges.

Modernizing TVET institution management

The decentralization of decisions involving staffing, course offerings and financing, among other issues, requires more attention to local institution management and its capacity. Modernizing TVET institutions in the period under review often included shifting responsibility for management from centralized systems to local institutions, thereby placing more responsibility on management of these institutions. Local management of TVET brings the institution closer to its labour market and is expected thereby to improve the effectiveness of schools. Over the decade, most TVET systems in the European Union devolved management responsibilities to the local level by providing institutions with greater autonomy.

Countries have found different solutions for implementing institutional autonomy. In Tunisia, the approach to decentralization attempted to change the way vocational training centres operate. According to the report *Integrating TVET into the Knowledge Economy*, in Tunisia, a new management model for training centers was conceived around three types of requirements:

> *(i) at a strategic level, the model provides the training institutions with an organizational and management framework to operate efficiently in a market-based economy and under the premise of accountability and results-oriented management; (ii) the definition of the functions required in the new organizational framework, that is, organization and management structure of the training centers, relations with enterprises, funding and financial management, accountability, and quality assurance; and (iii) at the operational level, the establishment of procedures on how to carry out the missions and functions of the training institutions, and the establishment of a management board.* (World Bank and DfID, 2003, p. 21)

The pressure to change institutions and the manner in which they were working was closely linked to changes in the conception of TVET. Many of the functions that were decentralized had not historically been the responsibility of local TVET institutions. Prior to the introduction of managed autonomy, these functions were under central control. The assumption of new responsibilities required the development of areas of competence on the part of TVET managers performing them. This involved a good deal of work, training and capacity-building in order to ensure a sufficient cadre of well-qualified and confident principals and managers who could take on these tasks. Successful institutional reform focused on the development of the professionals directly engaged, including the institution's management, teachers and non-teaching staff.

Successful schools speak of learning, but successful TVET providers must also combine this with signals of a close and innovative relationship with the surrounding world of work. The Malawi Natural Resources College provides a good example of a TVET institution that has taken control of its programmes and responded to the needs of the local community (see Box 13). An interesting innovation at this agricultural college was that the college links each agricultural student with a local farming family. The students are engaged in the community and gain insight into current farming practices and how these can be improved, while the farmers gain from what the students are learning at the college and can discuss improvements to their ways of working with the students.

Box 13. Country Focus: Malawi – the Natural Resources College, Lilongwe

The Natural Resources College is an agricultural and natural resources training institution situated quite close to Lilongwe. The college is on a large estate and has good training facilities, including a farm, natural forest and good links with neighbouring farming communities. The Board of Governors is appointed by the Minister, but operates with considerable management autonomy. The college is oversubscribed, entry requirements are published and entry exams have to be taken. All students are fee-paying, and some 650 of the 900 students are residential.

A decade ago the college offered two diplomas as well as certificate courses, and has updated its qualification and curriculum offer continuously. By 2010 it offered seven diplomas, and was working on the introduction of degree-level programmes and research involving stakeholders that include the government, university, NGOs and major employers. The college offered diplomas in the following fields: agriculture and natural resources management, irrigation technology, animal health and production, horticulture, environmental management for sustainable development, food nutrition and livelihood security, and land administration. The courses offered were developed in response to perceived demand. The college has good links with the stakeholders identified above, and informal feedback was used to identify qualification and training needs. This included feedback from student placements and annual work supervisors' visits to the college.

Teaching staff are qualified, with a small permanent staff and larger numbers of part-time staff. In the teaching programmes emphasis is placed on developing the skills and competence of students. All courses are modular. On one hand, basic studies have been introduced to strengthen the basic skills of some students. On the other hand, openings were available for successful students to progress to the University of Malawi, including the opportunity for a transfer of credit for the first year of study.

Source: Adapted from UNESCO (2010*b*, p. 50).

Colleges like the Malawi Natural Resources College (see Box 13) and Singapore's Institute of Technological Education make it a priority to develop and maintain their connections with industry. These links help them to engage employers and working people in the tasks of identifying and meeting local demands from the labour market. Where the informal economy is prominent, the links reach out as far as possible to areas such as the local crafts industry, fishing and farming, and the diverse range of trades and economic sectors that the local informal economy covers. Frequently employers can be motivated to contribute to the life of the institution, for example through providing talks to learners, serving on boards and offering work experience placements. This will only happen when employers see a benefit and/or believe that the institution is a worthy partner.

Integrating information and communication technologies into TVET

TVET institutions have been expected to introduce ICT instruction into their curriculum in response to the market demand for workers with these skills. Inevitably, the ICT content of many jobs has been transformed. For small-scale farmers, there are opportunities to access market information through mobile technologies that can inform important decisions concerning where and when to sell their produce, potentially making a significant impact on their livelihoods and future prospects. In urban informal economies, ICTs are a source of new job opportunities in areas such as mobile phone unblocking and cable television installation, while vehicle mechanics are increasingly required to deal with the computerization of vehicle systems. In the formal sector, there has been a massive increase in ICT use in a large variety of existing occupations, as well as an increase in new occupations in the ICT sector.

TVET institutions were also called on to integrate ICT into school operations involving instruction and management. Some regions and countries were not ready for this despite having made policy commitments to increase ICT use in TVET. South-Eastern Europe provides an example of this (Chinien, 2005). The Republic of Korea demonstrated that making a single specialized agency responsible for integrating ICT into the education and training sector in order to achieve the ambitious goals set by government can be effective. The purpose of establishing the Korea Education and Research Information Service (KERIS) was to contribute to raising the quality of education and research for national educational development through the production, survey, and collection of information needed for education and research, and through the establishment and operation of an educational information service system (see Box 14).

Box 14. Country Focus: Republic of Korea – adapting learning to the information age

Since its inception in 1999, KERIS has developed a number of information technology services and social network services, including an education information service, a research information sharing service, a national education information system, and an integrated educational finance e-system. These services have been developed based on experience gained through the design and implementation of substantial projects.

The key lessons from the implementation of these projects can be summarized as follows:

- establish master plan in advance and secure budget;
- define specific role and responsibility of related organizations;
- amend laws and regulations;
- standardize business process;
- standardize document format;
- select and run pilot schools;
- establish a help-line call centre;
- build a consensus on the new system in advance with stakeholders such as the teachers' union;
- build a systematic training system;
- select representative instructors and listen to them.

However, there have been barriers to success, including:

- some users' reluctance to use the new system;
- concerns from the teachers' union about aspects of the programme, especially the burden of record-keeping and data input; and
- worries about data protection.

In addition to the previously mentioned services, KERIS is now launching a more advanced national education information system and is taking a key role in supporting the establishment of future schools and colleges. It is doing this by creating a virtuous circle of ensuring basic academic quality through an online assessment system for developing teachers' abilities and information disclosure.

Source: Adapted from Cho (2012).

The use of ICT provided opportunities for expanding access to TVET for many learners across a wide range of countries. Kearns (2009) notes, for instance, that a number of remote and indigenous communities in Australia have accessed TVET through the Internet. E-learning grew in importance, and many countries and schools are now offering studies and qualifications online (see Mishra and Pulist, 2013). Forms of blended learning, which combines self-directed learning using online content with support from 'live' lessons, are growing. However, such initiatives are thus far limited in scale, and it is important to consider why the possibilities here are so much greater than the reality.

The pace of developments in ICT for TVET often exceeded the capacity of providers and policy-makers to make use of them in supporting teaching and learning. It can be difficult for the policy community to keep up to date with ICT's evolving potential, and the capacity to evaluate the costs and benefits. Since ICT developments often extend beyond national borders, their international reach raises challenges for nationally based education and training systems. The potential for far-reaching changes that will result from the incorporation of ICT in TVET can be highlighted here, along with the importance of assessing how far these changes are taking learning and societies in the direction of more equitable and sustainable development.

Improving governance and stakeholder participation

The governance of TVET is an aspect of reform that received a great deal of attention in the period under review. This refers mainly to the policy dialogue surrounding the development of TVET in the formal sector, but it also involves wider issues connected with the steering and coordination of TVET. Policy measures for governance included engaging stakeholders in active partnerships; deciding whether to decentralize, and how; developing supportive frameworks for implementation; strengthening the information and evidence base for policy development; and linking policy frameworks and implementation strategies in order to realize reform. TVET is conceptually, administratively and politically complex. Articulation with the rest of education and with the labour market can be challenging, as ministries of education often share responsibility for TVET policy with ministries of labour (Holmes, 2009).

Building active partnerships and stakeholder participation

Traditional, institution-based, public vocational training was governed almost exclusively by the suppliers of training, which were usually located in separate government ministries including education, labour, industry, health, agriculture and defence, and the administration of these ministries made decisions concerning the curriculum and approaches to teaching and learning.

Institutional fragmentation was a real obstacle to coordination, involvement of social partners and the implementation of reforms.

The modernization of TVET meant a more open and active partnership between public authorities and the associated stakeholders, particularly employer organizations and unions. Social partnership is the best term to describe this more participative form of TVET. It is inextricably linked with employment policy-making and to processes of social and economic innovation in which decision-making is distributed across a wider range of agencies and partners than was previously the case.

Strategically, the establishment of a TVET coordinating body was a clear way for governments to engage senior managers from economic sectors in TVET oversight and strategy. In their analysis of planning for technical and vocational skills development for UNESCO, King and Palmer (2010) cite a number of countries that have formed coordination agencies for TVET policy. These include Ghana (COTVET, the Council for TVET) and Pakistan (NAVTTC, the National Vocational and Technical Training Commission). In the period under review several countries encouraged active engagement in governance by employers, and in some cases unions. In the Philippines, industry groups were involved in regular consultations and dialogues at both the national and regional levels with TESDA.

Coordination of TVET through governance arrangements at the national level has been extended to the sector level. In India, since 2009, the National Skills Development Corporation (NSDC) has been leading the establishment of Sector Skills Councils as an instrument for meeting the demands for a trained workforce in different industry sectors. It has done this by bringing together all the stakeholders: industry, labour and the suppliers of education and training (UNESCO-Bangkok, 2013). In a range of settings these sector bodies have become major vehicles for employer involvement in setting occupational skills standards, often within NQFs. In some cases, such as South Africa and the Netherlands, such bodies also play a role in accrediting training providers.

The governance and institutional arrangements vary. In the United Kingdom, for instance, the Sector Skills Councils were accountable to the United Kingdom Commission for Employment and Skills, a government agency with strong employer representation in its governance and considerable autonomy from the relevant ministry. In South Africa, the Sector Education and Training Authorities (SETAs) reported to the Minister of Higher Education and Training, who intervened directly in matters of leadership and governance. In other cases, such as the coffee industry of Colombia, major export sectors have

developed internal models of cooperation, which have evolved from dealing with various initial concerns, such as collective international marketing, to encompass issues of skills development. In Pakistan, the emphasis was on ensuring better cooperation between public providers of initial TVET and employers (Bewick and Abbott, 2010).

In Latin America, revitalization of TVET has promoted a social dialogue on training that is actively engaging employers and their organizations, and often unions and third-party sector bodies too (Jacinto, 2011). There are also many examples of joint public–private TVET management projects, where the state supports training and projects that are developed by social movements, or which incorporate strategies previously successfully formulated by NGOs. At the same time, Latin American countries have also experienced a diversification of state agencies linked to vocational training: not only ministries of education and vocational training authorities, but also ministries of employment, ministries of agriculture, social welfare agencies and others.

Whatever model is chosen, important challenges remain, such as how to fund sectoral structures, particularly in poorer countries; how to manage their relations with the state; and how to ensure that the voices of smaller enterprises are represented. After a long tradition of supply-driven, government-led TVET, actors on the supply and demand sides are adjusting to a new decision-making context. The ministries are having to step back from taking all the decisions as suppliers of education and training. By the same token, the stakeholders have had to assume responsibilities that previously were left to the government (Leney, 2010). The introduction of such bodies is complex and was often hampered by delays, a lack of capability and sometimes difficulty in establishing legitimacy. Although the situation is improving, many countries in the Asia-Pacific region still have limited industry involvement. According to one study, less than 7 per cent of employers advise on TVET through national bodies and advisory committees (Asian Development Bank, 2009).

Introducing decentralization

There are numerous examples of how decentralization has been introduced and what functions were decentralized in the period under review. For a small country, the geographically dispersed Maldives shifted some of the responsibilities for the day-to-day organization and management of TVET to the regional level, so that geographically isolated groups of islands had increased power and responsibility to set up arrangements that empowered communities, providers and industries to work more closely together. In a

much larger country, China's efforts to reform its education and training system led to a significant degree of decentralization of responsibilities around a very clear national framework. This was perceived as necessary for a genuine national lifelong learning system to be established (Yang and Valdes-Cotera, 2011). Germany is also an example of decentralization where after the adoption of the Vocational Training Act in 2005, a wide range of new content and time models were developed locally with cooperation between in-company and school-based education and training (see BMBF, 2015).

As part of its decentralization of the education system, Egypt developed an ambitious programme in 2010 for decentralizing the provision of TVET. As a consequence, decisions on many functions were devolved to regional levels, and new institutions were established with specific responsibilities for setting standards, certification, assessment and evaluation of the education and training system. Actions for school empowerment and autonomy were also initiated. Finally, other actions were considered to enhance the involvement of civil society and social partners in policy decision-making. However, all this was not accompanied by a clear policy regarding capacity development, the responsibilities and accountability of institutions and actors, and the necessary performance-setting, monitoring and evaluation mechanisms (World Bank, 2010*b*).

An earlier analysis of trends in education and training across the European Union (European Commission, 1999) recognized that decentralization was a strong and growing trend, especially in the management of member states' school systems. The study distinguished between several distinct (but not all mutually exclusive) approaches to decentralization. The main forms observed at the very end of the twentieth century and in the European context involved dispersal of powers to social partners, where employers and other stakeholders have an increased role in education policy and decision-making, with social partnership particularly pronounced in the governance and management of TVET.

Regional devolution was also included as part of the European Union's decentralization of education and training. As a result, significant powers were exercised through regional bodies, often elected, and through leaders who are responsible beyond implementing policy for formulating appropriate policy at the regional level. A variation of decentralization that does not generally involve devolution of central government powers, but rather the geographical dispersion of central government agents and agencies, is *regional deconcentration*. In this model local civil servants are expected to be better informed than the central bureaucracies, but remain directly the agents of the latter.

The form of decentralization chosen has to be suitable to the context. Decentralization may be inappropriate in some circumstances, particularly if effective systems are not in place and if the main participants are insufficiently trained and ready. Building capacity for a decentralized system is critical to its success. Indeed, limited capacity has been the cause of some recentralization in certain countries, such as Botswana and South Africa.

Developing supporting frameworks for implementation

International experience shows that the formulation of effective TVET policies is a difficult task, but successful implementation of these policies can be even more difficult. Tools for moving from design to implementation include legislation defining roles and responsibilities, and new institutions to carry out implementation responsibilities. Like policy development, policy implementation can benefit from improvements in the evidence base that surrounds TVET policy and practice, and linking the policy framework with implementation practices.

Improving the evidence base for TVET policy and practice

The demand for evidence-based policies has driven efforts to improve labour market data and research involving TVET. Questions about the effectiveness of TVET in preparing the workforce for twenty-first-century employment have called for the collection of school and employment data that can provide answers to these questions about effectiveness. This in turn has been backed up by efforts to monitor and evaluate TVET reforms. A recent report on TVET in the member countries of the Southern African Development Community (SADC) highlighted the persisting problems in one subregion. Its findings on TVET data and research are relevant for many other parts of the world (see Box 15).

Box 15. Regional Focus: Weak evidence base for TVET in SADC Member States

The paucity of data, information and knowledge about the state of TVET in the SADC region in the review period is a serious obstacle to system development and improved quality. Management information systems (MIS) are weak or absent, there are few data for evaluating pilot projects, and TVET research in the region are inadequate and only developing in isolated, ad hoc ways.

By far the worst ranked indicator across national reports is the MIS indicator, which shows that such systems are often very weak or altogether absent. There are huge data gaps and weaknesses for several indicators in the pilot regional monitoring tool. Even getting basic TVET data and ensuring their accuracy is beyond some systems, as is the ability to disaggregate for target groups, to compare public and private TVET provision or to do any forecasting beyond the horizon for several SADC countries. There is a lack of feedback data to inform development at both institutional and national levels. For national systems, such data are vital if policy-making is to become more evidence-based.

The third leg of a TVET knowledge system is research. With very few exceptions, governments in the SADC region lack internal capacity for either the generation or analysis of research. The relative lack of donor interest in TVET has also led to a decline in internationally funded consultancy work on TVET, although much of the available evidence on TVET delivery in the region still comes from consultancy reports. There is very little in the way of academic research on TVET in the region to complement consultancy, however, and there is an almost complete absence of university-based TVET research.

Without these three legs of the knowledge system being in place, it is not surprising that the monitoring reports are too dependent on policy statements that reflect where policy-makers say they want the system to go rather than where the system is. Without data and research capacity, there is a tendency for 'what should be' and 'what is' to be conflated and policy intention to be taken as success. This can seriously undermine genuine attempts at reform. Thus, addressing knowledge capacity must be a major priority of TVET reform in the region.

Source: Adapted from SADC and UNESCO (2011).

The cost of collecting and using TVET and labour market data more effectively is high in financial and human resource terms, particularly where there is a focus on the capacity of social partners and civil society to contribute to this process. Yet the cost of neglecting management information needs and the evidence base that research can provide to inform TVET policy and practice is also high. After several years of TVET research cooperation in Europe, the European Commission published a working document, *Towards More Knowledge-Based Policy and Practice in Education and Training* (European Commission, 2007). It showed that there was a clear difference between European countries in this regard. In some countries, MIS and TVET research were comparatively strong, while in others there were definite weaknesses, with very limited capacity for TVET data collection, analysis and research.

The labour market information system in most countries was supported by what may be characterized as first and second-generation measures of skills and institutional arrangements (ETF, 2009; Inter-Agency Working Group on TVET Indicators, 2012). Box 16 provides a detailed outline of key features of this approach. Labour market information systems of the first generation share a number of features. For instance, they focus mainly on supply-side characteristics, rely on administrative records or standard labour force surveys as data sources, and include indicators for which data are now routinely available. Second-generation indicators of labour market information systems build on those of the first generation to provide a more nuanced picture. Thus, they broaden the focus to include demand-side factors such as composition of the economy, growth rate, wages trends, returns on education and training, and time to fill a vacancy (see UNESCO, 2013*b*).

As interest in skills development continues to grow:

> *there is a corresponding increase in interest in what might be called the third generation of labour market information and skills indicators, ones that are closely aligned with measures of matching skills. Building on the first two generations of indicators, the defining features of the new indicators include a broader focus on the match between jobs and skills, the measurement of the skills possessed by the existing workforce, not just those about to enter it, and development of new survey instruments designed specifically to generate the new data.* (UNESCO, 2013*b*, p. 57)

Very few countries have developed a third generation of labour market information and measurement of skills.

Box 16. TVET and labour market information instruments and institutional arrangements

Generation	Institutional arrangements	Focus	Data collection tools and mechanisms	Set of indicators
First generation	Informal organization, i.e. no institution is responsible for the labour market information system.	Focus mainly on supply-side characteristics.	Rely on administrative records or standard labour force surveys as data sources. Existing information is generally unreliable, even where ad-hoc studies have been carried out.	Include indicators for which data are routinely available.
Second generation	Institutional organization (in this case institutions and bodies, inside or outside the respective ministries) have been given responsibility for the systematic monitoring of developments in the employment market and/or in the education and training system.	Broaden the focus to include demand-side factors.	Use direct measures of the literacy and numeracy skills of young people who are about to enter the workforce (e.g. PISA test scores for 15 year-olds); and data from new sources, including the World Bank's Investment Climate Surveys.	Composition of the economy, growth rate, wages trends, returns on education and training, time to fill a vacancy, etc.
Third generation	Network generation, permanent networks are created, with varying degrees of institutionalization and coordination between the institutions and the bodies producing information, as well as between the main parties involved in the education, training and employment systems.	Broader focus on the match between jobs and skills; measurement of the skills possessed by the entire workforce, not just those about to enter it.	Reliance on new survey instruments designed specifically to generate the new data.	Indicators on the efficiency of matching skills.

Source: UNESCO (2013).

Finally, rigorous evaluations of training programmes are scarce, and this hampers the development of feedback for policy learning. Fares and Puerto (2009) conducted a review of 345 studies of training programmes in ninety countries. Although these studies varied in their rigour, the authors classified the different programmes into four categories: i) in-classroom training; ii) workplace training; iii) training in the classroom and in the workplace; and

iv) in-classroom and workplace training plus supplementary services such as counselling and job-search assistance. Based on this typology, the authors observed a transition from in-classroom training to a more comprehensive approach, which provided in-classroom training combined with workplace training and supplemented by additional services. This transition was strong in Latin America, and within the OECD, especially among the Anglo-Saxon countries.

The Fares and Puerto study found that the interaction of in-classroom and workplace training increased the likelihood of positive labour market impacts by 30 per cent, compared with in-classroom training alone, and by 53 per cent when additional services were provided. Combining theory in the classroom with practice in the workplace, similar to the German dual training model, with counselling and other support services, provides added value to the training. Fares and Puerto also found in their meta-analysis that only 5 per cent of the programmes reviewed had a positive impact and were cost effective (that is, the benefits outweighed the costs of the programme). However, it is important to stress the limits of available data here, including the bias of data towards certain countries and the uncertain reliability of the initial studies on which the meta-analysis was built.

Linking policy frameworks and implementation for reform

In many countries, the preparation and passage of new legislation was clearly an important part of the policy actions to advance the implementation of reforms in the review period. Many countries introduced new legislation to support TVET reforms. NQFs featured strongly in much of this legislation (Castejon et al., 2011). It is necessary, however, to be cautious about how legislation is developed for TVET in some countries. Drafting legislation is very difficult, and this difficulty appears to have led some resource-challenged countries to retain outdated legislation. TVET laws without plans and resources to implement them may have symbolic value, but very little else. For instance, a review of legislation in SADC countries found legislation dating back more than thirty years alongside several recent laws and proposed legislation (SADC and UNESCO, 2013).

Countries also saw changes to institutional infrastructure as a key part of designing and implementing reforms. New agencies were set up to manage the implementation process. The previous sections described several types of institutions, illustrated by national training authorities, training funds and sector skills councils. These new agencies often have a remit to engage with a

wide range of potential stakeholders, including employer organizations and unions. In most countries introducing an NQF required the establishment of new institutions such as national qualifications authorities and quality assurance and accreditation bodies (Castejon et al., 2011). Allais (2010, p. 76) described implementation as 'having been "hindered" by differences between different government departments or agencies, lack of power of qualifications authorities, overlapping responsibilities, conflicts between different laws and regulations, and changes in government'.

According to Allais (2010, p. 76), case studies of NQFs 'offer considerable evidence of failures of government departments and agencies to work together or maintain a consistent policy over time'. Moreover, in many cases, institutions, financial mechanisms and procedures had not been put in place to support TVET reforms. In a recent review of TVET reforms in twenty-seven countries including Southern Mediterranean Arab Countries, the Balkans and Eastern Europe the European Training Foundation's *Torino Process* concluded that issues that remain important for moving from design to implementation of reforms included the need for capacity-building in the institutions that have to implement these processes, and the need to make appropriate financial investments in these bodies or institutions (ETF, 2012).

Using funding to steer TVET

Diversifying the sources of financing and using funding to motivate effective and efficient institutional management of TVET became major areas of concern in the period under review. Diversified financing of TVET was considered crucial for a successful transition from policy formation to long-term policy implementation. Financing policies were expected to ensure both the stability of funding needed to develop the capacity for policy implementation and the level of financing to improve TVET outcomes. Key examples of policy measures that have been used include the establishment of training funds and improvement of the effectiveness, efficiency, equity and accountability of TVET funding. Hence, funding mechanisms and methodologies for allocation and use were used as an integral aspect of TVET steering.

Mobilizing financial resources for TVET

Training funds have been prominently featured in efforts to mobilize financing for TVET, particularly from employers, but also to unify different sources of financing for TVET. Training funds are also used to allocate funds in accordance with national policies and priorities. When funding is performance-based, these funds can have important impacts on the training outcomes. Despite important differences between countries in the design of these funds, they have strong points that make them an attractive policy option to promote pre-employment and continuing TVET. Differences between training funds in countries mainly concern their governance arrangements, bipartite or tripartite nature, and the type of activities and target groups they support.

Training funds typically draw some of their funding from payroll levies on wages. Other sources of financing are development agencies and government. Training levies are not restricted to larger countries such as France and Brazil. They also operate in countries with relatively small populations such as Malawi, Tunisia and Barbados. Payroll levies range from 0.1 per cent to 2.5 per cent, depending on the country. They can also vary within countries depending on a company's characteristics. In a World Bank publication, *Skills Development in Sub-Saharan Africa*, Johanson and Adams (2004, p. 10) defined the characteristics of effective training funds as 'transparent rules for allocation, good governance with employer and worker representation, sound management, effective targeting instruments, regular monitoring and evaluation of training results, and attention to fiscal sustainability'.

According to Johanson (2009) over sixty countries have – or have had – training funds. Most training funds are found in Latin America and Africa, but they are also prevalent in Europe (CEDEFOP, 2008). Johanson (2009) provided a useful typology of training funds: i) pre-employment training funds, ii) enterprise training funds, and iii) equity training funds.

Pre-employment training funds aim 'to reduce shortages of skilled workers by increasing the supply of well-trained individuals in the labour market' (Johanson, 2009, p. iii). The objectives 'typically are to create an adequate training supply for the needs of employers and create the necessary training capacity to do so' (ibid.). These funds when financed by payroll levies spread the cost of training among all firms, helping avoid the free-rider problem, in which some firms are reluctant to train and instead draw skilled workers from other firms that have trained them.

> *Pre-employment training funds have been effective in building national training capacities and increasing training provision. For example, SENAI in Brazil trains 2.8 million people per annum and has accounted for over 30 million trainees since its creation. Where governed by employers, pre-employment training funds can increase the relevance of training to economic requirements.*
> (Johanson, 2009, p. iii)

According to Johanson, 'enterprise funds aim to increase the productivity and competitiveness of firms by raising the skills of workers. The objective is to increase the incidence of training within firms' (ibid.). The Special Training Contracts Fund in Morocco for example, supports enterprises in defining their skills needs and in investing in employee training. An alternative to national enterprise training funds is sectoral, or industry specific, training funds, for example, the SETAs in South Africa. In Cyprus and Spain, social partners established an intersectoral training fund, with the fund being governed on a tripartite basis (CEDEFOP, 2008). Equity-oriented training funds respond to a social equity rationale. Their goal is to raise the incomes of disadvantaged people by providing skills development opportunities. They typically seek to reach specified target beneficiaries, such as the unemployed, women, youth or those in the informal sector. Johanson (2009, p. iv) notes that 'equity-oriented funds have been successful in reaching disadvantaged persons particularly in the informal sector'. An example of an equity training fund is the Cambodian Training Fund, which was established with the support of the Asian Development Bank. However, sustainability is a challenge for equity-oriented training funds, since most of these funds were started up by donors, particularly in the least developed countries.

While training funds help diversify financing for TVET by drawing on payroll levies, some of this financing might have taken place even without the fund, since firms have an incentive to train and might have paid for the training without the fund's resources.

Improving results with TVET funding

Financing can be used to improve the outcomes of TVET, especially when consumers are empowered to exercise choice in how the funding is spent. Moving decisions about how financing is used, away from training providers and centralized bureaucracies, and placing control over financing in the hands of employers, workers, learners and job seekers, can lead to a more efficient allocation of these resources. It can produce greater accountability for results when training institutions are held accountable by businesses and households

for the quality and relevance of the training they offer. Training funds that purchase training services through competitive bids can hold providers accountable for achieving results. Performance-based financing formulas used by government agencies were used to improve providers' accountability for results. Vouchers are also an instrument intended to empower consumers of training with choice.

As central departments and government sought to develop responsive and effective arrangements for training, some aspects of managing TVET funding were usually devolved. For example, Ethiopia engaged in reforming its TVET financing framework, based on the core principles for financing laid out in the National TVET Strategy. The main principles of the TVET financing framework were 'diversification of funding sources, increased involvement of the private sector, and increased efficiency' (GTZ, 2006, p. 5). In the United Kingdom, Denmark and the Netherlands, traditional funding mechanisms based on past enrolments and courses offered were:

> *complemented by new funding mechanisms like performance-based allocations for training institutions, training funds directed to end-users of training services, and increased cost recovery, with targeted assistance to the poor.*
> (ETF and World Bank, 2005, p. 5)

TVET funding mechanisms were used to incite providers to deliver TVET programmes that contribute to national objectives and priorities. Measures to enhance efficiency included support to providers to maximize their outputs and control training unit costs. Finally, other measures targeted students from different social and economic backgrounds to ensure equal access to education and training opportunities (see Gasskov, 2006*a*, 2006*b*). The progress made in using TVET financing to improve TVET system outcomes was uneven, however, and in many countries public provision still typically uses an input-driven approach to financing. UNESCO's TVET policy reviews in a range of countries including Malawi, Cambodia, Lao People's Democratic Republic and Benin (UNESCO, 2010*b*, 2013*b*, 2013*c*, 2013*d*) show that financing is not linked to efficiency and accountability in terms of outputs or outcomes.

According to King and Palmer (2010, pp. 81-2), public TVET institutions typically received budgetary allocations:

> *based on some input-related formula (number of instructors, number of trainees, previous year's budget, and so on) that remains the same whether the institution is performing well or not. [...] Instructors and managers get paid regardless of the quality of training delivered or the pass rate of their trainees.*

In this environment, according to King and Palmer (2010, p. 82), 'instructors and managers get paid regardless of the quality of training delivered or the pass rate of the trainees'. Institutions often did not have the autonomy needed to mobilize further resources by raising fee levels or generating other sources of income, such as selling training and other services to local employers and companies. 'Public institutions received little government support for developing additional income streams, for example, through setting up production units. Public resources typically were not used strategically to promote social equity...' (King and Palmer, 2010, p. 82). Financing reforms have been moving away from this supply-driven approach to a more demand-driven approach.

Conclusion

This chapter has described policies and policy measures that rose to prominence during the period under review with the goal of strengthening the capacity of TVET systems to be more responsive to contextual demands. The chapter recognized the complexity of TVET policies and the challenges to put the policies into practice. It pointed to progress in some countries that have reinforced systems capacities to respond to external demands. In others, the adoption of a comprehensive approach to reforms and support for their implementation remains a major challenge.

A close look revealed that a majority of countries have already developed or are developing TVET strategies and policy frameworks. Most of the policy measures presented in this chapter have been included in the design of these frameworks. The challenge for many countries remains to move from design to implementation, with the latter's necessary focus, priorities and trade-offs. Engaging all stakeholders at national and local levels in this transition is a challenge. However the largest challenge to implementation of TVET reforms is in building the institutional and individual capacity to implement the reforms. Good policies have been adopted to address contextual factors driving change, but remain unimplemented because of inadequate capacity, expertise, and weak infrastructure and organization. Looking ahead, efforts to build this capacity will shape the future transformation of TVET.

Chapter 4

An Analytical Approach for Transforming TVET Systems

The Introduction of this book presented TVET as having immense potential that is yet to be realized in a good majority of countries. As such, the global debate on what it would take to unleash this potential rages on, with UNESCO playing a critically important lead role. This book is yet another expression of UNESCO's voice in this global debate. It argues that unleashing the potential of TVET systems will require a transformation that seeks to make them optimally responsive to contextual demands outlined in Chapter 1, while at the same time shaping the nature of these demands. In the twenty-first century, these demands are diverse, complex, unpredictable and rapidly changing. But they have been broadly characterized in this book as mainly pertaining to economic growth, social equity and the sustainability of development. The book holistically conceptualizes development as being a social process with economic, social, human, cultural, ethical, moral, political, technological, environmental and other dimensions.

In Chapter 2, it was suggested that the various external demands on TVET systems catalysed a number of policy responses, associated policy measures and programmes, which have been used by countries in the period between two landmark events, the Second International Congress on Technical and Vocational Education in Seoul in 1999 and the Third International Congress on TVET in Shanghai in 2012. Chapter 2 pointed out that each of these policy measures and programmes placed internal demands on TVET systems to strengthen their potential to effectively implement them. Although there are many success stories to be found and examples of strengthened TVET systems, in general it appears that in their present form most TVET systems cannot sufficiently meet the triple external demands on them, and do so in a balanced manner and/or in a strategically weighted manner. Across many contexts, policies, policy measures and programmes seem to have emerged in a reactive, even sometimes spontaneous way, rather than in a carefully orchestrated proactive manner. Not surprisingly, the results have mostly been imbalanced, uneven, insufficient, uncoordinated, fragmented and sometimes even inconsistent in policy and programmatic responses.

Moreover, while some of the policies and policy measures outlined in Chapters 2 and 3 were a response to one or more contextual demands, they tend to have developed without sufficient cross-referencing or rigorous analysis. For example, measures for TVET in the informal economy were not necessarily considered in relation to measures intended to foster citizenship. There have been historical boundaries between formal, non-formal and informal TVET, and within these, TVET opportunities have historically been

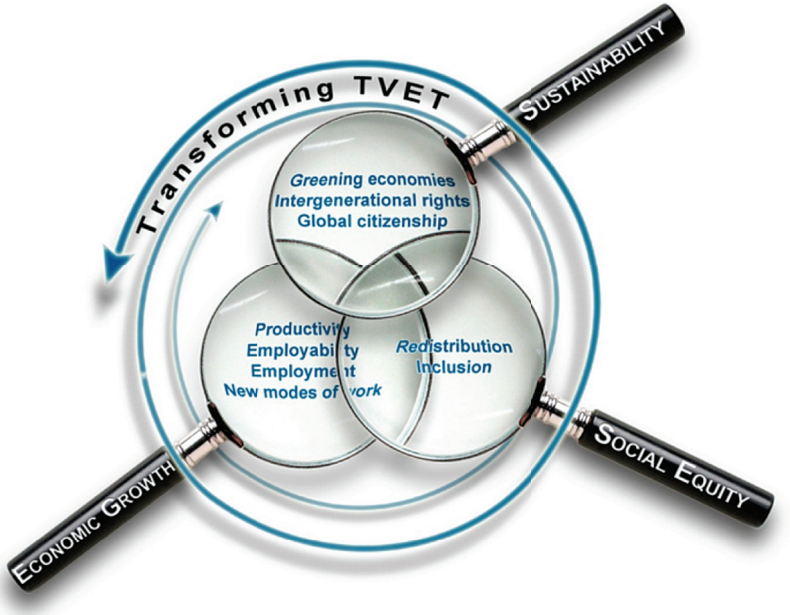
highly fragmented by economic sector. Part of the reason has been the fragmented approach to policy-making by different government ministries. It has often proved difficult for governments to coordinate or connect related parts of the TVET system. Policy 'solutions' have sometimes been transferred uncritically from one context to another. However, this chapter suggests a more fundamental problem. This is the absence of a suitable, shared and intersectoral approach which could help to connect the analysis of TVET systems with intended development outcomes.

Chapter 4 therefore seeks to advance TVET policy development by proposing a new, integrated, analytical approach that combines economic growth, social equity and sustainability concerns in a balanced and strategic manner. It argues that its application should help TVET systems to learn better from the past so as to better meet the challenges of the future. The approach is intended to move TVET systems towards a more proactive posture when formulating their contributions to holistic development. Whereas in the past, many TVET systems have reacted to the demands placed upon them without significant analysis of contextual information and data, the proposed approach advocates for in-depth analytical work to precede and to continuously accompany TVET system reforms. This should help TVET fulfil more of its development potential.

Considering the risks of uncritical international transfer of policies, mentioned above, it is important that while the analytical approach presented in this chapter should be generally applicable to the wide diversity of TVET systems, it should also be operationally flexible enough, and adaptable enough, to address demands that vary widely across spatial and temporal contexts. The analytical approach should be theoretically grounded, yet at the same time it should be practical enough to be applicable by TVET authorities and other stakeholders even where local research and analytical capacities are relatively weak.

The analytical approach proposed here takes account of these requirements. It uses the metaphor of three interlocking lenses, each of which corresponds to one of the three demands: economic growth, social equity and the sustainability of development. Thus it facilitates the analysis of TVET systems from the perspective of these three demands (see Figure 14). The handles of the lenses signify that the control over how the three analytical perspectives are used separately or in a weighted combination should be determined by the specific context of TVET policy-makers and stakeholders. Such strategic selection of the lens to use and/or the weighting of the lenses is to be determined by the contexts in which they are applied.

Figure 14. Three analytical lenses for transforming TVET



Source: Authors.

The metaphor of these three lenses underscores the reality that for strategic and even practical reasons, a TVET system can focus – as though through a lens – on responding more to one demand than to the others, or even more to certain aspects of that demand than to others. The system's choice of the lens through which to focus is determined by the challenges in its particular geographical and temporal context. For instance, a country – or other geographical demarcation – going through a recession may need to adjust the attention of its TVET system more towards economic growth than a country facing an environmental catastrophe. Yet still, a country may change the balance of attention of its TVET system over time as the demands and challenges change. Together, the lenses are an approach for deepening the analytical resources and knowledge base that should guide the transformation of TVET systems in particular contexts. They are therefore about optimizing the contextual responsiveness of TVET systems, or simply about unleashing their potential in particular geographical and temporal contexts. The arrows circling the lenses signify that the combined transformative effect of the lenses is greater than the sum of the parts. They also illustrate that transformation is continuous.

The interlocking lenses shown in Figure 14 are not mutually exclusive. They partially overlap to demonstrate zones of complementarity and interdependence. Each of these lenses also contains a number of elements upon which, similarly, greater or lesser emphasis may be placed, depending on context and priorities. In countries marked by slow growth and job creation, attention will naturally focus on economic growth and the role TVET can play in this, but at the same time, this growth will draw attention to TVET's connection with social equity and balancing economic opportunities for all. Not all growth will be sustainable or neutral in its effect on the environment. TVET can also play important roles in promoting green economies and environmentally friendly development. TVET thus interacts through these three lenses, and the balance of attention to each may vary with time and context.

This approach endorses the need to expand TVET systems in order to meet the growing demands on them. However, it underscores that the systems should not be expanded in their current state of unmet potential. It propagates the view that expansion must be preceded by, and then constantly accompanied by, evidence-based transformation of TVET systems. As already stated, such transformation should endeavour to enhance TVET systems' support for economic growth, social equity and the sustainability of development. As noted by the United Nations System Task Team on the post-2015 UN Development Agenda, with reference to development as a whole, business as usual 'cannot be an option and transformative change is needed. As the challenges in all areas of development are interdependent, a new, more holistic approach is required to address them' (UNSTT, 2012, p. i).

In this book transformation is perceived as dynamic, continuous and mainstream rather than as a 'time slice' typical of periodic education and training sector reforms. It is conceived as responsive – to the changing context – as well as proactive – by shaping the future context. This chapter therefore elaborates a new analytical approach that can inform the continuous and strategic transformation of TVET systems to sustain and improve their contextual responsiveness and to further sharpen the innovative edge required to shape their contexts. As each of the three lenses is explained, its analytical possibilities, and some of the challenges, are discussed.

The economic growth lens

As already presented in the Introduction, economic agendas have dominated much of the conventional thinking about the purposes of TVET, even where national economic policies and priorities have differed. At a macro level, the economic growth lens focuses the analysis of TVET systems primarily on how to provide people with the knowledge, skills, dispositions and technological know-how required to support higher value-added productivity, sustained growth and competitiveness. Globalization and the movement of economic production across national borders have accelerated change in many country settings, and brought increased attention to TVET through the economic growth lens.

At the micro level, the economic growth lens enables TVET systems to focus on equipping individuals with skills for employability and for earning a living. For young people entering the labour market for the first time, this lens focuses the system on equipping them with work/job-ready skills that ease their transition from school to the world of work, as well as the broader base of skills already outlined in the Introduction as necessary to meet the demands of the new development paradigm. For youth and adults already in employment, the economic growth lens focuses the system on the provision of in-service, continuing TVET and lifelong learning. For adults and ageing people in particular, the lens can focus the system on providing opportunities for the constant retooling and upskilling required to keep them current and productive in various forms of work over longer periods of time. Workplace learning is especially important where modes of work are radically changing and thus require new skill sets.

At both the macro and micro levels the lens permits analysis of how TVET systems can contribute to growth and to employment creation. The application of the lens is cognisant of the reality that growth can be accompanied by structural changes in employment and unemployment. Concurrent promotion of growth and employment may involve the prioritization of skills development in specific labour-intensive sectors, or championing entrepreneurial learning and the development of small and medium-sized enterprises. A further element to the economic growth lens is the relationship between TVET systems and new modes of work. As already indicated, TVET needs to both respond to demands and shape its future contexts. Workplace learning and transversal employability skills are especially important for ensuring that people can adjust to new modes of working.

Productivity and growth

In today's competitive economic environment, investors are seeking to maximize returns on their investments and companies are under pressure to increase the contributions made by their human resources to the bottom line. Process designers, across economic sectors, know that increasing productivity needs the right mix of technology, knowledge, skills and work-appropriate dispositions. At the macro level, this element of the lens looks for the optimum investments in and combinations of skills to achieve the highest levels of productivity, whether for firms, investors or entire economies. Specialized skills related to priority economic sectors are clearly important, even in contexts of high unemployment; demand for skills often outstrips supply, especially in technology-intensive occupations such as engineering, ICT and knowledge-related occupations, each of which demands a solid grounding in mathematics and the applied sciences together with technical understanding and know-how.

With the restructuring of the global economy, countries have attempted to add value in the extractive industries through various forms of processing, often involving middle and higher-level skills. While primary industries undoubtedly remain important sources of wealth, especially in developing countries, many companies are seeking to move up the value chain. Human resource development strategies for productivity can aim to upgrade the skills of the workforce, as well as to target the skills needs of specified industries in which the country has a comparative advantage.

In some cases economic restructuring has involved the closure of traditional extractive industries and the relocation of manufacturing and processes facilities to countries with lower costs of production and hence changing opportunities. Some countries, and regions within countries, have experienced the growth of service sector employment with its contrasting skills demands. In some parts of the world, political transitions from centrally planned to market economies have had a dramatic impact on the skills required for productivity and growth. Industries have had to become competitive, smarter and more responsive to consumer needs and demands, involving new models of business planning, management, marketing, accounting and customer relations.

The analysis of TVET from the perspective of improving productivity and growth thus may begin with an assessment of new economic opportunities, and be part of wider industrial or trade and investment strategies. For countries seeking economic transition, investing in skills for productivity can help to attract business investments that further contribute to productivity and growth.

Employability

There is a clear intersection between the skills required for productivity and growth, and the skills required by a changing labour market, whether in primary, secondary or tertiary industries. Given the pace of change, societies and individuals are increasingly realizing that they cannot count on current patterns of employment continuing into the future. Where there are fewer 'jobs for life', and occupations quickly become obsolete while others quickly emerge, transferable employability skills are needed to enable individuals to enter and navigate the world of work, as well as to move between occupations within and across economic sectors. These skills include, for example, critical thinking, communication, teamwork, negotiation, adaptability and most importantly knowing how to learn. A conscious focus on employability skills is a promising strategy for improving collective and individual resilience to rapidly changing economic circumstances. Job-search skills, for example knowing how to prepare a CV, and qualities such as punctuality, reliability, integrity and trustworthiness also enhance employability. With employability skills, young people and adults are able to minimize the time taken to find a job, or to move jobs. Whether for addressing youth unemployment or for keeping ageing adults productive longer, employability potentially reduces dependency on the state as well as on families and communities, while contributing to economic growth.

Employment creation

While TVET systems can contribute to productivity, growth and competitiveness, and these can support employment creation in existing enterprises or new enterprises, it is by no means guaranteed that new jobs will emerge. A skilled and productive workforce is still subject to the vagaries of the wider economy. Some economic sectors and types of organization are better at creating jobs than others. Indeed, jobless growth can occur, where technological advances lead to the automation of production and services. New organizational arrangements can also lead to increases in profitability of firms without necessarily creating additional employment. Technological advances may also mean a reduction in the size of a company's workforce or a change in the skills profile of its employees. TVET systems should therefore take account of their potential contribution to employment creation.

This element of the economic growth lens therefore raises questions for analysis about which parts of the economy are most likely to generate new employment, and how skills supply should react. While this differs from place

to place, in many countries small and medium-sized enterprises represent a large share of the present total employment. Furthermore most new jobs are likely to be created within small and medium-sized enterprises. This is in part due to an increase in the outsourcing of goods and services to smaller and medium-sized enterprises, by relatively large private and public sector organizations.

Looking at TVET from the point of view of employment creation we need to go beyond the supply of skills, to consider future demand for skills. This necessitates questions about the nature of the business climate and the ease of doing business in a particular country. National or international entrepreneurs also have an influence on employment creation, and depending on the characteristics of, and prospects for, the economy, some skills may have more potential for employment creation than others. Support to the development of entrepreneurial skills in the informal sector may have especially good prospects for job creation in some countries. However it is not only the numbers of jobs that should be considered, but whether the jobs are of acceptable quality.

New modes of work

Related to the quest for increased productivity, employability and employment creation are changes in the organization of work. This includes for example the shift from mass production, and mass-market services, to a more customized approach to meeting individual consumer preferences. Technological innovations have contributed to the changing character of consumer demand: for example the surge in mobile communications and online retail has created further changes in demand for skills. Technology has also facilitated changes in the workplace, and made changing modes of work possible. These new modes of work have both temporal and spatial dimensions. A key source of competitiveness is achieved by reducing the turnover time of capital, which means having fewer warehouses to hold stocks, manufacturing goods on demand and ordering 'just in time'. As outsourcing results in less job security, there is an imperative on workers to be ready to make career changes, to be able to transfer their skills, abandon obsolete skills and to learn new ones. At the individual level networking and interpersonal skills are increasingly valuable.

Technology has also enabled task teams to be established in a more flexible way, around specific time-limited projects and using the Internet to overcome the barriers previously created by distance. Now that workers no longer need to be in the same location to cooperate, and there has been a rise in

teleworking, this geographical dispersal has implications for how organizations work and the capacities required by their staff. International, multicultural project teams are increasingly common. As specialized knowledge and information has become more widely available, the skills demanded by the new modes of work increasingly go beyond what a person knows, to include their abilities to find relevant knowledge and information on a range of topics, and to be able to remain up to date. Analytical and 'soft' skills such as communication, intercultural understanding and interpersonal skills have therefore become increasingly important from an economic point of view.

Other changes in modes of work are a consequence of new organizational designs and supply chains, as we alluded to with reference to employment creation. At one level, mergers and acquisitions continue apace, and some economic sectors are dominated by relatively few multinational companies. Yet at the same time there is a trend in favour of outsourcing to smaller and medium-sized enterprises, which has in some cases reduced the core workforce in larger organizations, but created opportunities for new enterprises and subcontractors to provide goods and services on demand.

Taking these elements together, the economic growth lens analyses whether TVET systems are contributing as much as they can to the demands of the economy. While the picture varies across countries, in general TVET systems have focused on programmes in a relatively narrow range of occupational areas. This lens suggests that TVET systems should in principle widen their relevance to all occupations for which there is effective demand. This means going beyond the traditional trades and occupations found in TVET instruction to expand and diversify the skilling opportunities offered to meet present and anticipate future demands for skills. At the same time, it means in analytical terms developing the capacity to analyse changes in the world of work and anticipate their skilling implications.

Where TVET systems have fallen short of their economic potential this can partly be explained by insufficient coordination within government administrations, between the various TVET providers, and between the demand and the supply side of TVET systems. It may also reflect structural barriers to flexibility and capacity for managing change. Furthermore, students have not always been adequately consulted about their occupational aspirations, and may not have sufficient knowledge of the economic opportunities available to them when selecting between TVET learning opportunities. The economic growth lens therefore poses questions regarding the effectiveness with which TVET systems meet labour market demands for knowledge, skills, dispositions and

technological know-how, provide the skills for higher value-added productivity and provide the skills to support employability, earnings and quality of life.

Having said this, assessing the impact and/or potential of TVET systems on economic growth is a complex exercise. Even at the individual level surprisingly little is known about the labour market outcomes of graduates from formal or non-formal TVET, let alone informal TVET. The application of the economic growth lens implies increased attention to student destinations, including the labour market and workplace outcomes of TVET learning, and the effects these may have on social mobility (Akoojee, 2011). An assessment could be done on whether productivity has been increased, career progression has improved, or job security and skill enhancement has been maintained in the case of older workers already in employment. Clearly, such impacts have different values for workers, enterprises and economies. Their relative weight thus becomes a matter for social dialogue in a particular context.

Post-programme employment rates and earnings are another way to evaluate the economic contribution of formal TVET. Yet another is by assessing the contribution of formal TVET to social mobility by measuring the incremental income attributed to formal TVET in comparison with other education levels (Hakim, 2011). This method relies on the availability of earnings data across different age groups that can be readily captured in household income and expenditure surveys. While the earnings differentials over time across different levels and types of education provide an estimate of the gains due to additional education, they are associated with increased education costs in direct and indirect terms. The direct cost comes from the value of the resources engaged in delivering education, while the indirect cost comes from the opportunity cost of the time spent in acquiring additional education.

The question that emerges is whether the additional earnings justify the additional costs of education and training. Fees and tuition plus the earnings foregone during the additional years of education represent these additional education costs. Calculations of internal rates of return (IRR) based on age-earnings profiles provide a metric to assess both the contributions of different education levels to income over a lifetime, and the cost-effectiveness of the additional level of education. A comparison of the incremental income and costs associated with different education levels yields the IRR. However, this type of calculation requires detailed information on income by age and by education level, and costs associated with different levels of education, information that is not always available in many countries.

Although the intention that TVET should contribute to economic growth is often expressed in policy statements and TVET strategies, TVET has often been considered primarily in terms of the supply of programmes rather than the demand for skills. In this framework, TVET systems are under-valued for their impact on economic growth and employment outcomes. The economic growth lens can be useful for analysing TVET systems in terms of their contributions to human capital formation, private sector development and the economy as a whole. The analysis typically considers questions such as the responsiveness of the TVET system to changing economic and labour market demands, and the roles of the private sector in governance and decision-making.

While the economic growth lens is one of the three lenses considered necessary for analysing and transforming TVET systems, this section has shown that even though there is a strong economic rationale for investing in TVET, optimizing the economic contribution of TVET is more complex than it may at first seem.

The social equity lens

The social equity lens helps to focus the system on equitably increasing access to effective TVET learning opportunities, and by implication, the associated benefits for individuals and societies. This focus draws from another of UNESCO's core mandates, to ensure inclusive and equitable lifelong learning for all. The lens raises such questions as who gets access to TVET in its different forms and how equitably learners are able to use TVET to enhance their learning, and the equity of outcomes of this learning in the world of work and in society.

In essence therefore, the social equity lens can be used to examine how far TVET systems provide learning opportunities that support social equity and inclusion in development, as broadly conceptualized in this book. It highlights that over time and space, economic growth should be shared growth, and development should be inclusive. However, from the sociology of education it is known that education systems can sometimes appear meritocratic but can actually reproduce or even deepen social inequalities. By considering social equity and inclusion in development as a whole, the lens can help to examine how far TVET systems, and specific policies and policy measures, are equitable. Equitable opportunities for learning should help individuals and collectives, like families, countries and indeed the world, to improve their prospects for

material security and total well-being. The social equity lens has two major elements, redistribution and inclusion, which are described in turn.

Redistribution

In theory at least, the learning and upgrading of skills should have a powerful redistributive effect in terms of improved opportunities to enhance income, and material and social well-being. TVET learning is sometimes promoted as a way of increasing and sustaining social welfare, as people who have the skills and social capital to recover from changing fortunes are less likely to become dependent on others. This provides a strong rationale for expanding the number of quality TVET learning opportunities, especially in rural areas and across genders, and for focusing efforts on strengthening the livelihoods of vulnerable populations, to narrow the divide between rich and poor. TVET learning and qualifications can dramatically improve access to employment, self-employment and social inclusion.

Redistribution of material wealth

Knowledge and skills are forms of social and human capital that when equitably distributed can empower individuals and reduce income gaps. There are numerous, and often heroic, efforts across the world by NGOs and donors to support the training and skills development of disadvantaged groups, such as homeless people, youth at risk, and people with physical or learning disabilities. These efforts sometimes have their roots in a philanthropic tradition of TVET.

The social equity lens, however, goes beyond simply targeting poor and vulnerable populations by also focusing attention on the relationship between TVET and the justice or injustice of educational, social and development outcomes. When it comes to inequalities based on gender, social class, ethnicity or disability, the social equity lens provides a way of posing questions, and sometimes difficult questions, about whether TVET systems and specific policies are part of the problem or part of the solution. When and where TVET has been positioned as leading to occupations with relatively low status or low income, and where participation in TVET is influenced by stereotyping by gender or other socially determined attributes, it is difficult to claim that TVET is fulfilling its potential for the redistribution of material wealth. While using the social equity analytical lens reveals how many TVET systems have a long way to go in providing equitable access to effective TVET learning, the lens also

has the benefit of drawing attention to the place of TVET learning in relation to wider learning and development opportunities.

Recognizing that material inequalities partly reflect unequal opportunities for learning, and that these then often translate into inequalities in the world of work, the social equity lens takes a relational approach. This seeks to address the social relations that underpin and perpetuate inequality. It recognizes that advancing the equality of learning opportunities depends not only on empowering disadvantaged groups but also on the willingness of advantaged social groups to reduce the inequalities in society. For example, urban elites have a crucial role in addressing material and intangible disparities between rural and urban areas, and able-bodied people have a role in addressing the social inequalities between able-bodied and disabled people. Similarly, gender equality will not be achieved by targeting the most disadvantaged gender group (most often women) alone. Achieving gender equality requires attention and actions by men and women.

The social equity lens thereby considers TVET from the perspective of addressing inequalities and promoting equality of opportunities. Skills gained through relevant TVET can significantly increase the prospects for income generation, through wages or self-employment. Entrepreneurial skills, regardless of whether they are learned through formal, non-formal or informal TVET, are beneficial if learners are then able to set up their own enterprises. Where these enterprises become competitive, in whichever field of endeavour, they can employ others and benefit from a greater share of economic growth.

Redistribution of intangible wealth

TVET systems can have enormous social benefits, for example, for the health and well-being of families and communities, including enhancing the social and cultural capital needed for full participation in society. Well-designed TVET systems can therefore have a redistributive effect on intangibles including the knowledge, skills, values and attitudes needed for responsible citizenship in democratic societies. The economic value of cultural heritage is increasingly recognized, and this too has intangible value, for affirming cultural identities, local languages, knowledge and traditions. One of the most valuable aspects of intangible wealth to be shared is learning to learn, as this above other capacities can equip a learner for life.

Intangible and material wealth are of course related; indeed intangible wealth can reinforce material wealth, as occurs when TVET builds social esteem, confidence and the ability to recognize and use talents in ways which are recognized and valued by wider society. Participation in TVET can improve the prospects for individuals to develop their social and professional networks, to obtain employment and to succeed in the world of work, communities and the wider society. Learners can increase their social status and have improved influence on the decision-making processes which affect their lives.

However, experience from many countries shows that whereas skills can help strengthen individual incomes and livelihoods, pathways do not necessarily exist between TVET learning, further learning, and career and social mobility. Furthermore, partly a result of this priority focus on the most disadvantaged and vulnerable groups, in some places TVET has become associated with low-level skills and in some cases is seen as a compensatory provision for learners who have been underserved by formal education. The social equity imperative would therefore imply transforming TVET so as to improve opportunities, first for people with low-level skills to access the learning of middle-level and high-level skills, and second for those already with high-level skills to sustain and keep them current.

Regrettably the potential redistributive effects of TVET remain underexploited. Formal TVET institutions often cater for a small, rather privileged, minority in urban centres of developing countries, and even this provision is not necessarily of good quality. A much broader base of participation in quality and relevant formal and non-formal TVET programmes, and informal TVET, is needed to enable better wealth distribution effects.

Inclusion

The inclusion element in the social equity lens addresses inclusion within opportunities for TVET learning (formal, non-formal and informal) as well as the overall inclusive effects of TVET in the world of work, for 'decent work', and on holistic and humanistic development. The idea of inclusion addressed by this lens goes beyond the social outcomes of TVET. It regards TVET as a right whether or not learners choose to use the skills they have learned for economic activities. As for other forms of education and training, learning in TVET has intrinsic value beyond its utilitarian value.

The concept of TVET as a right is articulated in UNESCO's relevant normative instruments. The 2001 Revised Recommendation concerning Technical and Vocational Education states that:

> *Technical and vocational education, being part of the total educational process and being a right as described in Article 26 of the Universal Declaration of Human Rights, is included in the term 'education' as defined in the Convention and the Recommendation against Discrimination in Education adopted by the General Conference of the United Nations Educational, Scientific and Cultural Organization at its 11th session (1960) and the Convention on Technical and Vocational Education adopted by the General Conference at its 25th session (1989).* (UNESCO, 2001, p. 7)

The States Parties to the 1989 Convention on Technical and Vocational Education have agreed to 'work towards the right to equal access to technical and vocational education and towards equality of opportunity to study throughout the educational process' (UNESCO, 1989). Furthermore for the 2001 Revised Recommendation, technical and vocational education should:

> *contribute to the achievement of the societal goals of greater democratization and social, cultural and economic development, while at the same time developing the potential of all individuals, both men and women, for active participation in the establishment and implementation of these goals, regardless of religion, race and age.* (UNESCO, 2001, p. 9)

In 2012, TVET featured prominently in the *Report* of the UN Special Rapporteur on the Right to Education, who noted that:

> *International human rights instruments clearly establish technical and vocational education and training as part of both the right to education and the right to work. Transmission of knowledge, skills and competencies through technical and vocational education and training, empowering its beneficiaries to play their roles in social development as active citizens, is a collective responsibility, falling primarily to States.* (Singh, 2012)

This *Report* identified principles to guide action by States in the establishment, expansion and consolidation of TVET, including the principle of social justice and equity. It calls for particular attention to the skills development of disadvantaged groups, youth and women (ibid.).

Assuming that access to quality and relevant TVET learning will improve the development outcomes for all individuals and their societies, the lens draws attention to the need for equal access to quality TVET and equal opportunity for diverse learners, while recognizing that TVET learning takes place in many different settings and at various moments during people's lifespan. Progress towards the right to TVET appears more complex to assess than progress towards general education. However this lens suggests some possibilities. First, it is possible to examine whether there are policy frameworks in place that guarantee TVET access for all or for more people. This element of the social equity lens explores the extent to which policy commitments specify particular groups, such as young people, women or people living with disabilities. These perspectives may include training functions of other ministries, non-formal and private provision, as well as learning that takes place in formal and informal workplaces. TVET opportunities should be affordable and accessible.

As McGrath (2012, p. 626) observes, 'New learning technologies may offer benefits in increasing access for the previously marginalized *[...]* However, it is important to note that such technological solutions do not necessarily guarantee improved accessibility. A digital divide exists in all countries and the poorest learners are often also least able to access certain technologies'. A very important part of improving the quantity of TVET lies in considering the possibilities, but also limitations, of intervening in less formal modes of TVET learning. The recognition of prior learning is a potential avenue to valorizing the learning and skills that have been acquired informally, and thus empowering learners to further their learning and career progression.

Addressing discrimination in TVET systems is essential for advancing the right to TVET for all, as well as advancing the utilitarian value of TVET for all. Regrettably, gender, ethnicity, religion, caste, class, disability, location, HIV status and many more factors of exclusion are used on a daily basis to discriminate against some learners. Such discrimination may be by individuals through words and actions, but it can also be deeply institutionalized in curricula, timetables or facilities provided. It may also occur in workplaces. Access to traditional apprenticeships, for instance, is often influenced by matters of ethnicity, gender and caste (McGrath, 2011).

It flows from this discussion of accessibility that TVET should promote effective opportunities to acquire skills by all learners, male and female, regardless of class, ethnicity, age, disability, location or other socially ascribed traits.

At present, access to TVET often depends on educational attainment level and socio-economic characteristics. In some countries, participation in TVET is related to being denied or otherwise excluded from other learning opportunities, and it is not necessarily the most advantaged people who are enrolled in TVET programmes. From the perspective of the social equity lens, TVET should cater for the present and future needs of all learners.

There are, however, limits to the extent to which ideas about 'access' and 'inclusion' that have developed in relation to basic education can be applied meaningfully to TVET systems. In this sense, working towards the right to equal access to TVET, while important, is not sufficiently ambitious. However, at the same time the practical challenge is enormous, not least because of the historical divide between academic and vocational education which is evident in many countries. The assumption that TVET qualifications can improve the equality of opportunity to benefit from decent work does not hold where employers, for historical reasons, are discriminating against people with 'vocational' qualifications in favour of those with 'academic' qualifications.

Moreover, the way in which TVET faces the labour market, indeed is typically delivered in workplaces, requires that equity be thought of in terms of outcomes as well as access. There is a risk that TVET access may be to programmes that do not generate real improvements in labour market opportunities and status, an issue that is not confined to public providers. Or it may be that access to good quality pre-employment TVET becomes more equitable but that discrimination in the labour market prevents graduates from realizing the full benefits of their learning.

Gender equality has received significant international attention in recent years, and this has been reflected in a reduction in gender participation gaps in both primary and secondary schooling. Efforts to analyse and address gender equality in TVET are relevant to other aspects of equity and dimensions of inclusion/exclusion. In almost all parts of the world, the proportion of girls to total enrolment in secondary education defined as TVET is less than for 'general' secondary education (UIS, 2012). Beyond formal TVET, it is important that equity is understood as applying to the full range of occupations and livelihoods, including those that are pursued in rural subsistence and non-farm activities. Knowledge and skills for agriculture and rural livelihoods enhance not only incomes, but also the health and nutrition of individuals and their families. How households' livelihood strategies are made possible by activities that are not necessarily considered as part of economic activity should be considered. The example of how women textile weavers in Lao

People's Democratic Republic acquire their skills from their mothers and other female family members is a case in point. For many weavers, weaving offers both a livelihood and a way to sustain their cultural identities (Shiohata, 2011).

The social equity lens focuses attention on the fact that expanding access to TVET learning cannot be limited to a view of how to expand provision that is public, formal and initial. Rather, it is important to realize that TVET learning is integral to being fully human and to living in society. When TVET systems are analysed using the equity lens, a key question is whether the forms of TVET that people are accessing are improved, and how learners can be assisted to have better and more equitable access to expanded TVET opportunities that take account of their broader learning throughout life and work needs, the priorities of enterprises and communities, and the possibilities of new developments in accessing high quality learning opportunities.

The *Shanghai Consensus* of the Third International Congress on TVET made the following recommendations on expanding access and improving quality and equity, including to:

> *Take innovative measures to provide quality and inclusive TVET, especially to disadvantaged groups including learners with disabilities, marginalized and rural populations, migrants and those in situations affected by conflict and disaster.*
>
> *Improve gender equality by promoting equal access of females and males to TVET programmes, particularly in fields where there is strong labour market demand, and by ensuring that TVET curricula and materials avoid stereotyping by gender.* (UNESCO, 2012*a*)

A broad perspective on social inclusion, which is offered by this analytical lens, includes but goes beyond assessing inclusion in TVET programmes, the TVET system, or even inclusion in the labour market, and considers the relation between TVET and society as a whole. This analytical lens can therefore help to assess whether innovations in TVET systems are likely to contribute towards decent work for all and the broad objectives of lasting peace and social cohesion, or may actually perpetuate historical segregation, for example by gender, ethnicity or social class, perpetuate social injustice and add to the fragility of world peace. The social equity lens permits an analysis of TVET's contribution to social equity both from within the TVET system and from broader societal perspectives. In both cases, most if not all TVET systems are in a state of unmet potential with regards to social equity and the right to TVET.

The sustainability lens

The sustainability lens adds an indispensable dimension to this analytical approach, without which any assessment of TVET systems in the twenty-first century is incomplete. The concept of 'sustainable development' was elaborated in the Introduction to this book, with reference to the definition used by the World Commission on Environment and Development in 1987. More recently, the Rio+20 United Nations Conference on Sustainable Development in June 2012 reinforced the view that sustainable development goes beyond environmental issues. Sustainable development 'rests on integration and balanced consideration of social, economic and environmental goals and objectives in both private and public decision making' (United Nations, 2012).

Key elements of the sustainability challenge identified at Rio+20 include creating clean and decent work; producing clean and sustainable energy and delivering it to all; ensuring that all have access to the food, water and nutrition necessary for their health and well-being; managing sustainable cities; building clean and facilitative transport; protecting the oceans; and building resilience in the face of natural disasters. Well-functioning TVET systems can potentially play a crucial role in addressing each of these challenges. The Rio+20 outcome document, *The Future We Want,* stated that:

> *We recognize that people are at the centre of sustainable development and, in this regard, we strive for a world that is just, equitable and inclusive, and we commit to work together to promote sustained and inclusive economic growth, social development and environmental protection and thereby to benefit all.* (United Nations, 2012, p. 2)

This analytical approach focuses attention on the sustainability of societies, and is in itself an integrated perspective with social, economic and environmental considerations. The sustainability lens links to wider issues of human-centred development in which the development of individuals and societies is given centre stage in thinking about development, and this is understood as a long-term and intergenerational challenge. Most importantly for this framework it focuses on the rights of future generations, an aspect which could otherwise be overlooked.

The fact that sustainability is an integral part of any meaningful notion of development is now generally accepted; however, in most cases the demand on TVET systems to contribute to sustainability has not been met. Indeed, this demand represents an enormous transformational challenge in view of the fact that the evolution of modern formal TVET systems developed in

conjunction with the industrial patterns of production and consumption, some of which are now regarded as unsustainable. The sustainability lens has three elements: greening economies, intergenerational rights and global citizenship. This lens is necessary to optimize the contribution that TVET systems make to the sustainability of development.

Greening economies

As collective understanding of the impact of climate change deepens, it is not just skills, but green skills, that nations seek. Clean sustainable jobs that contribute to decrease energy and resources consumption, reduce carbon dioxide emissions, protect land and marine ecosystems, sustain biodiversity, and minimize pollution are gradually emerging as preferable to the 'business as usual' approaches, as countries and organizations seek to demonstrate their green credentials. The need to transition towards a more sustainable model of development is creating opportunities for new technologies, investments and jobs in green sectors such as renewable energy, energy-efficient construction, sustainable transport and organic farming (ILO, 2012*c*). Education and training is not only an imperative but also an untapped opportunity in transitioning to green economies and societies. Progress towards sustainability implies the creation of new and additional jobs, skills being substituted, certain jobs being eliminated without replacement and some existing jobs being transformed (UNEP, 2008; Strietska-Ilina et al., 2011).

TVET systems can anticipate the need to respond to the rise of new environmental products and services, including renewable energy and green technologies, and also to innovations in production processes that reduce resource use and waste generation. From this perspective, TVET systems will need to train people for new green jobs and for the greening of many existing jobs. Some of this will be through new pre-employment programmes. However, much of the response will come from additional TVET for those who are already working in sectors such as engineering and construction.

As with sustainable consumption, there is also a powerful argument that TVET should be a site of learning about environmental sustainability, both with respect to its importance for the workplace and as a citizenship and values education issue. Such debates are in their infancy, and have tended to begin with a focus on public TVET providers. However, it is important also to consider how such arguments could be taken forward in other TVET settings. There are internal incentives in some firms that encourage them to educate their workers about sustainability issues in a way similar to addressing health and

safety agendas, but there may also be a role for sectoral bodies and national agencies to provide incentives and disseminate best practices in this regard. Much is at stake, as shortages in skills that match the shifting labour market demands in the energy sector, building and construction, transportation and farming, for example, could seriously hinder progress towards sustainable development objectives.

'Greening TVET' is an attempt to use TVET to help reconcile what UNEP (2011, p. 16) calls the 'competing economic development aspirations of rich and poor countries in a world that is facing increasing climate change, energy insecurity and ecological scarcity'. It also draws attention to the need for TVET providers themselves to operate in an environmentally and socially sustainable way, for example by reducing waste, promoting recycling and saving energy, and acting consistently with the green skills that formal and non-formal TVET programmes are trying to impart.

Intergenerational rights

In a study conducted by the UNESCO-UNEVOC International Centre, Fien and Maclean (2009) stressed that economic sustainability requires greater attention to modes of production and consumption that are sensitive to the needs of current and future generations. Indeed, intergenerational concerns are integral to the very concept of 'sustainability', as identified in the Rio Declaration on Environment and Development, 'The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations' (United Nations, 1992). This long-term perspective which seeks to anticipate the future in order to defend the interests of future generations is integral to the sustainability lens.

The lens draws attention to the need for TVET systems to better respond to changing demands for skills for sustainable economic activities and to foster social behaviours and values which do not compromise the ability of future generations to use the environment sustainably to meet their own needs. The sustainability lens necessarily extends the role of TVET systems beyond the conventional scope of learning for work, to encompass considerations of their internal sustainability and the long-term sustainability of societies. As the *Bonn Declaration on Learning, Citizenship and Sustainability* (UNESCO-UNEVOC, 2004) anticipated, it is increasingly important to see the sustainability of TVET as a major policy goal. For this purpose, a stronger focus by TVET on the ethical and moral dimensions of development becomes necessary.

Global citizenship

The sustainability lens takes into consideration the relationship between people and the planet, including both the local and global environment. It includes a heightened awareness that the current generation has a duty not to exhaust natural resources and a duty to minimize the harmful environmental impacts of resource use, so as to safeguard the functioning of environmental systems for future generations. Since the Earth's resources often transcend nation states, and the environmental impacts of development often extend beyond political territories, there is a significant supranational, indeed global, dimension to environmental responsibility. Recognizing which patterns of human behaviour, and forms of social and economic organization, are unsustainable is an essential starting point for envisaging a sustainable future, and anticipating the knowledge, skills and values which TVET is required to develop. The global citizenship aspect of the sustainability lens thus includes the idea that individuals must be accountable, to some extent, for the collective good at the global level. In the contexts of social, economic and environmental problems that extend across nation states and continents, national level 'citizenship' alone is insufficient for safeguard the wider public interest for present and future generations.

At present TVET systems often seem to have difficulty remaining current and relevant to changes in the workplace, including the introduction of green technologies, environmentally sensitive production processes and services. The added value of the sustainability lens is also evident through the attention it draws to human and ecological interconnectedness. Indeed, the idea of sustainable development conceptualizes the world as an interconnected system, across both space and time.

Conclusion

The analytical approach outlined here advocates a holistic and integrated analysis of TVET policies and systems, with a view to optimizing their contributions to holistic and sustainable development. The approach acknowledges that the weighting to be given to economic growth, social equity or sustainability aspects of development varies across geographical and temporal contexts. These three integrated dimensions of holistic and sustainable development are visually represented through intersecting

and inseparable lenses which are proposed to strengthen the analytical underpinning of TVET transformation. While at times tensions will occur, for example in the balance between economic growth and sustainability, there are also clear complementarities between the lenses. For example increasing participation in quality and relevant TVET learning may be beneficial for meeting all three demands: economic growth, social equity and the sustainability of development over time. The social equity lens focuses attention on redistribution, inclusion and the right to TVET. At the same time, it simultaneously has potential for facilitating shared economic growth by broadening the base of people with good quality and relevant skills. This marrying of social equity and economic growth concerns in turn adds to the transformative possibilities of TVET, thus demonstrating how TVET can actively shape, as well as respond to, its contexts.

Collectively the three analytical lenses equip policy-makers and other stakeholders with a powerful and yet flexible tool for assessing current TVET systems relative to development outcomes in an integrated way. Using these lenses, the question is asked, to what extent does TVET in its many forms and settings contribute to economic growth, social equity and the sustainability of development in national and regional contexts? Answering the question is a first step towards the transformation of TVET. The lenses also can enhance the assessment of the value of recent policies and measures in the light of rapidly changing contextual demands. For example, policy-makers will be able to assess whether certain policies respond to one or more of the contextual demands. They will also be able to determine whether policy responses are aligned with their contextual strategic priorities. The analytical approach can also facilitate consideration of the intended relationship between changes to the internal working of the TVET system, for example the modernization of TVET provision, and the hoped-for outcomes for development as a whole.

The added value of the analytical approach is that it provides a holistic way of assessing how a particular policy or measure is related to wider external demands. Experience over the review period shows that more often than not, TVET policies and the associated measures attempted to respond primarily to one category of demands, often economic demands. This is not only at the expense of the other categories of demands, it can unbalance and distort the TVET system. It is therefore necessary to ensure that the analytical approach is itself sufficiently integrated and balanced to ensure that the analysis is not

overly dominated by one demand or another, or that if it is so dominated, this is a strategic choice rather than an omission. The ideal application of the analytical approach would ensure attention to economic growth, social equity and the sustainability of development in an inter-sectoral, balanced and holistic way.

Wherever the balance of priorities lies, geographically or temporally, the discussion above and the experiences presented in Chapters 2 and 3 suggest that TVET can do much more to meet these demands. This reinforces the view that the transformation of TVET systems is urgently needed, and that TVET should not simply be scaled up in its current form of unmet potential. Until now it has proved difficult for TVET systems to look critically at themselves. The analytical approach proposed here is a modest contribution to providing a new, more integrated and iterative way of thinking about, studying, analysing and evaluating TVET systems, which will itself evolve over time. What is clear is that the further development and eventual optimization of TVET systems requires an integrated and interdisciplinary approach. This needs to be both universal enough to support global dialogue on transforming TVET, and flexible and adaptable enough to meet the needs of particular geographic or temporal circumstances. It has to be theoretically informed while also having value for the policy-makers and practitioners in the TVET community.

The analytical approach suggests that TVET should increasingly be seen in a systemic perspective while connecting to contextual demands and linking to broad long-term development objectives. The approach can also help to reorient the processes through which TVET systems are developed away from a reactive mode and immediate timeframe, with its sometimes haphazard stops and starts and tactical moves, towards a more rational, resilient, purposeful and long-term sustainable trajectory. In this view, in addition to its traditional economic and social functions, a transformed TVET should play a greater role in developing global citizens with the humanistic skills, values and attitudes who promote intercultural, intergenerational and other forms of dialogue, and sustain cooperation within and between countries for the long term. It is to be hoped that the transformed TVET systems of the future will be more coordinated in relation to changing contextual demands and well integrated within lifelong learning systems, so as to optimize their contributions to lasting peace and sustainable development.

Chapter 5

Enablers of TVET Transformation

The proposed analytical approach for transforming TVET presented in Chapter 4 underscores the multisectoral character of TVET by recognizing its historical fragmentation and the need for TVET systems to respond simultaneously to the demands of economic growth, social equity and the sustainability of development. This chapter considers key enablers of the transformation of TVET systems. This transformation is inherently multisectoral. The chapter highlights the reality that the success of any multisectoral endeavour requires strong enablers, not the least of which is multi-stakeholder partnerships where each partner brings to bear their comparative advantage. What each enabler has in common is therefore an assumption that TVET transformation will have to be a collaborative and collective process.

Each of the three areas of demand, representing economic growth, social equity and the sustainability of development, has its own group of stakeholders. These groups have developed their own outlooks, theories, methodologies and specialized languages. They also have distinctive priorities, needs, interests and positions, which may or may not coincide, and which can bring politics and power games into TVET policy processes. The integrated analytical approach can help provide an intellectual and policy space in which the three groups can interact, sharing their outlooks, learning from each other, contesting and negotiating their interests, recognizing and overcoming differences in order to generate new interdisciplinary knowledge and understanding, integrated policies, policy measures and programmes. Success will depend on the ability to identify and utilize the comparative advantage of each group of stakeholders, to find solutions, and to enable optimally coordinated interactions.

The four interrelated enablers of TVET transformation elaborated here are i) partnerships and networks, ii) knowledge and the information base, iii) a culture of learning, and iv) incentives and accountability. As the analysis in Chapter 2 showed, many of the recent policies and policy measures proceeded separately, and sometimes without sufficient attention to the combination of demands, or coordination. An over-reliance on any one of the specialized groups of stakeholders may inadvertently act as a significant constraint on TVET development. This chapter asserts that attention to the governance, and in particular the processes of TVET transformation and related capacities, becomes critically important if the mutual interests of TVET stakeholders are to be better satisfied and if TVET systems are going to be better placed to rise to the challenges of the combined economic growth, social equity and sustainability demands.

Partnerships and networks

The book asserts that strengthened partnerships and networks are needed to develop TVET policies upon which there is consensus and that have stakeholder ownership and commitment for implementation. Involving stakeholders from each of the three specialized areas is crucial, but by no means sufficient to secure successful TVET transformation. Indeed, although efforts to improve coordination and governance since 1999 have largely been constructive, from experience it is evident that these have often fallen short in two ways: in their representativeness and their capacities.

The most relevant and important partnerships will also need to vary from country to country, depending on, for example, the priority economic sectors for development and the priority social or sustainability policy concerns. However, it is clear that integrated and holistic approaches to TVET policy formulation will require partnerships with diverse stakeholders who can bring relevant knowledge and experience to the debate at all levels. Table 3 provides an indicative list of stakeholders who might contribute to each specialist group. Public and private TVET providers, including non-governmental and faith-based organizations, appear in each of the groups, as do education specialists.

Table 3. Indicative list of stakeholders by specialist group

Economic growth specialists	Social equity specialists	Sustainability specialists
Officials from ministries of labour, economy, planning, trade, industry and others	Officials from ministries of labour, social policy, education, health, gender affairs and others	Officials from ministries for sustainable development, the environment, natural resources, energy, planning and others
Economists Labour market specialists Industrial sociologists Education specialists Others…	Sociologists Human rights lawyers Gender specialists Health specialists Education specialists Others…	Development experts Geographers Environmental scientists Education specialists International relations / law Others…
Employers associations Professional associations Trade unions Consumer associations Entrepreneurs Others…	Representatives of marginalized and disadvantaged groups Informal sector associations Advocacy NGOs Others…	Environmental agencies and Conservation NGOs Youth organizations Community organizations Private sector representatives from 'green' businesses Others…
Public and private TVET providers, including non-governmental and faith-based organizations	Public and private TVET providers, including non-governmental and faith-based organizations	Public and private TVET providers, including non-governmental and faith-based organizations

Source: Authors.

Partnerships for economic growth

Countries that have adopted an HRD approach have often been the most successful in delivering on their economic development goals over the past fifty years. They have sought to build interministerial and intersectoral cooperation towards 'joined-up' HRD policies aimed at contributing to national development and to which TVET systems contribute. According to Kraak (2011), HRD approaches involve a supply-side role, a demand-side role and a relational role. The supply-side role involves the effective development of human capability in all its forms, including formal education and training, and the acquisition of skills and qualifications. The demand-side role involves the effective deployment and utilization of developed human capability in a variety of contexts – including employment in organizations in the private sector, the informal sector, the public sector and civil society. The relational role involves the exchange of strategic intelligence between institutions on the demand and supply sides of HRD, enabling optimal HRD decisions to be made. Information exchange is maximized in cooperative interactions between industry and education officials who have 'situated knowledge' and expertise of the exact conditions in their educational institutions or industry (Kraak, 2011).

Two case studies of HRD strategies for national development are presented in Box 17.

Box 17. Country Focus: HRD strategies for national development in Malaysia and South Africa

Malaysia

Malaysia has a history of medium- and long-term development planning that dates back to independence in 1957. The country has made a conscious effort to industrialize and to reorder socio-economic power within its borders in favour of indigenous Malays. Since the mid-1980s, the classical industrial policy based on import substitution and the creation of heavy industries and export of raw materials has given way to a deliberate strategy of promoting a knowledge economy. There has been massive investment in ICT infrastructure and the development of sectoral clusters in priority industries, designed to bring together foreign and domestic firms. This has been accompanied by educational expansion, including a number of international partnerships in higher education. Although Malaysia has one of the world's highest average GDP growth rates of the past fifth years, there are some concerns that the level of human capital and research and development may still be constraining factors for future growth.

South Africa

The newly democratic South Africa faced major challenges, including the legacy of an apartheid past, resulting in massively unequal access to education and skills, and an unbalanced economy. South Africa had elements of world-class potential combined with over-protection elsewhere in its industrial sectors, and a large proportion of the population working in the urban informal and rural subsistence sectors. The new government responded through partnerships with industry and trade unions, and sought to transform its HRD system in order to improve on equity and competitiveness. This was linked to macro-economic reforms in the late 1990s and a commitment to supporting certain industrial sectors, such as motor vehicles. For more than a decade there has also been a commitment to better intra-governmental coordination. While there has been improvement on a number of key indicators, it is clear that the government and analysts remain concerned about the limits to progress and the size of the challenges that remain.

Source: Adapted from Kraak (2011).

In these cases it is the partnership between industry representatives and education officials that helps to generate the knowledge needed for optimal policies and measures, and which contributes primarily to economic demand, but also to the improvement of social equity and its elements of redistribution and inclusion. These countries attribute their recent success partly to their HRD strategies. However, it is also apparent that such progress is often fragile and that there are still real challenges in implementing HRD-based TVET reforms.

Regarding public provision of initial TVET, there has been a clear policy drive towards increasing responsiveness through stronger industry involvement in both the decision-making processes of provider institutions and the national HRD strategies intended to improve the linkage between skills demands and skills supply. A variety of approaches have been used here, including greater industry participation in curriculum and qualification development; establishing competency standards with the participation of industry representatives; more employer representation in local and national governance structures; and the encouragement of public-private partnerships.

The extent to which industry can be involved in curriculum development and standard-setting may vary according to the extent to which the programme is intended to have immediate labour market relevance as opposed to being preparatory for further study. The availability and willingness of suitably qualified industry representatives to work in such areas cannot simply be assumed. Equally, getting the right quality of employer representatives appointed to governance structures, and getting them to work well in concert with educational professionals and other stakeholders, is a complex challenge. Building governance capacity appears to be a long-term process. Moreover, it is important to consider why PPPs might be attractive, to whom, and at what costs as well as benefits to the institution and, most crucially, to TVET learners. Furthermore, even if it is accepted that employer voices are paramount, there is a danger that the collective voice of employers is often that of larger enterprises and better organized sectors, with the voices of small, micro and informal enterprises too often neglected.

Whether public or private, institutional providers face the further challenge that the voices of employers are not the only ones to which they must listen. All providers operate in a policy, legislative and funding environment in which the state may incentivize, exhort or prohibit certain behaviours, and expect providers to respond to national needs. In such circumstances as the transition to democracy or the end of conflict, such national needs necessarily will be far more complex than simple economic competitiveness, and may include reconciliation, redress and transformation.

Providers, both public and private, must also be responsive to learners, their parents and communities. Yet here too, voices will be multiple and the combination of these and other voices, notably the voice of teaching staff, requires providers to regularly weigh how they balance conflicting responsiveness imperatives.

Such considerations can take the discussion on to questions of what mechanisms exist within the TVET system, across all levels, to ensure that multiple voices are heard. They also encourage questions of the roles that governance systems play in generating and managing multiple calls on institutions, and how these interact with a series of incentives for delivery of particular forms of TVET. This is further complicated by other complex considerations: for example, how far initial vocational learning can be directed towards both immediate insertion into the labour market and progression into higher forms of vocational (and academic) learning.

In workplaces, too, responsiveness to multiple stakeholder networks is not simple. Managers making training decisions are often not owners, and may have their own vested interests. Individual firms' rationality regarding investment in skills may not aggregate to national needs. Indeed, research suggests that complex factors may lead to national skills regimes that depress the demand for skills and limit the scope for workplaces to act as sites of learning and personal fulfilment, as well as those that promote these goals (Brown et al., 2001). This may relate in many cases to a tendency for decisions about TVET in firms to be driven by short-term concerns that are not sufficient for the firm or the nation to achieve and sustain international competitiveness in the longer term.

The thrust of the argument here is that while such expert policy capacity is important, transforming TVET is also likely to require the broader social distribution of ownership of policies and policy measures. In some cases there has been a shift in thinking away from seeing government as the owner of development processes. Indeed, there is a growing awareness that a new social contract on TVET is vital.

The focus of much of the discussion about HRD strategy has been on the development of partnerships between government and the private sector, and in particular businesses. This is clearly important, but the private sector is very diverse, consisting of numerous profit and non-profit organizations

which differ greatly in size, location, economic and social interests. Taking this into account, this book emphasizes throughout that TVET systems are a complex area in which a very wide range of stakeholders, with many different legitimate interests, need to be part of the TVET debate and to be represented on relevant bodies and authorities.

Partnerships for social equity

Inputs from partners outside the relatively confined circles of education policy are essential for the analysis of the current and potential contributions TVET can make. In other words, it will take people from beyond TVET to help TVET systems to transform. In their current state of unmet potential, TVET systems usually do not have the capacities or the political influence needed to transform themselves. This is partly because TVET's state of potential is often determined by factors beyond the TVET system, including for example the architecture of the formal education system in a country (which affects the proportion of students in TVET programmes), the historical relationship between 'vocational' and 'academic' education, which varies from place to place, and the functioning of the labour market.

In some countries the unmet potential of TVET is perpetuated if the students entering TVET programmes are mainly those who have been prevented by examination scores or other factors from furthering their academic studies. Another example is the perspective of the expansion of basic education, and what this means for the social demand by secondary school leavers for TVET, often with elevated occupational and education aspirations. Beyond the education system, TVET has become a priority in social and economic policies including labour market policies. Consequently policy-makers and other actors in such areas, including for example health or agriculture, are needed as partners for transforming TVET systems, since they can assess what needs to be done from their perspective, and also how such transformations might be best achieved.

An integrated, intersectoral and multi-stakeholder approach to TVET, as illustrated with reference to Malaysia and South Africa, has helped to make visible conceptual, administrative and political hurdles which may act as barriers to the transformation of TVET systems. Sometimes horizontal communication across historical institutional divides, whether in the public

or private sector, is almost absent. One of the prominent features that can be observed is the persistence of unhelpful dichotomies such as 'vocational' and 'academic'; 'rural' and 'urban', 'disabled' and 'abled', 'low-skills' and 'high-skills', and entrenched gender stereotyping. Such binaries often reflect rigid ways of thinking about education and society, and these have a material impact on the organization and administration of TVET systems and the politics of education and development policies more broadly.

Overcoming such entrenched binaries will require new and extensive partnerships and networks, including multidirectional communication channels based on trust, mutual respect and collaboration at all levels. Such partnerships require political will and, in many cases, a cultural shift on the behalf of various potential stakeholders. This will involve the questioning of existing policies and practices, and concerted and sustained efforts for transformation. All of this can be assisted where there is a strong vision of holistic and lifelong learning, in which TVET is seen as an integral part for the development of the low, middle and high-level skills required for sustainable human development.

Learner demand can therefore also be expected to propel qualifications developers and curriculum planners towards new solutions, particularly around closer integration and hybridization of qualifications, programmes and education streams. Of course, the viability of these choices on the part of young people hinges on the successful generation of opportunities in the labour markets for jobs, and for self-employment. Increased hybridization means that the institutional borderlines between different types of TVET providers and qualifications, as well as some of the boundaries between 'academic', TVET and higher education, are likely to become much less pronounced, with more overlaps and interconnections. For example, some of the distinguishing features of TVET and general qualifications will become weaker as both contain increasingly mixed elements, perhaps in the form of modules and units.

Thus it is more likely that the traditional boundaries between academic and vocational education will become 'fuzzy', with even elite schools and universities increasingly introducing a partial focus on employability skills, while TVET providers increase the knowledge and attitudes content of their provision. The need to achieve and deliver diversity will be reflected in a greater emphasis on transparency, communication and realistic

opportunities of movement, entry and progression for different learners into different pathways. This suggests a repositioning of TVET in relation to education as a whole, as is evident in Finland and the Netherlands, for example.

Higher-level TVET programmes are also facing rapid change and intensifying challenges, including relevance to labour market, linkages to academic and university programmes, quality assurance and funding (OECD, 2013). It can be anticipated that the trends for an increasing proportion of formal TVET to be at the post-secondary level, and for more para-professional and technologist occupations to be created, will help to reinforce the point that formal TVET is about good-quality preparation for modern jobs as well as for other forms of work, including self-employment. However, policy options will need to balance economic and equity concerns in order to be appropriate for a larger student body with varying social and educational backgrounds, needs, aptitudes and motivations.

While the policy attention has been largely associated with developing initial TVET, a concern that this book shares with the 2012 EFA Global Monitoring Report on *Youth and Skills* (UNESCO, 2012*b*), this book is equally conscious of the importance of continuing TVET and the vocational aspects of adult and lifelong learning. There is a growing awareness that TVET needs to be thought of in terms of the ongoing needs and aspirations of adults for good-quality TVET that can enhance their working lives and their lives in general. Such learning and working should occur in both the formal and informal sectors. Securing the recognition of learning outcomes is decisive because it allows learning happening in non-formal and informal contexts to be blended into lifelong learning.

In sum, although there is currently a growing awareness of the importance of lifelong learning, more concrete efforts are necessary to develop a range of appropriate policy options and to address the lack of adult education and training opportunities. It is likely that much of individuals' lifelong TVET learning will take place while in work. A key part of this challenge will be RPL, particularly where this learning is achieved in informal and unorganized parts of the economy, as well as more recognition by enterprises of the value of the in-service learning taking place within the world of work.

Partnerships for sustainability

Given that TVET systems are only beginning to engage with the imperatives of sustainability, there is an urgent need to mobilize new partners from the specialized group of experts with knowledge in this field to support TVET transformation. Unlike the more established economic growth and the social equity groups, the probable composition of sustainability specialists is still being defined (see Table 3). It is likely to involve officials from ministries associated with the environment and natural resources, as well as officials from planning ministries among others. Experts with knowledge most relevant to the sustainability demand are likely to be from interdisciplinary or synthetic fields of study, including development experts, environmental scientists, geographers and international relations experts. Such specialists are able to bridge the natural and social sciences, and they bring a global view of human and environmental systems. Partnerships with enterprises demanding skills for renewable energy production (e.g. solar, tidal and geothermal) are especially promising for helping TVET systems to design and deliver programmes for the development of green skills. Social enterprises and the enterprises in the cultural industries are also potential private sector partners for sustainability.

Intergenerational rights and global citizenship are relatively new areas of specialist expertise; however capacities exist within the fields of international relations, international law, and also international organizations. Environmental and poverty-related international NGOs that are strong advocates for sustainability are also potential partners, as are educators and curriculum development specialists who are familiar with education for sustainable development in school systems.

The production of South Africa's National Skills Development Strategy (2011 to 2016) is a good example of wide stakeholder involvement in HRD processes, even though the sustainability group of stakeholders was under-represented. The strategy is revised periodically through large scale policy fora, convened by the country's National Skills Authority (NSA). Both the NSA and its policy consultations are widely inclusive of HRD and TVET stakeholders.

Even those most familiar with the best examples of multi-stakeholder partnerships can find it difficult to identify suitable representatives to participate in consultations. Considering for example the diversity of the private sector, it is difficult to ensure that large, medium and small-sized enterprises are represented in proportion to their importance to a particular economy. Informal sector entrepreneurs, young women, people with disabilities and other disadvantaged groups are typically underrepresented regardless of the

importance and relevance of their knowledge and expertise. Bringing the right representatives to the group is only the first step, as it has to be asked not only whether there is a representative of a certain sub-group, but also whether that subgroup is really being represented, which is to say that they are being consulted before a meeting and kept informed of the deliberations and other activities which the representative may be doing on their behalf. Unless there are well-organized representative structures, such as a chamber of commerce, professional associations, trade unions or a national youth council, for example, people are inclined to participate on an individual basis.

Whereas some TVET authorities have succeeded in mobilizing multi-stakeholder partnerships with wide representation, in many countries there are stakeholder groups and subgroups that for various reasons make little or no meaningful contribution to TVET governance. This may indicate a lack of personnel to participate, because of low levels of staffing in government ministries, or that employers, for example, are too busy with their own affairs, or it may indicate logistical obstacles and the cost of travel to meetings. Another explanation can be that the TVET system has not yet managed to mobilize enough of its stakeholders to devote time and energy to transforming TVET. While there are many examples of high calibre and professionally minded representatives on TVET authorities, there are also examples where levels of expertise are simply not commensurate with the tasks entrusted to such authorities. The lack of technical capacity, whether in the economic growth, social equity or sustainability groups of active stakeholders, is often a constraint to TVET transformation.

While partnerships at the national level are considered to have a central role in future TVET development, there are also increased efforts to strengthen partnerships and networks between governments and other stakeholders at regional and international levels. These partnerships are intended to complement work at the country level and mobilize stakeholders to share knowledge and experience between countries, as well as to build support for institutional strengthening and capacity development in the field of TVET. Probably the best known example of regional cooperation in TVET is between member countries of the European Union. European cooperation in TVET, through the voluntary 'Open Method of Coordination', is seen as a means of supporting closer regional integration which also supports labour mobility and social inclusion. As well as policy dialogue through peer learning activities in various member states, there is a comprehensive database of national TVET systems, known as ReferNet, coordinated by a specialized European Union agency, CEDEFOP.

The African Union has been refining its 'Strategy to Revitalise Technical and Vocational Education and Training (TVET) in Africa' (COMEDAF, 2007). Subregions, such as the SADC, have recently conducted comparable assessments of TVET policies and systems (SADC and UNESCO, 2011). The Economic Community of West African States (ECOWAS) region comprises sixteen countries that are cooperating in education and other fields. Similar developments are taking place in the Association of Southeast Asian Nations (ASEAN) region. Topics addressed include the development of regional qualifications frameworks, certification and quality standards, and in some cases cooperation on teacher training.

Members of the Caribbean Community (CARICOM) and the subregional group, the Organization of Eastern Caribbean States (OECS), are in the process of revisiting and revising their policy frameworks for TVET and skills development, in cooperation with multilateral and bilateral partners including UNESCO, the ILO and Canada's Department of Foreign Affairs, Trade and Development.

At the regional level, cooperation often functions through meetings of ministers and senior officials, which provide occasions for policy dialogue on social and economic concerns, and for discussions on such topics as assessing the contributions that TVET and skills development can make to national and regional development strategies. Stakeholders include the secretariats of regional groupings and regional development banks (African Development Bank, Asian Development Bank, Caribbean Development Bank and so on). In the case of the Caribbean, TVET stakeholders may also include regional bodies such as the Caribbean Examinations Council, the Caribbean Association of National Training Agencies (CANTA) and the University of the West Indies. Despite being established on the basis of common interests, regional organizations often have highly diverse memberships. This can mean that certain groups of countries within regional groupings may be perceived as more dominant than others. Also, regional organizations often have limited resources, but they can nevertheless be valuable platforms in the wider context of North–South and South–South cooperation.

Other international partnerships are fostered through, for example, associations of countries with shared political histories, such as those adhering to the Organisation Internationale de la Francophonie or the Commonwealth, or relatively new multilateral organizations, including the World Trade Organization, the OECD, G20, the World Economic Forum, and

specialized agencies such as the European Training Foundation (ETF), an agency of the European Union. Additionally, there are other international groupings that operate at different levels of formality, such as the G77 and Small Island Developing States (SIDS).

The world of international cooperation is itself undergoing significant change, as was noted earlier in this book. In recent years many of the traditional bilateral donors have been reshaping their strategies to support TVET, in part in response to the resurgence of interest in this field. Some are forming alliances at the international, regional and national levels, in part to address concerns to improve donor coordination. So-called 'new' bilateral donors, such as Brazil, China, India and the Republic of Korea, are also increasingly becoming active in the field of TVET. The Republic of Korea, for example, attributes relatively high rates of economic growth to its investment in TVET and the success of its partnerships with the private sector. As a new donor, it is showing particular interest in supporting TVET in the SADC region. In addition to these governmental donors, private companies and foundations are also increasingly active in TVET.

National TVET policies and measures are informed by international initiatives such as the Education for All movement and Education for Sustainable Development. International normative instruments relevant to education and labour also set standards and recommendations relating to TVET. UNESCO and ILO normative instruments among others support coordination internationally and influence domestic policies and legislation. Established international networks such as the UNESCO-UNEVOC Network provide an excellent mechanism for peer learning, including through regional network meetings, an e-forum and virtual conferences through which stakeholders share their knowledge and experiences of TVET system reforms.

As education and development agendas begin to coalesce for a post-EFA and post-MDG era, there will be new opportunities for international cooperation in the field of TVET beyond 2015. In addition to the emergence of new international actors, there has been a dramatic change in the modalities of development cooperation in TVET, with emphasis shifting from traditional technical assistance and project management approaches towards sector-wide approaches. More participatory approaches based on more equal partnerships, knowledge sharing, attention and respect for contextual and cultural differences are also emerging.

Knowledge and the information base

The policy value of the analytical approach proposed in this book depends to some extent on the data and information available to analyse. While it can come from many sources, including research, the systematic development of a knowledge and information base can be helpful for countries to identify weaknesses and strengths in responding to the three demands. Too often, the discussions of TVET policy areas is constrained by a lack of reliable monitoring and evaluation evidence on the impacts of TVET policies. Across many national systems, and at the regional and international levels, there is often a paucity of robust and comprehensive management information. A more coordinated approach, which considers the impact of TVET on economic growth, social equity, sustainability and their sub-elements, could represent a positive step that can draw upon data, information and expertise from the corresponding stakeholder groups.

This participatory approach to the knowledge and information base could help determine which skills have the greatest payoffs for productivity, employability, employment creation, redistribution and global citizenship. This approach requires the linking of information from different sources. Successful TVET transformation calls for using the best data practicable and tools for the anticipation and forecasting of future skills needs. As was outlined in Chapter 2, there are numerous methods for gathering this information, and while many countries already have established robust systems, others suffer from diseconomies of scale and/or a lack of resources for carrying out such research. In all cases the analytical approach advocated by this book has important implications for research and evaluation.

Knowledge and information is an indispensable enabler of TVET transformation. Without it, the transformation may be difficult to launch and the direction it takes may not address the highest priorities for the demands of economic growth, social equity and sustainability. TVET requires a strong evidence base that includes quantitative and qualitative data collection and analysis, supported by MIS for both TVET and labour markets; the anticipation of skills needs; monitoring and evaluation evidence on the impacts of programmes and policies; and a wider research capacity encompassing specifically policy-related research and more open-ended academic work.

A culture of learning

Together, the analysis of TVET systems using the three lenses, the mobilization and coordination of specialist stakeholder groups and the strengthening of research, knowledge and information systems can be expected to produce extensive amounts of knowledge relating to TVET systems and relevant for future policies and policy measures. A further enabler for TVET transformation is that TVET systems are able to engage with relevant knowledge and information and to reflect on policy implications. For this reason, the emphasis here is on the need for the above developments to be linked to a culture of learning that embodies a set of attitudes, values and practices that support the process of organizational and individual continuous learning. A desire to building policies based on evidence rather than impressions is critical to the emergence of this culture.

A culture of learning can thrive if governments see the TVET policy-making process as a collective enterprise leading to a broader and more democratic process of participation and greater ownership. Building a culture of learning also requires mechanisms that support learning from individual and collective experience, as well as mechanisms for evaluating the impact of TVET policy and programmes and examining the scale-up prospects of pilot and innovation projects, and academic research. Finally, a culture of learning draws on new stakeholders such as social partners, researchers or practitioners, and helps them move from the periphery to the centre of policy-making (Lave and Wenger, 1991). It should encourage interaction, collaboration and reflection. However, in many countries and internationally there is a lack of TVET data, evaluation and research, and a culture of learning is still to be developed (see Raffe and Spours, 2007; Chakroun and Sahlberg, 2008; McGrath and Lugg, 2012).

This shift in the modalities of development cooperation in TVET is well illustrated by the concept of 'policy learning', the premise of which is that policy solutions are to be found within an understanding of the context itself, while policy-makers may learn from, but not simply transfer, policy experiences from elsewhere. Policy learning implies an action learning approach that seeks to build TVET reform through a process of engaging in and reflecting on reform processes. The *ETF Yearbook 2008* considers policy learning as a way for 'governments or systems of governance to inform policy development by

drawing lessons from available evidence and experience' (Raffe and Spours, 2007, cited in Chakroun 2008, p. 12). The rationale given is that 'systemic reforms of vocational education and training will only be successful and sustainable if policy development, formulation and implementation are firmly based on broad ownership and embeddedness in existing institutions' (Grootings, 2008, p. 2).

This approach reflects both the development orthodoxy that countries must be in the driving seat of their own development and some of the insights of learning theory (such as the work of major theorists like Dewey, Schön, Kolb, Lave and Wenger). The use of policy learning in TVET reform is built on the argument that active learning and genuine ownership can both be developed in the process of making policy. This serves to strengthen the particular policy in question, but also policies and policy-making more generally. Of course, policy-learning requires that the various national stakeholders have acquired the necessary capacity. As was noted above, crucially, this is more a matter of culture than technique, and stakeholders need to be genuinely committed to open debate and to making policy together.

Incentives and accountability

Ideally, TVET providers, instructors and the TVET system as a whole will have the incentives needed to be accountable to their multiple stakeholders, including learners, employers, parents, communities, trade unions and elected representatives. However there is a widespread critique cited in Chapter 3 that public providers have long been insulated from being held to account for a variety of reasons. First, they have often been funded according to block grants that reflect historical patterns of grant allocations, rather than learner numbers, let alone labour market outcomes. Second, their results in terms of pass rates have historically not affected their funding, student enrolments or staff remuneration. Where funding has become more closely tied to learner numbers, this has only served to encourage institutions to recruit more learners, regardless of issues of quality of teaching and learning, or labour market fit. Third, until relatively recently, TVET has been of such low political importance that politicians and civil servants are largely insulated from the effects of poor performance in public TVET. While poor pass rates in terminal examinations in secondary schools or universities will attract the attention of journalists, opposition politicians and other civil society organizations, poor public TVET results are much more likely to pass unnoticed and escape

criticism. Fourth, public TVET has also tended to have limited accountability to employers. In many cases, the educational aspect of TVET has been stressed, and with it, a sense that ministries of education know best about what it entails, and not employers. Fifth, accountability to learners in public TVET has also been limited. On average, TVET learners lack the social and cultural capital of those in elite secondary or tertiary education, and this can limit their ability to make their voices heard. Moreover, many TVET programmes are shorter than academic programmes; many institutions lack equivalent physical spaces for meeting compared to those found in other education institutions; and there is often less of a tradition of student organization in TVET.

The issue of accountability has been linked thus far to a historical deficit in public TVET providers. However, there are reasons for guarding against the assumption that private provision is necessarily more accountable. While there will be a greater accountability through market mechanisms in such provision, the limits of this must also be noted. Thus, there is a particular problem internationally that some private provision is of very poor quality and provides qualifications that have no labour market value. The international importance of qualifications and the limits to information about their intrinsic and extrinsic value can open up spaces for rogue providers. However, there is also an argument developing that increased hybridity of public–private funding and delivery raises the importance of the question of the extent to which private TVET provision is accountable to the state and aligned with national development goals (McGrath and Akoojee, 2010).

There are frequently policy messages in various countries and internationally about the value of TVET, but there needs to be further thought regarding what is said and how it is communicated. This may include new forms of engagement with other social partners and civil society to raise the profile of various forms of TVET, and greater accountability to their interests. It may also require that attention is paid to the messages sent by career guidance systems. However, given the importance of TVET as a means of improving labour market outcomes, it is of the utmost importance that attempts to improve the attractiveness of TVET are located within broader strategies to ensure that TVET learning is tied to enterprise, sectoral and national economic strategies that prioritize higher-skill approaches.

Clearly there are important challenges in enabling policy-makers, systems, institutions and providers to become better at hearing and responding to the voices of multiple stakeholders, and at making their perspectives an integral part of planning and the policy process. These concerns are very closely linked to the notion of responsiveness. Although this latter concept has largely been

seen exclusively in labour market terms, it needs to be seen as closely linked to accountability and to broader questions about TVET's purpose and its effectiveness in achieving this.

Capacity development for transforming TVET systems

The four enablers for TVET transformation envisaged above assume a level of capacity across organizations and individuals that is often not yet in place. Strengthening capacities for partnerships, networking, research and TVET governance as a whole is likely to be a long-term process. Capacity development here is seen less as a technical solution and more in terms of the social processes, requiring step-by-step improvements, greater awareness of cultural aspects and attention to the sustainability of TVET systems themselves.

There is a common aspect to each of the above enablers, and that is the principle of participatory and collaborative approaches to TVET system transformation. Like policy learning, the approach to capacity development advocated here overcomes the separation between theory and practice, since it too is grounded in an action learning philosophy, in which all stakeholders are encouraged to learn through active engagement and reflection on policy processes, rather than being passive recipients of training. This implies an intensive focus on how to organize collective experiences among different stakeholders: policy-makers, social partners and civil society.

Over more than twenty years, the United Nations Development Programme (UNDP) has built an evolving account of capacity development as being at the heart of development. This has been linked very clearly in the UNDP's work to notions of both sustainable development and human development. The UNDP account starts from the principle that individuals, communities and societies are best empowered to realize their full potential when the 'means of development are sustainable – home-grown, long-term, and generated and managed collectively by those who stand to benefit' (UNDP, 2009, p. 5).

The UNDP sees capacity development as:

> *The process through which individuals, organizations and societies obtain, strengthen and maintain the capabilities to set and achieve their own development objectives over time.*
>
> *Simply put, if capacity is the means to plan and achieve, then capacity development describes the ways to those means.*
>
> *An essential ingredient in the UNDP capacity development approach is transformation. For an activity to meet the standard of capacity development as practiced and promoted by UNDP, it must bring about transformation that is generated and sustained over time from within. Transformation of this kind goes beyond performing tasks; instead, it is more a matter of changing mind-sets and attitudes.* (UNDP, 2009, p. 5)

Conclusion

The effective use of the three analytical lenses requires the combination of stakeholder perspectives and the balancing of outlooks, knowledge and interests corresponding to the three demands and the weightings attached to them, whether at national, regional or international levels. This book has emphasized throughout the importance of improving governance as a necessary condition for successful TVET reform in many circumstances. A multi-stakeholder approach means that government fully recognizes the value of partnerships and networks, and is open to a more participatory form of governance, with the full range of stakeholders, particularly the private sector, taking on new roles.

The key item on the TVET agenda for the policy community concerns transforming and expanding learning opportunities for skills development through TVET. As argued in Chapter 1, TVET is moving higher on the education agenda of countries and drawing more attention to its performance in supporting economic growth, social equity and the sustainability of development. However, planning for an expanded role of TVET has far-reaching implications for the mind-set, networks and activities of TVET policy-makers and practitioners. It requires comprehensive linkages across policy fields, including education, labour, industry and trade, agriculture and youth, to help identify options, priorities and trade-offs.

This book sees transforming TVET as a shared responsibility which is dependent on the four and possibly other enablers being in place. With this view, the different elements of TVET are likely to require tailored approaches. The chapter emphasizes the importance of involving a wide range of stakeholders in the design and implementation of TVET policies, and thus encourages broad partnerships and networks at the national level. In this regard, TVET needs not only cross-governmental cooperation, but also broad partnerships with other stakeholders, including employers (from the formal and informal sectors), workers, community leaders, researchers, private TVET providers and community-based stakeholders. At the same time, capacity-building for stakeholders is necessary so that decision-makers, employers, employee representatives and civil society representatives are able to participate effectively in TVET, and to communicate and use the information and evidence available to them to design the best possible TVET policies and actions.

This chapter has advocated a whole range of partnerships and networks that bring professional and disciplinary perspectives and experiences relevant for TVET policies and measures. This will be important strategically for generating a shared vision, and pragmatically for ensuring that relevant knowledge and experience is taken into account. TVET policy processes require more than interministerial cooperation; they also call for inputs from employers, workers, entrepreneurs, providers, students and others. Their involvement should help to consolidate a shared vision and mission for TVET. The transformation of TVET necessitates extensive consultations in order to identify the strengths and limitations of current arrangements, identify current challenges by using the integrated analytical approach, adjusted to temporal and spatial contexts, and propose relevant ways forward.

The analytical approach proposed in Chapter 4 can help policy-makers and other stakeholders go beyond the aim of 'fixing' problems in TVET systems while they are in their current form of unmet potential. We are much more ambitious by providing an analytical tool that can help reorient and guide the transformation of TVET systems towards realizing TVET's potential for sustainable human development. Beyond a theory of TVET transformation, this chapter has identified four interrelated enablers which if in place can improve the prospects for a transformed TVET to play a central role in development and education policies and strategies into the future. For the successful transformation of TVET systems, as this chapter has emphasized, attention to the coordination of relevant stakeholders and the governance of the process become crucially important, perhaps even more important in the long term than the content of reforms.

Chapter 6

Transforming TVET

UNESCO is among the organizations that place TVET high on the list of education sector priorities. This prioritization brings with it the responsibility for UNESCO to lead global debates and thinking in the field, to track and analyse critical trends, and to actively shape future developments of TVET. Two world congresses, the first in 1999 and the second in 2012, define the review period covered in this book. The book itself is an example of UNESCO's voice in global debates on TVET. Beyond just a strong voice in the debate, the UNESCO TVET strategy specifically calls for strong intellectual leadership and challenges the Organization to 'reconceptualize the changing domain of skills and TVET, to propose interpretations of these concepts and to prepare a state-of-the-art publication on world trends and issues in TVET' (UNESCO, 2009*b*, p. 4). This book therefore responds to several converging demands on UNESCO.

This book was broadly divided into two parts. The first part – Chapters 1 to 3 – presented an analytical retrospective of key drivers that have shaped past development trends in TVET, specifically during the period between the two world congresses. The first part of the book also identified key strands of the responses by TVET systems to these drivers. Coincidentally, the review period almost overlapped with the period of the two internationally agreed goals with immense impact on education and training systems as a whole: the EFA agenda and the MDGs. The analysis concluded that within the review period, a number of contextual factors converged to place very high demands on, and consequently expectations of, the contribution of TVET systems to holistic and sustainable development.

While numerous and diverse, the book broadly characterized these factors as relating to three key demands on TVET systems: to contribute to economic growth, social equity and inclusion, and the sustainability of development. The retrospective analysis further observed that while these three interlocking demands have been perennial drivers of development trends in TVET, the financial and economic crisis of the late 2000s, its consequent deepening and widening of social inequalities and vulnerability, stagnation and even decline in growth, and escalation in unemployment, especially for youth, put more momentum into an already persistent call on TVET systems to respond effectively to these forces. These soaring expectations during the period of review pushed TVET higher on the education policy agenda of governments, the private sector, regional economic communities, development-oriented networks, bilateral and multilateral development agencies, NGOs and others.

The retrospective review also acknowledged the major strides that TVET systems across the world have made in responding to the demands for economic growth, social equity and inclusion, and the sustainability of development.

Furthermore, the review noted that such progress has been particularly remarkable in countries like Singapore, Australia, Germany and the Nordic countries, to name a few where TVET systems are viewed as part of the broader learning system rather than as a stand alone subsector. However, progress has generally been uneven and weak, especially in the developing world, which needs TVET learning the most. Overall, the retrospective review concluded that for many if not most countries, efforts of TVET systems to respond, gallant though they may have been, have fallen far short of expectations. In reality, TVET systems have not been and are still not able to meet the high expectations placed on them. As such, they represent an unmet potential.

The second and prospective part of the book – Chapters 4 to 5 – therefore addressed the key question, 'What would it take to unleash the potential of TVET systems?' It therefore looked forward for how to build on the lessons of past experience and produce more effective TVET systems, not only to meet current and future demands, but also to better reposition TVET within the post-2015 debates on education and training as well as on overall development.

From both the retrospective and prospective reviews, this book ends with four main conclusions. The first contends that the rising expectations of TVET have not been misplaced. As outlined in the Introduction, TVET systems have enormous potential to contribute in significant ways to addressing the demands placed on them for economic growth, social equity and inclusion, and the sustainability of development. However, because of the constraints outlined below, these systems have yet to realize their potential. The second conclusion is that while there are variations among countries, current levels of access to TVET learning opportunities are too low relative to the demands for learning opportunities and the demand for contextually relevant skills. The issue of insufficient access is more evident in developing countries because of the pressure from the bulge in demand for post-basic education and training emanating mainly from the EFA movement; the proportion of out-of-school children, youth and adults yearning for education and training opportunities; the proportion of people without employable skills; and the unmet demand for skills that often coexists with high unemployment rates.

Viewed against this background, the priority given in global and regional agendas towards enabling national TVET systems to expand access and produce thresholds of skilled persons required for the expected development impacts has not been misplaced. TVET systems retain enormous potential for addressing these demands. Against this background, the third conclusion reached is that this expansion of TVET should be led and accompanied by a fundamental transformation of TVET systems. Simply doing more of what has been done in

the past is not sufficient. Instead, there should be an expansion of 'constantly transforming and self-revitalizing' TVET systems. Such transformation and revitalization should have as goals the enabling of TVET systems to meet the demand to facilitate growth, social equity and the sustainability of development, and to do so in a contextually responsive, strategic, sustained and balanced manner. The fourth conclusion is that for success the transformation of TVET systems will require enabling factors that often lie outside the systems themselves, but without which success will be difficult.

So what stands in the way of TVET systems?

In retrospect, and with clearer hindsight, it can be concluded that the constraints highlighted below are what have prevented TVET systems to grow with the expectations placed on them. Current TVET systems find themselves ill-prepared to meet current demands, demands that have grown over time while the systems themselves have not experienced growth that is commensurate with the challenges faced.

Global focus on general basic education: As already noted, the retrospective review period of this book coincided with the implementation period of Internationally Agreed Goals (IAGs) on education, which tended to emphasize general education, particularly at the primary level. While the Dakar Education For All framework was broad in design and could have actually promoted TVET (formal, non-formal and informal) as a contributor to EFA goal 3, its conduct was more closely aligned with MDG goal 2, 'Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling' (United Nations, 2000). Global investment norms and other forms of resourcing followed suit.

The underinvestment in TVET that followed was ironic, especially given the bulge in the demand for post-basic education and training opportunities emanating from the EFA movement, as detailed in Chapter 1. It is also worthy of note that these IAGs came on top of the World Bank's much-cited research on private returns to investment in education (see for example Psacharopoulos, 1981; 1985), which suggested there were higher social returns from primary education. Findings that highlighted strong private returns from post-primary education, especially at the tertiary level – that includes much formal TVET

with its higher unit cost – encouraged a divestment of public development funding from TVET. Even more, the findings diminished the recognition of TVET as a public good which warrants high public investment.

Poor technical and institutional capacity: Divesting from formal TVET translated into the sluggish development of institutional capacity needed by TVET systems to deliver on expectations, which later soared, as outlined above. Relative to general basic and higher education and training, formal TVET was generally placed as a poor cousin not only in material resources but also in human resources. Among others, under-resourcing led to the poor technical capacity of TVET systems, as they generally could not attract the best national brains, up-to-date equipment, the latest technologies and all other enablers of effectiveness. Furthermore public policy did not enable a build-up of technical or administrative capacity, as TVET was not a policy priority in education and training.

Low social perception of TVET: Although the stigma is fast fading as TVET graduates prove more employable in times when jobs and paid work are hardest to come by, for a long time in many countries TVET was socially perceived as a last resort for learners who could not make it along the more 'brainy' tracks. On average, the reliance on learners with the weakest foundation in general education, who were further exposed to technically weak TVET systems, reproduced and even entrenched weak technical capacity in the field. Because it is often the children of the poor who are exposed to poor-quality general education and learning (Marope, 2014), by implication TVET also gained the stigma of a track for working-class children who generally had few options and little to no voice in public policy. Non-formal programmes that targeted vulnerable and disadvantaged groups, while assisting the immediate beneficiaries, may have inadvertently reinforced the idea of TVET as a second chance or last resort pathway, as a charitable activity for a minority, rather than being a matter of importance for everyone's future.

Weak analytical knowledge base and foresight: Another adverse effect of weak institutional and technical capacity has been a weak tradition for research-based knowledge, be it primary or applied, as well as weak documentation of promising operational knowledge. This is more so for TVET relative to general basic and higher education. Weak knowledge creation and management capacity justified poor investment in research as well as in R&D, thus trapping many TVET systems in a vicious cycle. The paucity of investment in R&D is particularly striking, given the proximity of TVET to industry. The paucity of applicable research methodologies, analytical frameworks and other knowledge creation tools that other subsectors have been able to build over time has been associated with a weak tradition for knowledge creation and management.

With the weak culture of research and analysis, TVET policies and programmes have often been designed without sufficient understanding of their contexts, and by implication, what they ought to have been responding to in market terms. The weak culture of research and analytical knowledge creation has also substantially limited TVET systems' capacity for foresight and a futuristic orientation that could anticipate and even lead trends rather than mostly be reactive to contextual pressures. Other functions that could have contributed to current knowledge and foresight, such as observatories of labour market trends and skills demands, have at best suffered from a lack of regular and current data or have been totally non-existent.

Weak technical consultation, communication and collaboration among key stakeholders: Inadequacies in the contextual knowledge base have often been exacerbated by the poor culture of collaboration across stakeholders who ought to collectively guide future developments in TVET. In particular, the overall macro-national development planning functions have not always provided needed guidance to TVET systems, and indeed the rest of the education and training sector, on current and prospective demands for skills. At the micro level, labour market surveys and the resultant databases have not always been regular and/or reliable, thus further weakening potential sources of the contextual knowledge that could have guided TVET systems. Furthermore TVET governance structures have not always reflected adequate representation of key stakeholders, particularly the private sector, whose representatives would be in a position to communicate the contextual demands on TVET.

Tendency for immediate tactical and imbalanced responses: As elaborated in the book's early chapters, past development trends in TVET can be attributed to a combination of external contextual factors that demanded responses from the systems, and the systems' efforts to respond. However, the combined weak analytical knowledge base and the pressure for responses have tended to lead to immediate and tactical reforms rather than long-term, deliberate and strategic reforms. The pressure for immediate responses has meant that the most prominent issues tended to receive more attention. Given the proximity of TVET to the labour market and given economic and financial difficulties in the review period, economic demands on TVET have tended to receive more attention that those of social equity and sustainability. Specific examples include reforms geared towards improving productivity and therefore growth, and those to improve employability, particularly for youth. Even so, economic demands have not always received comprehensive and well-balanced attention. Illustrating this is the neglect of issues pertaining to the structures in place for supporting the involvement of employers and unions in the governance of TVET.

Tendency for policy borrowing: The insufficient understanding of specific contexts of TVET systems and the pressure for immediate responses have often encouraged the borrowing of policy and programmatic reforms with insufficient adaptation to the context. This situation hardly fostered the contextual relevance of TVET systems, much against the high expectations for their contribution to economic growth, social equity and sustainability within specific national development contexts. Moreover, the disconnect from the demands of specific contexts attracted the much cited criticism that some parts of TVET systems, especially formal public TVET, lacked relevance and had a high unit cost. The situation also strengthened arguments against TVET as a public good, while strengthening arguments for governments to rather invest in good quality general education and leave specialized training for occupations to employers. In particular, this position further cemented the narrow conceptualization of TVET as training for specific occupations rather than the broader conceptualization outlined in the Introduction and in Chapter 1.

What would it take to unleash the potential of TVET systems?

Unleashing the potential of TVET systems will essentially require a decisive redress and even eradication of constraints that stand in the way of the transformation of these systems in the first place. At the same time, it should include building the capacity and foresight required to anticipate future constraints and to mitigate their imminent risks. Such measures will include:

A reconceptualization of TVET. Chapter 1 aptly noted that the conceptualization of development has evolved to connote a more holistic, multifaceted and dynamic concept. As such, sustaining the development relevance of TVET systems and ensuring they meet their expected contribution to development as currently understood requires a serious rethinking of TVET. Perceptions of it need to change from an isolated last-resort subsector that trains people for technical and vocational requirements, to being a human right and an integral part of everyone's professional and personal development throughout life. The reconceptualization of TVET has in fact been evolving towards the new development paradigm, albeit unevenly and, most critically, without the operational reforms that should give effect to such a shift. Other than its breadth of scope, development is progressively recognized as being both

geographically and temporally contextual. At the same time, the context is itself dynamic, as it is constantly changing and wide-ranging as it straddles several geographic planes. This is even more so with the progressive geographic integration of a globalizing world. For developing countries in particular the breadth of the range is a bit more extended when considering their level of development and that of the so-called developed world they tend to emulate. Specific actions required to give effect to the evolving concept of TVET are:

Redesign the scope, sequence, balance and relevance of TVET curricula. As detailed in the Introduction, the scope of quality TVET programmes should cover all domains of learning as well as traditional fields of TVET. As with general education, the sequence should first ensure that TVET learners are equipped with solid and sustainable basic skills that enable them to become effective and adaptable lifelong learners. The broadening of the scope should therefore not be at the expense of TVET's comparative advantage, which is its closer proximity to the world of work than other forms and settings of education and learning.

Rearticulate TVET systems as part of the overall national lifelong learning system. More profoundly, the transformation of TVET systems should ensure their full integration into the education and training sector within a broader lifelong learning framework. As presented in the Introduction, quality TVET has a broad scope of content that partially overlaps with that of basic and higher education. Furthermore, TVET systems are more advanced in the recognition of formal, non-formal and informal learning. Additionally, TVET systems are more adept at providing flexible just-in-time learning opportunities. Combined, these factors make TVET systems easier to vertically and horizontally articulate with other subsectors and across different learning settings. The transformation of TVET should therefore exploit the potential of TVET systems and even use them to envisage and catalyse the operationalization of national lifelong learning policies and plans. TVET systems that have sharpened their sensitivity and responsiveness to changes in their contexts are a potential resource for the rest of education and training systems.

Strengthen the analytical knowledge that needs to underpin future development of TVET systems. The transformation of TVET systems should be based on knowledge and evidence derived from a close analysis of TVET systems in their contexts. Transformation efforts should therefore make both budgetary and technical provisions to continuously build up the current evidence and knowledge base for TVET. A diversity of approaches and instruments, such as primary and applied research, labour market surveys, reliable and current databases, observatories of skills demands, case studies and tracer studies,

should be taken into serious consideration to build over time the knowledge and evidence base required to guide the transformation of TVET systems. More specifically, such quantitative and qualitative knowledge and evidence should be applied to guide the balancing of the need for the systems' responses to immediate challenges with the need for long-term responses. Whether immediate, medium or long-term, the transformation should enable TVET systems to render strategic, balanced and well-considered responses to the three dimensions of demand placed on them.

In Chapter 4 the book presented an analytical framework that can be used to transform TVET systems from the tendency for immediate, tactical, imbalanced and contextually disconnected responses to the balanced and well-considered responses already outlined above. The combined strengthening of the knowledge and evidence base and the application of the proposed framework should reduce the tendency for unadapted policy borrowing and the risk of the contextual irrelevance of TVET systems.

Ensure the development relevance of TVET systems. The development relevance of TVET systems should be cued by an understanding of the macro and micro development outlook in specific national as well as transnational contexts. Such knowledge should be evidence-based and derive from close studies of the development context of TVET systems. Contextual knowledge should be systematically applied to guide policies, strategies, plans and programmes for transforming TVET. Full cognisance should be taken of the diversity of levels of country context – local, central, rural, urban, growth opportunities and so on. At the same time, contextual relevance should equally take the global village into account, especially at the micro level of the labour market. As detailed in Chapter 1, TVET has to prepare learners for the reality that their opportunities for work may lie outside the borders of their country. Ensuring local, national, regional and global relevance of TVET programmes is therefore a significant consideration for TVET system transformation. For example, the question of whether TVET graduates should be able to work anywhere in the world, or alternatively in strategically targeted geographical spaces, should be decisively addressed.

Relevance beyond national borders means that TVET systems should offer learners an educational and training experience of a quality and orientation that makes them competitive beyond one country. As presented in Chapters 2 and 3, national TVET systems have used and continue to use instruments such as NQFs and RQFs not only to ensure quality, but to also enable free movement of learners and teachers. At the global level, some of UNESCO's normative instruments such as Conventions and Recommendations

are under revision to facilitate among others, the recognition of diplomas and qualifications across regions and even globally. As countries endeavour to transform their TVET systems, questions of quality and relevance beyond borders have to receive due attention.

Strengthen the technical quality of TVET systems. Although relevance normally implies quality, in the case of TVET systems the fact that transformation should focus on quality improvements cannot be overemphasized. The curricular revisions already mentioned should substantially advance the quality and effectiveness of TVET systems. Other key measures will require TVET systems to:

Reconsider entry criteria for students and staff. If the stigma of TVET as an opportunity of last resort is to be eradicated and if the quality of programmes is to be globally competitive, then TVET systems, and especially formal providers, have to seriously reconsider their entry criteria. Teachers cannot give learners what they themselves do not have. Mediocre teachers will breed mediocrity. At the same time, mediocre students will present a challenge for teachers to raise quality, relevance and competitiveness. This is especially serious where the expectations are high that TVET graduates will contribute to the quality of goods and services and the productivity of enterprises. The transformation of TVET systems has to take into account their current stock of teachers and students, and where necessary, provide support to raise standards of TVET teachers and students while phasing in higher levels of requirements over time.

Only when TVET is seen as catering for the full range of students and occupational fields, including the highest quality of programmes, can it achieve its deserved status and standing in the public perception. Given the pressure to simultaneously transform and expand TVET learning, this is a critical issue. As the overall level of appreciation for the quality of TVET and its benefits for development rises, it will become easier to ensure that the capacities of government officials and TVET authorities are commensurate with the complexity and strategic importance of their work for the success of wider education and development policies.

Reconsider the financing of TVET systems and articulate financing norms. As with other subsectors, improving the quality of TVET systems will require a reasonable level of public and private investment in a range of aspects, and at all levels, including research, development and maintenance of databases, programmes, infrastructure, staff, equipment, books and instructional materials. Financing norms will need to achieve a balance between financing

inputs and financing outcomes. In addition, transforming TVET systems will require them to reinvent themselves as both effective and resource efficient systems which capitalize on their intersectorality, diversity and transversality, through among others, the use of modern technologies and their extensive networks.

Enabling the transformation of TVET systems

The failure of TVET systems to meet the expectations placed on them cannot be attributed exclusively to the systems themselves. External enablers beyond the control of TVET systems also need to be present for transformation to be successful. The list of external enablers includes actions that connect TVET with the broader education sector.

Adopt a balanced and comprehensive approach to the development of the education sector. The reconceptualization of TVET and the proposed scope of its content will not be possible without adjustments to the whole education and training sector that allow for the proposed changes. The transformation of TVET should entail improving its connections and articulation with other subsectors and areas of education. Most importantly, the reconceptualization of TVET cannot be achieved by the TVET community alone. Successful transformation implies that other decision-makers in education and beyond increasingly accept that TVET is not best conceived as a parallel system, but that it is integral to the success of education itself and a key for enhancing the future capacity of education for transformation and its relevance to development. The closer articulation of TVET with the whole of the education sector will improve vertical and horizontal learning pathways and give increased impetus to the operationalization of 'TVET for all'.

With increased value being placed on TVET as a central and cross-cutting element of education, it is clear that sector budgets will necessarily have to be adapted to reflect the balanced approach to education sector development and the commensurate place of TVET. Over time other development sectors can also be expected to invest a greater proportion of their budgets in TVET and in education itself.

Closer links and articulation between the education sector and other policy areas (such as agriculture, health, energy and youth services, for example) is also a necessary step in TVET's transformation. When other sectors are convinced of the added value that education and training brings to their own endeavours, additional funding, capacities and the widened accountability of education systems and policies will follow. Recognition by education and training stakeholders that TVET's intersectoral governance arrangements, networks and responsiveness can offer inspiration for efforts to increase the relevance of education systems to development may be a crucial enabler for TVET's own transformation. The benefits are mutually reinforcing, as the valuing and consequent strengthening of TVET can further help education systems themselves make the necessary shift from being mainly 'teaching' systems to being 'teaching and learning' systems, better serving the needs of their societies.

Develop and implement a national framework for lifelong learning. TVET systems alone cannot assure opportunities for lifelong learning. An overall national lifelong learning framework requires connecting TVET systems with other subsystems to make for a seamless framework that facilitates learner transitions within the overall education and training system, and between this system and the world of work as well as life in general. TVET systems need this enabling sector framework in order to successfully be transformed for work and life. This framework provides a way of linking together the institutions, programmes, learning and assessment that at present often proceed in parallel, or even in isolation. Lifelong learning has a role in helping reduce segregation of various forms within education and training and in its social and economic outcomes. Lifelong learning presents a challenge to rigid associations between age cohorts and education, and should in the future make it more attractive for learners of all ages to pursue their educational aspirations in a flexible way, more tailored to their individual needs and work or life circumstances. Lifelong learning illuminates the importance of learning and sites of learning that were previously undervalued and under-recognized, most notably the home, the community and the workplace.

Improve the quality of basic general education. As highlighted in the Introduction, the quality of the throughput of students from basic levels of education determines the success with which formal TVET programmes – at upper secondary and post-secondary levels – can adjust upward their admission standards. Students who have benefited from quality basic education,

including lower secondary education, are far better equipped than others for the world of work and further education. Efforts to achieve increased participation in secondary education and improve its quality and relevance have a direct bearing on TVET, whether formal, non-formal or informal. Not only are the knowledge, skills and attitudes acquired in basic education an asset for TVET, an expanding basic education system which has to cater for students from ever more diverse social and educational backgrounds brings secondary education closer to the real world, and can in the long term have the benefit of contributing to the creation of an education system that is more sensitive to different learners' contexts and futures. Ensuring equality of opportunities in basic education will widen the pool of eligible candidates for upper secondary and post-secondary TVET, enabling formal and non-formal TVET providers to focus on equipping students with specialized and advanced knowledge, skills and attitudes, since basic levels of education have already been achieved.

Launch public education and reconsider incentive systems. As another external enabler of TVET's transformation, public education on the nature, role and potential individual and collective benefits of TVET is required to encourage a positive shift in parental and learners' dispositions toward TVET. However, improving the attractiveness of TVET is also likely to involve increasing the confidence of stakeholders, including students, in the value of what is learned, especially through demonstrating that the future prospects of graduates from TVET programmes are equal to or exceed the prospects of those from other programmes. This public education and advocacy should be accompanied by a change in factors such as student entry requirements to formal TVET programmes, opportunities for higher levels of lifelong learning, and graduates' rewards and remunerations. These factors combine to form incentive or disincentive mechanisms.

Strengthen national capacity for data collection and management. As suggested at several points in this book, strengthening the analytical and knowledge base for TVET systems in part depends on the availability of reliable and current data beyond TVET itself, as well as having relevant research and analytical capacities. These capacities should be commensurate with the task of analysing the complexity of TVET systems, including the multiple factors and processes influencing successful transitions into and within the world of work. Research capacities for TVET development are part of a wider research environment. National research capacities need to be interdisciplinary, and

combine local and global knowledge as required. Expertise in both social and natural sciences is essential for comprehensively assessing the development context, challenges and future prospects, in order to inform the continuous transformation of TVET systems so that they are able to maximize their various contributions.

Create effective demand for skills and for green skills. In essence, TVET systems create skills required for employability. The systems can modestly contribute to employment creation as outlined in the Introduction. However, it would remain difficult for transforming TVET systems to effectively contribute to employment if country-level macro and micro economic policies and programmes are not oriented towards employment creation. More particularly, economic policies will have to be reoriented to growth and employment creation rather than perpetuate stagnation or jobless growth, and national development policies will need to prioritize sustainable growth and global citizenship as indispensable enablers to the proposed transformation of TVET systems. Without policy leadership, as expressed in national development plans or strategies that acknowledge the importance of global citizenship and sustainable development, TVET systems will be constrained in what they can achieve in these regards. Without a clear lead, TVET systems may make progress towards education about citizenship, or education for sustainable development, through for example 'greening' TVET providers, but still fall short of making significant impacts upon global citizenship or sustainable development in the world beyond.

Strengthen multi-stakeholder partnerships for TVET development. As highlighted in Chapter 1, the concept of development has over time evolved in a multifaceted, multidisciplinary and complex manner. Understanding development potentials in a specific context and transforming TVET systems to effectively contribute to realizing this potential can only succeed if each partner has the space and the means for shaping the direction and scope of the transformation of TVET systems. Most important, the transformation of TVET systems requires the comparative advantage of all partners, including but going beyond the demand and the supply sides of the equation. Capable institutions with interministerial and multi-stakeholder representation, such as the fast-emerging NTAs, should therefore be given serious consideration as instruments for steering the transformation of TVET.

Conclusion

It has to be restated that TVET systems have moved higher on the education policy agenda. A range of instruments from global to national are in place to guide the transformation of TVET. The Shanghai Consensus and numerous national TVET policies and plans illustrate this. The transformation process now needs to go beyond instruments and actually give these instruments effect. The post-2015 dialogue on education and training in particular, and sustainable development in general, provides an opportunity to reposition these instruments as effective contributors to this transformation. The transformation, however, will have to go beyond TVET systems themselves and build a broader enabling environment. For closer articulation within education as a whole, lifelong learning provides an organizing principle and a process perspective, centred on learning, through which members of the broad education community can learn to learn from each other. This should facilitate not only forward or vertical progression for learners, but also greater cognizance of the roles of education, horizontally and 'lifewide'. A linear view of education, and development itself, appears insufficient when it comes to making sideways connections between subsectors, and between the various sectors of development, including education, that are necessary for sustainability.

Given the importance of the issues at stake, for education and development, visionary leadership from the top will be needed to mobilize collective responsibility and actions, starting with structures that facilitate interministerial cooperation and dialogue between all stakeholders. Where such interactions are built upon relationships of trust and mutual respect, it should be possible to identify priorities of mutual interest for deeper cooperation and collaboration. Although not a 'quick fix', there is strategic value in facilitating conversations and a culture of knowledge sharing and mutual learning as enablers and a means of policy implementation. The realization that for high and low-income countries alike, development problems are rarely contained within one sector of development but are best addressed collectively, necessitates a broader transformation of public policies and governance itself. The transformation of TVET is both dependent on such transformations and able to contribute to them. When the transformation of TVET and the transformation of governance are in synchronization, they can be mutually reinforcing. When its potential is unleashed, the transformative power of TVET should be profound.

Abbreviations and Acronyms

ACCC	Association of Canadian Community Colleges
ADEA	Association for the Development of Education in Africa
AIDS	Acquired Immune Deficiency Syndrome
ALE	Adult Learning and Education
ALMPs	Active Labour Market Policies
ANQ	Agência Nacional para a Qualificação [National Agency for Qualifications, Portugal]
ASEAN	Association of Southeast Asian Nations
ATFP	Agence Tunisienne de la Formation Professionnelle
BIBB	Bundesinstitut für Berufsbildung [Federal Institute for Vocational Education and Training of Germany]
BOTA	Botswana Training Authority
BVE Raad	Raad voor Beroepsonderwijs en Volwasseneneducati [Dutch Council for Vocational and Adult Education]
CAPLAB	Centro de Servicios para la Capacitación y e l Desarrollo [Peru]
CARICOM	Caribbean Community
CBOs	Community-Based Organizations
CBT	Competency-Based Training
CEDEFOP	European Centre for the Development of Vocational Training
CERI	Centre for Educational Research and Innovation
CoL	Commonwealth of Learning
COMEDAF	Conference of Ministers of Education of the African Union
COTVET	Council for Technical and Vocational Education and Training [Ghana]
CQM	Certificat de Qualification aux Métiers [Benin]
CQP	Certificat de Qualification Professionnelle [Benin]
CV	Curriculum Vitae
DDR	Disarmament, Demobilization and Reintegration
ECOWAS	Economic Community of West African States
EFA	Education for All
EKKA	Eesti Kõrghariduse Kvaliteediagentuur [Estonian Higher Education Quality Agency]
EQF	European Qualifications Framework
ESD	Education for Sustainable Development

ETF	European Training Foundation
ETVET	Employment and Technical and Vocational Education and Training [Jordan]
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit [German Federal Enterprise for International Cooperation]
HIV	Human Immunodeficiency Virus
HRD	Human Resource Development
IADB	Inter-American Development Bank
IAG	Information, Advice and Guidance
ICT	Information and Communications Technology
IILS	International Institute for Labour Studies'
IiP	Investors in People
ILO	International Labour Organization
IRR	Internal Rate of Return
ISCED	International Standard Classification of Education
IT	Information Technology
KERIS	Korea Education and Research Information Service
LCE	Learner-Centred Education
MBO	Middelbaar beroepsonderwijs [Middle-level applied education: Netherlands]
MCLCs	Multi-purpose Community Learning Centres
MDGs	Millennium Development Goals
MIS	Management Information Systems
NAFTA	North American Free Trade Agreement
NAQAA	National Agency for Quality Assurance and Accreditation
NAVTTC	National Vocational and Technical Training Commission [Pakistan]
NCHRD	National Centre for Human Resources Development [Jordan]
NEA	National Employment Agency [Cambodia]
NGO	Non-Governmental Organization
NOC	New Opportunities Centre
NQF	National Qualifications Frameworks
NSA	National Skills Authority
NSDC	National Skills Development Corporation [India]
NTA	National Training Authority
OECD	Organisation for Economic Co-operation and Development
OECS	Organization of Eastern Caribbean States
OTEC	Organismos Técnicos de Capacitación [Chile]
PISA	Programme for International Student Assessment
PPP	Public–Private Partnership

PREJAL	Promoción del Empleo Juvenil en América Latina [Project for Youth Employment Promotion in Latin America]
REC	Regional Economic Community
RPL	Recognition of Prior Learning
RQF	Regional Qualifications Framework
SACMEQ	Southern Africa Consortium for Monitoring Education Quality
SADC	Southern African Development Community
SDSP	Sustainable Development Skills Profile
SENAR	Serviço Nacional de Aprendizagem Rural [National Service for Rural Apprenticeship, Brazil]
SENCE	Servicio Nacional de Capacitación y Empleo [National Service of Training and Employment, Chile]
SETA	Sector Education and Training Authority [South Africa]
SME	Small and Medium-sized Enterprise
SSC	Sector Skills Council
TAFE	Technical and Further Education [Australia]
TESDA	Technical Education and Skills Development Authority [Philippines]
TEVETA	Technical Education, Vocational and Entrepreneurship Training Authority [Zambia]
TREE	Training for Rural Economic Empowerment
TVET	Technical and Vocational Education and Training
TVTC	Technical and Vocational Training Corporation
UIS	UNESCO Institute for Statistics
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNIDO	United Nations Industrial Development Organization
UNSCR	United Nations Security Council Resolution
UNSTT	United Nations System Task Team on the post-2015 UN Development Agenda
VET	Vocational Educational and Training
VETA	Vocational Educational and Training Authority [Tanzania]
WCEFA	World Conference on Education for All
WHO	World Health Organization
WTO	World Trade Organization

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Transforming Technical and Vocational Education and Training

P.T.M. Marope, B. Chakroun and K.P. Holmes

In view of steadily rising expectations on technical and vocational education and training (TVET) systems this book takes stock of contextual demands and recent policy trends from around the world. The book identifies an expanding disconnect between the external demands of economic growth, social equity and the sustainability of development and the skills being supplied. The authors ask, 'What would it take to unleash the potential of TVET systems?' In response an integrated analytical approach is proposed through which economic growth, social equity and sustainability perspectives can be strategically combined so as to address contemporary policy concerns such as youth unemployment, gender disparities and climate change. Policy-makers and other stakeholders may use this approach for the analysis and assessment of TVET systems, to identify appropriate strategies and key enablers for their transformation.

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